



# MANATEE COUNTY GOVERNMENT

## INVITATION FOR BID (IFB) #10-1766DC JUVENILE PROCESS CENTER BUILDING MODIFICATIONS

Manatee County, a political subdivision of the state of Florida, (hereinafter "Manatee County" or the "County" or "Owner") will receive sealed bids from individuals, corporations, partnerships, and other legal entities organized under the laws of the state of Florida or authorized to conduct business in the state of Florida.

### **NON-MANDATORY INFORMATION CONFERENCE & SITE VISIT**

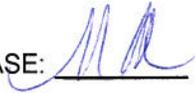
In order to insure that all prospective bidders have sufficient information and understanding of the County's needs, an information conference will be held **June 23, 2010 at 10:00 A.M. at the Manatee County Fountain Room, 1002 Manatee Avenue West (formerly Speakeasy, on west side of the County Administration Building), Bradenton, Florida.**

Immediately following the Information Conference, a site visit will be conducted at the **Juvenile Process Center Building (formerly an EMS facility) at 421 17<sup>th</sup> Street West, Bradenton, Florida.** Inspection of the site is a requirement to be considered for award of this contract.

**DEADLINE FOR CLARIFICATION REQUESTS: June 29, 2010 at 5:00 P.M.**

**TIME AND DATE DUE: July 14, 2010 at 11:00 A.M. at Manatee County Purchasing, 1112 Manatee Avenue West, Suite 803, Bradenton, Florida 34205.**

FOR INFORMATION CONTACT:  
**DEBORAH CAREY-REED**  
(941) 749-3074 FAX (941) 749-3034

AUTHORIZED FOR RELEASE: 

**IFB #10-1766DC  
JUVENILE PROCESS CENTER BUILDING MODIFICATIONS**

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SECTION A  
**INFORMATION TO BIDDERS**

**A.01 OPENING LOCATION**

These bids will be publicly opened at Manatee County Purchasing, 1112 Manatee Avenue West, Suite 803, Bradenton, Florida 34205 in the presence of County officials at the time and date stated, or soon thereafter. All bidders or their representatives are invited to be present.

**A.02 INSPECTION OF THE SITE**

Prior to the submission of a bid, each bidder or proposer shall visit the site to become familiar with all conditions that may affect services that are required to completely execute the full intent of these specifications. Inspection of the site is a requirement to be considered for award of this contract.

**A.03 BID AND PROPOSAL DOCUMENTS**

**Bids and Proposals** on <http://www.mymanatee.org>

Bid or Proposal documents and the Notices of Source Selection related to those Bids or Proposals are available for download in a portable document format (.PDF) file on the Manatee County web page on the Purchasing tab under "Bids and Proposals." You may view and print these files using Adobe Acrobat software. You may download a free copy of this software (Adobe) from the County's web page if you do not have it. **Manatee County collaborates with the Manatee Chamber of Commerce** on distributing solicitations using the RFP Tool web page on the Chambers website: <http://www.Manateechamber.com> to post Bid and Proposal documents in a portable document format (.PDF) file. This step is in addition to the posting on Manatee County Government web pages.

Manatee County may also use an internet service provider to distribute Bids and Proposals. A link to that service <http://www.DemandStar.com>, is provided on this website under the Tab "DemandStar". Participation in the DemandStar system is not a requirement for doing business with Manatee County. Note: The County posts the Notice of Source Selection seven calendar days prior to the effective date of the award.

IT IS THE RESPONSIBILITY OF EACH VENDOR, PRIOR TO SUBMITTING THEIR BID or PROPOSAL, TO CONTACT MANATEE COUNTY PURCHASING (see contact information on cover page of this document) TO DETERMINE IF ADDENDA WERE ISSUED AND TO MAKE SUCH ADDENDA A PART OF THEIR BID or PROPOSAL.

**A.04 BID AND PROPOSAL FORM DELIVERY REQUIREMENTS**

Any bids or proposals received after the stated time and date will not be considered. It shall be the sole responsibility of the bidder or proposer to have their bid or proposal delivered to Manatee County Purchasing for receipt on or before the stated time and date. If a bid or proposal is sent by U.S. Mail, the bidder or proposer shall be responsible for its timely delivery to Purchasing. Bids or proposals delayed by mail shall not be considered, shall not be opened at the public opening, and arrangements shall be made for their return at the respondent's request and expense.

**A.05 DEADLINE FOR CLARIFICATION REQUESTS**

**June 29, 2010 at 5:00 P.M.** shall be the deadline to submit all inquiries, suggestions, or requests concerning interpretation, clarification or additional information pertaining to the Invitation for Bids to Manatee County Purchasing.

This deadline has been established to maintain fair treatment for all potential bidders, while maintaining the expedited nature of the Economic Stimulus that the contracting of this work may achieve.

**A.06 CLARIFICATION & ADDENDA**

Each bidder shall examine all Invitation for Bids documents and shall judge all matters relating to the adequacy and accuracy of such documents. Any inquiries, suggestions or requests concerning interpretation, clarification or additional information pertaining to the Invitation for Bids shall be made through Manatee County Purchasing. The County shall not be responsible for oral interpretations given by any County employee, representative, or others. The issuance of a written addendum is the only official method whereby interpretation, clarification or additional information can be given.

If any addenda are issued to this Invitation for Bid, the County will Broadcast the addenda on the Demand Star distribution system to "Planholders" on this web service, and post the documents on the Purchasing web page at <http://www.mymanatee.org> which can be accessed by clicking on the "Purchasing" button and then clicking on the "Bids and Proposals" button. It shall be the responsibility of each bidder, prior to submitting their bid, to contact Manatee County Purchasing (see contact on page 1) to determine if addenda were issued and to make such addenda a part of their bid.

**A.07 SEALED & MARKED**

One original and two copies of your bid shall be submitted in one sealed package, clearly marked on the outside "Sealed Bid #10-1766DC Juvenile Process Center Building Modifications" with your company name. Address package to:

Manatee County Purchasing  
1112 Manatee Avenue West, Suite 803  
Bradenton, Florida 34205

**A.08 LEGAL NAME**

Bids shall clearly indicate the legal name, address and telephone number of the bidder. Bids shall be signed above the typed or printed name and title of the signer. The signer must have the authority to bind the bidder to the submitted bid.

**A.09 BID EXPENSES**

All expenses for making bids to the County are to be borne by the bidder.

**A.10 IRREVOCABLE OFFER**

Any bid may be withdrawn up until the date and time set for opening of the bid. Any bid not so withdrawn shall, upon opening, constitute an irrevocable offer for a period of 90 days to sell to Manatee County the goods or services set forth in the attached specifications until one or more of the bids have been duly accepted by the County.

#### A.11 RESERVED RIGHTS

The County reserves the right to accept or reject any and/or all bids, to waive irregularities and technicalities, and to request resubmission. Also, the County reserves the right to accept all or any part of the bid and to increase or decrease quantities to meet additional or reduced requirements of the County. Any sole response received by the first submission date may or may not be rejected by the County depending on available competition and current needs of the County. For all items combined, the bid of the lowest responsive, responsible bidder will be accepted, unless all bids are rejected. The lowest responsible bidder shall mean that bidder who makes the lowest bid to sell goods and/or services of a quality which conforms closest to or most exceeds the quality of goods and/or services set forth in the attached specifications or otherwise required by the County, and who is fit and capable to perform the bid as made.

To be responsive, a bidder shall submit a bid which conforms in all material respects to the requirements set forth in this Invitation For Bid. To be a responsible bidder, the bidder shall have the capability in all respects to perform fully the contract requirements, and the tenacity, perseverance, experience, integrity, reliability, capacity, facilities, equipment, and credit which will assure good faith performance. Also, the County reserves the right to make such investigation as it deems necessary to determine the ability of any bidder to furnish the service requested. Information the County deems necessary to make this determination shall be provided by the bidder. Such information may include, but shall not be limited to: current financial statements, verification of availability of equipment and personnel, and past performance records.

#### A.12 APPLICABLE LAWS

Bidder must be authorized to transact business in the State of Florida. All applicable laws and regulations of the State of Florida and ordinances and regulations of Manatee County will apply to any resulting agreement. Any involvement with any Manatee County procurement shall be in accordance with Manatee County Code of Laws, as amended. Any actual or prospective bidder who is aggrieved in connection with the solicitation or award of a contract may protest to the Board of County Commissioners of Manatee County as required in Manatee County Code of Laws.

A protest with respect to this Invitation For Bid shall be submitted in writing prior to the scheduled opening date of this bid, unless the aggrieved person did not know and could not have been reasonably expected to have knowledge of the facts giving rise to such protest prior to the scheduled opening date of this bid. The protest shall be submitted within seven calendar days after such aggrieved person knows or could have reasonably been expected to know of the facts giving rise thereto.

#### A.13 CODE OF ETHICS

With respect to this bid, if any bidder violates or is a party to a violation of the Code of Ethics of Manatee County per Manatee County Purchasing Code of Laws, Article 3, Ethics in Public Contracting, and/or the State of Florida per Florida Statutes, Chapter 112, Part III, Code of Ethics for Public Officers and Employees, such bidder may be disqualified from performing the work described in this bid or from furnishing the goods or services for which the bid is submitted and shall be further disqualified from submitting any future bids for work or for goods or services for Manatee County.

A.13 CODE OF ETHICS (cont'd)

The County anticipates that all statements made and materials submitted in a bid will be truthful. If a bidder is determined to be untruthful in its bid or any related presentation, such bidder may be disqualified from further consideration regarding this Invitation For Bid.

A.14 COLLUSION

By offering a submission to this Invitation For Bid, the bidder certifies that the bidder has not divulged, discussed or compared their bid with other bidders, and has not colluded with any other bidder or parties to this bid whatsoever. Also, bidder certifies, and in the case of a joint bid each party thereto certifies as to their own organization, that in connection with this bid:

- a. any prices and/or cost data submitted have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices and or cost data, with any other bidder or with any competitor;
- b. any prices and or cost data quoted for this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder, prior to the scheduled opening, directly or indirectly to any other bidder or to any competitor;
- c. no attempt has been made or will be made by the bidder to induce any other person or firm to submit or not to submit a bid for the purpose of restricting competition;
- d. the only person or persons interested in this bid, principal or principals is/are named therein and that no person other than therein mentioned has any interest in this bid or in the contract to be entered into; and
- e. no person or agency has been employed or retained to solicit or secure this contract upon an agreement or understanding or a commission, percentage, brokerage, or contingent fee excepting bona fide employees or established commercial agencies maintained by bidder for purpose of doing business.

A.15 BID FORMS

Bids must be submitted on attached County forms, although additional pages may be attached. **Bidders must fully complete all Bid Form pages of the Bid submitted. Bid Forms must be executed by an authorized signatory who has the legal authority to make the offer and bind the company. Bidders must fully comply with all bid specifications, terms, and conditions.** Failure to comply shall result in contract default, whereupon, the defaulting vendor shall be required to pay for any and all procurement costs, damages, and attorney fees as incurred.

A.16 DISCOUNTS

Any discounts must be incorporated in the prices bid; and not shown separately. The prices as shown on the bid form shall be the price used in determining award(s).

A.17 TAXES

Manatee County is exempt from Federal Excise and State Sales Taxes. (F.E.T. Exempt Cert. No. 59-78-0089K; FL Sales Tax Exempt Cert. No. **51-02-027548-53C**); therefore, the vendor is prohibited from delineating a separate line item in his bid for any sales or service taxes. Nothing herein shall affect the vendor's normal tax liability.

**A.18 MATHEMATICAL ERRORS**

In the event of multiplication/extension error(s), the unit price shall prevail. In the event of addition error(s) the extension totals will prevail. All bids shall be reviewed mathematically and corrected, if necessary, using these standards, prior to additional evaluation.

**A.19 DESCRIPTIVE INFORMATION**

Unless otherwise specifically provided in the specifications, all equipment, materials and articles incorporated in the work covered by this contract shall be new and of the most suitable grade for the purpose intended. Unless otherwise specifically provided in the specifications, reference to any equipment, material, article or patented process, by trade name, brand name, make or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition.

**A.20 UNBALANCED BIDDING PROHIBITED**

Manatee County recognizes that large and/or complex projects will often result in a variety of methods, sources and prices; however, where in the opinion of the County such variation does not appear to be justified, given bid specifications and industry and market conditions, the bid will be presumed to be unbalanced. Examples of unbalanced bids will include:

- a. Bids showing omissions, alterations of form, additions not specified or required, conditional or unauthorized alternate bids.
- b. Bids quoting prices that substantially deviate, either higher or lower, from those included in the bids of competitive bidders for the same line item unit costs.
- c. Bids where the unit costs offered are in excess of or below reasonable cost analysis values.

In the event the County determines that a bid is presumed unbalanced, it will request the opportunity to, and reserves the right to, review all sources quotes, bids, price lists, letters of intent, etc., which the bidder obtained and upon which the bidder relied upon to develop the bid. The County reserves the right to reject as non-responsive any presumptive unbalanced bids where the bidder is unable to demonstrate the validity and/or necessity of the unbalanced unit costs.

**A.21 FRONT END LOADING OF BID PRICING PROHIBITED**

Prices offered for performance and/or acquisition activities to occur early in the project schedule, such as: mobilization, clearing and grubbing; or maintenance of traffic, that are substantially higher than pricing of competitive bidders within the same portion of the project schedule, will be presumed to be front end loaded. Front end loaded bids could reasonably appear to be an attempt to obtain unjustified early payments creating a risk of insufficient incentive for the Contractor to complete the work or otherwise creating an appearance of an under-capitalized bidder.

In the event the County determines that a bid is presumed to be front end loaded, it will request the opportunity to, and reserves the right to, review all source quotes, bids, price lists, letters of intent, etc., which the bidder obtained and upon which the bidder relied upon to develop the pricing or acquisition timing for these bid items. The County reserves the right to reject as non-responsive any presumptive front end loaded bids where the bidder is unable to demonstrate the validity and/or necessity of the front end loaded costs.

#### A.22 WITHDRAWAL OF OFFERS

Vendors may withdraw offers as follows: a) Mistakes discovered before the opening of a solicitation may be withdrawn by written notice from the bidder submitting the offer. This request must be received in the office designated for receipt of offers in the solicitation document prior to the time set for delivery and opening of the offers. A copy of the request shall be retained and the unopened offer returned to that vendor. b) After the responses to a solicitation are opened or a selection has been determined, but before a contract is signed, a vendor alleging a material mistake of fact may be permitted to withdraw their offer if: (1) the mistake is clearly evident on the solicitation document; or (2) the bidder submits evidence which clearly and convincingly demonstrates that a mistake was made. Request to withdraw an offer must be in writing and approved by the Purchasing Official.

#### A.23 MODIFICATION OF BID SPECIFICATIONS

If a bidder wishes to recommend changes to the bid specifications, the bidder shall furnish in writing, data and information necessary to aid the County in evaluating the request to modify the specifications. The County is not obligated to make any changes to the bid specifications. Unless an addendum is issued, the bid specifications shall remain unaltered. **Bidders must fully comply with the bid specifications, terms, and conditions.**

#### A.24 AMERICAN DISABILITIES ACT

The Board of County Commissioners of Manatee County, Florida, does not discriminate upon the basis of any individual's disability status. This non-discrimination policy involves every aspect of the County's functions including one's access to, participation, employment, or treatment in its programs or activities. Anyone requiring reasonable accommodation for an **Information Conference** or **Bid Opening** should contact the person named on the first page of this bid document at least twenty-four (24) hours in advance of either activity.

#### A.25 LOBBYING

After the issuance of any Invitation For Bid, prospective bidders, or any agent, representative or person acting at the request of such bidder shall not contact, communicate with or discuss any matter relating in any way to the Invitation For Bid with any officer, agent or employee of Manatee County other than the Purchasing Official or as directed in the Invitation For Bid. This prohibition begins with the issuance of any Invitation For Bid, and ends upon execution of the final contract or when the invitation has been canceled. Violators of this prohibition shall be subject to sanctions as provided in the Manatee County Code of Laws.

The County reserves the right to amend or to add to the names listed as persons to contact. All amendments or additions to the names listed as persons to contact shall be issued by Purchasing, in writing.

#### A.26 DRUG FREE WORK PLACE

The Manatee County Board of County Commissioners adopted a policy regarding bidders maintaining a Drug Free Work Place, prohibiting the award of bids to any person or entity that has not submitted written certification to the County that it has complied with those requirements [Manatee County Code of Laws]. A Drug Free Work Place Certification Form is attached to this bid for this purpose.

A.27 PUBLIC CONTRACTING AND ENVIRONMENTAL CRIMES CERTIFICATION

A person or affiliate who has been placed on the State's convicted vendor list following a conviction for a public entity crime, as that term is defined in Florida Statute s. 287.133, may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; 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 Statute s. 287.017 for CATEGORY TWO for a period of 36 months following the date of being placed on the convicted vendor list. In addition, the Manatee County Code prohibits the award of any contract to any person or entity who/which has, within the past five years, been convicted of, or admitted to in court or sworn to under oath, a public entity crime or of an environmental law that, in the reasonable opinion of the Purchasing Official, establishes reasonable grounds to believe the person or business entity will not conduct business in a responsible manner. To ensure compliance with the foregoing, the Code requires all persons or entities desiring to contract with the County to execute and file with the Purchasing Official an affidavit, executed under the pain and penalties of perjury, confirming that person, entity, and any persons(s) affiliated with the entity, does not have such a record and is therefore eligible to seek and be awarded business with the County. In the case of a business entity other than a partnership or a corporation, such affidavit shall be executed by an authorized agent of the entity. In the case of a partnership, such affidavit shall be executed by the general partner(s). A Public Contracting and Environmental Crimes Certification Form is attached.

A.28 EQUAL EMPLOYMENT OPPORTUNITY CLAUSE

Manatee County, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 and the Regulations of the Department of Commerce (15 CFR, Part 8) issued pursuant to such Act, hereby notifies all vendors that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this advertisement and will not be discriminated against on the grounds of race, color or national origin in consideration for an award.

A.29 DISCLOSURE

Upon receipt, all inquires and responses to inquires related to this Invitation for Bid become "Public Records" and are subject to public disclosure consistent with Chapter 119, Florida Statutes. **Bids become "Public Records" ten (10) days after the bid opening or if an award decision is made earlier than this time as provided by Florida Statute 119.071.** No announcement or review of the bid documents shall be conducted at the public opening of the bids.

Based on the above, Manatee County will receive bids at the date and time stated, and will make public at the opening the names of the business entities of all that submitted an offer and any amount presented as a total offer without any verification of the mathematics or the completeness of the offer. Upon the expiration of the statutory term for exemption the actual documents may be inspected or copied. When County staff have completed a mathematic validation and inspected the completeness of the offers, a tabulation shall be posted on [www.mymanatee.org](http://www.mymanatee.org).

SECTION B  
**BASIS OF AWARD**

**B.01 BASIS OF AWARD**

This Project is funded by the Florida Department of Law Enforcement American Recovery Act - Edward Byrne Memorial Justice Assistance Grant (JAG). Award shall be to the most responsive, responsible bidder meeting specifications and having the lowest Total Bid Price for **Bid "A"** or the lowest Total Bid Price for **Bid "B"** for the requirements listed on the Bid Form for the Work as set forth in this Invitation For Bid. Bid Prices shall include costs for furnishing all labor, equipment and/or materials for the completion of the Work in accordance with and in the manner set forth and described in this Bid Document to the County's satisfaction within the prescribed time. **Inspection of the project site is a prerequisite for award.**

**Two schedules for Completion of the Work shall be considered. Each bid for completion by the specific stated time shall be offered as a separate Total Bid Price. The County has the sole authority to select the bid based on the Completion Time which is in the best interest of the County. Only one award shall be made.**

Whenever two or more bids are equal with respect to price, quality and service, the bid received from a local business shall be given preference in award. Whenever two or more bids which are equal with respect to price, quality and service are received, and both bids or neither of these bids are received from a local business, the award shall be determined by a chance drawing conducted by Manatee County Purchasing and open to the public.

Local business is defined as a business duly licensed and authorized to engage in the sale of goods and/or services to be procured, which has a place of business in Manatee County with full time employees at that location.

**B.02 QUALIFICATIONS OF BIDDERS**

Each bidder must secure all licenses required (in accordance with Chapter 489 Florida Statutes) for the Work which is the subject of this bid; and, upon request, shall submit a true copy of all applicable licenses. **The contractor shall be certified in Florida as a General Contractor with experience in this type (interior build-out) of construction to be considered for award of this project.**

To demonstrate qualifications to perform the Work, each bidder must be prepared to submit within five days of County's request; written evidence such as financial data, previous experience, present commitments and other such data as may be requested. Bidder must be able to provide evidence of Bidder's qualification to do business in the state of Florida. Each bidder shall submit as a portion of their bid a completed Contractor's Questionnaire included as Section 00430.

**B.03 SUBCONTRACTORS**

A complete list of all subcontractors proposed for any portion of the Work may be requested of any bidder deemed necessary by the County. Subcontracts shall be awarded only to those subcontractors considered satisfactory by the County.

Subcontractors shall be bound by the terms and conditions of this contract insofar as it applies to their Work, but this shall not relieve the prime contractor from the full responsibility to the County for the proper completion of all Work to be executed under this contract.

The employment of unauthorized aliens by any vendor is considered a violation of Section 274(e) of the Immigration and Employment Act. If the vendor knowingly employs unauthorized aliens, such violation shall be cause for unilateral cancellation of this agreement.

**B.04 PREPARING CONTRACT**

A written notice confirming award or recommendation thereof will be forwarded to the successful bidder accompanied by the required number of unsigned counterparts of the agreement. Within ten (10) days thereafter, successful bidder shall sign and deliver the required number of counterparts of the agreement with any other required documents to County. (Note: Contract must be approved by Manatee County to be valid.)

**B.05 BE GREEN**

All Vendors/Bidders/Quoters/Proposers (*as applicable*) are encouraged to use as many **environmentally preferable** "green" products, materials, supplies, etc. as possible in order to promote a safe and healthy environment. **Environmentally preferable are products or services that have a reduced adverse effect on the environment.** Provide detail of your organization's initiative and its ability to meet the goal of environmental sustainability as an attachment to your bid submittal.

SECTION C  
**GENERAL TERMS AND CONDITIONS OF THE CONTRACT**

**C.01 CONTRACT FORMS**

The agreement resulting from the acceptance of a bid shall be in the form of the agreement stated in this bid.

**C.02 ASSIGNMENT OF CONTRACT**

Contractor shall not assign, transfer, convey, sublet or otherwise dispose of this Contract or of his right, title, or interest therein, or his power to execute such Contract, or to assign any monies due or to become due thereunder to any other person, firm or corporation unless first obtaining the written consent of the County. The giving of such consent to a particular subcontractor assignment shall not dispense with the necessity of such consent to any further or other assignment.

**C.03 COMPLETION OF WORK**

The Work will be substantially complete and ready for occupancy within the specific calendar days from the date the Contract Time commences to run (upon issuance of Notice to Proceed). Two bids shall be considered based on **150 calendar days** and based on **100 calendar days**. The County has the sole authority to select the bid based on the Completion time which is in the best interest of the County. Only one award shall be made.

**C.04 LIQUIDATED DAMAGES**

If the Contractor refuses or fails to prosecute the Work, or any separable part thereof, with such diligence as will hinder its completion within the time specified, the County may seek damages. The actual damages for delay will be impossible to determine and in lieu thereof, the Contractor shall pay to the County the sum of **\$715** as fixed, agreed, and liquidated damages for each calendar day of the delay until the Work is finally accepted by the County and the Contractor and his Surety shall be liable for the amount thereof.

**C.05 PAYMENT**

Contractor shall submit an application, on a form provided or approved by the County, of an approximate estimate of the proportionate value of the Work done, items and locations of the Work performed up to and including the last day of the period then ending. The County will then review said estimate and make any necessary revisions so that the estimate can receive approval for payment. The amount of said estimate after deducting any required retainage and all previous payments shall be due and payable to the Contractor within 20 days after the pay estimate has been approved by the County.

It is the Contractor's responsibility for the care of any stored materials. Any damage to or loss of said materials is the responsibility of the Contractor. Any requests for payment of materials stored on site must be accompanied with a paid receipt. The 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 the County at the time of payment free and clear of all liens, claims, security interests and encumbrances (hereafter referred to as "Liens").

C.05 PAYMENT (cont'd)

The Contractor agrees to furnish an affidavit stating that all laborers, materialmen, and subcontractors have been paid on the project for Work covered by the application for payment and that a partial or complete release of lien, as may be necessary, be properly executed by the materialmen, laborers, subcontractors on the project for Work covered by the application for payment, sufficient to secure the County from any claim whatsoever arising out of the aforesaid Work.

When the Contractor has completed the Work in compliance with the terms of the Contract Documents, he shall notify the County in writing that the project is ready for final inspection. Upon completion of final inspection, the County will notify Contractor 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. When all such errors have been corrected, a final reinspection will be made. The process will be repeated until, in the opinion of the County, the project has been completed in compliance with the terms of the Contract Documents.

When final acceptance has been made by the County, the County will make final payment of the Contract amount, plus all approved additions, less approved deductions and previous payments made. The Contract will be considered complete when all work has been finished, the final inspection made, approved as-builts received, and the project finally accepted in writing by the County. The Contractor's responsibility shall then terminate except as otherwise stated.

C.06 RETAINAGE

A **retainage** of 2.5% of the total contract amount shall be withheld from payments after 75% completion of the Work. Upon substantial completion, this retainage shall be reduced to 1% of the total contract amount plus such amount as the County may reasonably deem necessary to repair, replace, complete or correct any damaged, defective, incorrect or incomplete work. Upon final acceptance, the remaining retainage shall be included in the final payment.

C.07 WARRANTY AND GUARANTEE PROVISIONS

All work, materials, and equipment furnished as defined herein shall be guaranteed and warranted by the contractor for a minimum period of one year, unless otherwise specified, from final acceptance by the County to be free from defects due either to faulty materials or equipment or faulty workmanship.

C.08 ROYALTIES AND PATENTS

The contractor shall pay all royalties and license fees for equipment or processes in conjunction with the equipment and/or services being furnished. Contractor shall defend all suits or claims for infringement of any patent, trademark or copyright, and shall save the County harmless from loss on account thereof, including costs and attorney's fees.

**C.09 AUTHORIZED PRODUCT REPRESENTATION**

The contractor, by virtue of submitting the name and specifications of a manufacturer's product, will be required to furnish the named manufacturer's product. Failure to perform accordingly may, in the County's sole discretion, be deemed a breach of contract, and shall constitute grounds for the County's immediate termination of the contract.

**C.10 REGULATIONS**

It shall be the responsibility of the bidder to assure compliance with any OSHA, EPA and/or other federal or state of Florida rules, regulations or other requirements, as each may apply.

**C.11 CANCELLATION**

Any failure of the contractor to furnish or perform the Work (including, but not limited to, commencement of the Work, failure to supply sufficient skilled workers or suitable materials or equipment) in accordance with the contract, the County may order the stop of the Work, or any portion thereof, until the cause for such order has been eliminated. If the contractor persistently fails to perform the Work in accordance with the contract, the County reserves the right to terminate the contract.

**C.12 INDEMNIFICATION**

The contractor covenants and agrees to indemnify and save harmless the County, its agents and employees, from and against all claims, suits, actions, damages, causes of action, or judgments arising out of the terms of the resulting agreement for any personal injury, loss of life, or damage to the property sustained as a result of the performance or non-performance of services or delivery of goods; from and against any orders, judgments, or decrees, which may be entered against the County, its agents or employees; and from and against all costs, attorney's fees, expenses and other liabilities incurred in the defense of any such claim, suit or action, and the investigation thereof. Nothing in the award, resulting agreement, contract or Purchase Order shall be deemed to affect the rights, privileges and immunities of the County as set forth in Florida Statute Section 768.28.

**C.13 MANUALS, SCHEMATICS, HANDBOOKS (IF APPLICABLE)**

All manuals, schematics and handbooks shall be provided which are applicable to the equipment delivered. An operators manual, parts manual and technician manual must also be provided. Parts lists (manuals) must include OEM part numbers for items not manufactured by the bidder. Vendor shall furnish two (2) copies of each.

**C.14 INSURANCE**

The contractor will not commence work under a contract until all insurance under this section and such insurance coverage as might be required by the County has been obtained. The contractor shall obtain, and submit to Purchasing within ten calendar days of request, at his expense, the following minimum amounts of insurance (inclusive of any amounts provided by an umbrella or excess policy):

C.14 INSURANCE (cont'd)

a. Workers' Compensation/Employers' Liability

Part One - There shall be no maximum limit (other than as limited by the applicable statute) for liability imposed by Florida Worker's Compensation Act or any other coverage required by the contract documents which are customarily insured under Part One of the standard Worker's Compensation Policy.

Part Two - The minimum amount of coverage required by the contract documents which are customarily insured under Part Two of the standard Workers' Compensation Policy shall be:

<u>\$100,000</u>	(Each Accident)
<u>\$500,000</u>	(Disease-Policy Limit)
<u>\$100,000</u>	(Disease-Each Employee)

b. Commercial General Liability

The limits are to be applicable only to work performed under this contract and shall be those that would be provided with the attachment of the Amendment of Limits of Insurance (Designated Project or Premises) endorsement (ISO Form CG 25 03) to a Commercial General Liability Policy with the following minimum limits.

General Aggregate:

Products/Completed Operations Aggregate	<u>\$1,000,000</u>
Personal and Advertising Injury	<u>\$300,000</u>
Each Occurrence	<u>\$300,000</u>
Fire Damage (Any One Fire)	\$ Nil
Medical Expense (Any One Person)	\$ Nil

c. Business Auto Policy

Each Occurrence Bodily Injury and Property Damage Liability Combined	<u>\$300,000</u>
Annual Aggregate (if applicable):	<u>\$1,000,000</u>

d. Owners Protective Liability Coverage

The minimum OPC Policy limits per occurrence and, if subject to an aggregate, annual aggregate to be provided by the contractor shall be the same as the amounts shown above as the minimum per occurrence and general policy aggregate limits respectively required for the Commercial General Liability coverage. The limits afforded by the OPC Policy and any excess policies shall apply only to the County and the County's officials, officers, agents and employees and only to claims arising out of or in connection with the work under this contract.

e. Property Insurance

**If this contract includes** construction of or additions to above ground buildings or structures, contractor shall provide "**Builder's Risk**" insurance with the minimum amount of insurance to be 100% of the value of such addition(s), building(s), or structure(s).

**C.14** INSURANCE (cont'd)

- f. Installation Floater  
**If this contract does not include** construction of or additions to above ground building or structures **but does involve** the installation of machinery or equipment, contractor shall provide an "**Installation Floater**" with the minimum amount of insurance to be 100% of the value of such addition(s), building(s), or structure(s).
- g. Certificates of Insurance and Copies of Policies  
 Certificates of Insurance in triplicate evidencing the insurance coverage specified in the six above paragraphs a., b., c., d., e. and f., shall be filed with the Purchasing Official before operations are begun. The required certificates of insurance shall name the types of policy, policy number, date of expiration, amount of coverage, companies affording coverage, and also shall refer specifically to the bid number, project title and location of project.

Insurance shall remain in force at least one year after completion and acceptance of the project by the County, in the amounts and types as stated herein, with coverage for all products and services completed under this contract.

**ADDITIONAL INSURED: - The contractor shall name Manatee County as additional insured in each of the applicable policies.**

If the initial insurance expires prior to the completion of operations and/or services by the contractor, renewal certificates of insurance and required copies of policies shall be furnished by the contractor and delivered to the Purchasing Official 30 days prior to the date of their expiration. Nothing herein shall in any manner create any liability of the County in connection with any claim against the contractor for labor, services, or materials, or of subcontractors; and nothing herein shall limit the liability of the contractor or contractor's sureties to the County or to any workers, suppliers, materialmen or employees in relation to this contract.

**C.15** BID BOND/CERTIFIED CHECK

By offering a submission to this Invitation For Bid the bidder agrees, should the bidder's bid be accepted, **to execute the form of contract and present the same to Manatee County for approval within ten days after being notified of the awarding of the contract.** The bidder further agrees that failure to execute and deliver said form of contract within ten days will result in damages to Manatee County and as guarantee of payment of same a bid bond/certified check shall be enclosed within the submitted sealed bid in the amount of five (5%) percent of the total amount of the bid. The bidder further agrees that in case the bidder fails to enter into a contract, as prescribed by Manatee County, the bid bond/certified check accompanying the bid shall be forfeited to Manatee County as agreed liquidated damages. If the County enters into a contract with a bidder, or if the County rejects any and/or all bids, accompanying bond will be promptly returned.

**C.16 PERFORMANCE AND PAYMENT BONDS**

The successful bidder shall furnish surety bonds as security for faithful performance of the contract awarded as a result of this bid, and for the payment of all persons performing labor and/or furnishing material in connection therewith. Surety of such bonds shall be in an amount equal to the bid award (100% each) and from a duly authorized and nationally recognized surety company, authorized to do business in Florida, satisfactory to this County. The attorney-in-fact who signs the bonds must file with the bonds a certificate and effective dated copy of power-of-attorney. (Reference Florida Statute 255.05)

Furnishing the performance and payment bonds shall be requisite to execution of a contract with the County. Said performance and payment bonds will remain in force for the duration of the contract with the premiums paid by the contractor. Failure of successful bidder to execute such contract and to supply the required bonds shall be just cause for annulment of the award. The County may then contract with another acceptable bidder or readvertise this Invitation For Bid. If another bidder is accepted, and notice given within 90 days after the opening of bids, this acceptance shall bind the bidder as though they were originally the successful bidder.

Failure of the County at any time, to require performance by the contractor of any provisions set out in the contract will in no way affect the right of the County, thereafter, to enforce the provisions. Bonds to remain in effect for one year after final payment becomes due.

**SECTION D**  
**INSTRUCTIONS TO BIDDERS**

**D.01 THE WORK**

The Work generally includes, but is not limited to, the renovation of an existing vacant building, located at 421 17<sup>th</sup> Street West, Bradenton, Florida (formerly the EMS facility), to house the Juvenile Booking and Processing functions of the Manatee County Sheriff Office.

Construction and record drawings are required of the successful bidder and shall fully meet the requirements of all current federal, state and county laws, rules, regulations and standards, with the most stringent applying.

**D.02 SUBCONTRACTORS, SUPPLIERS AND OTHERS**

The identity of subcontractors, suppliers, and other persons (including those who are to furnish the principal items of material and equipment) may be requested by the County for each bid item from any of the Bidders; and the Bidder shall respond within five days after the date of such request. 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, persons or organization if requested by County. If County, after due investigation has reasonable objection to any proposed subcontractor, supplier, other person or organization, County may request the apparent successful Bidder to submit an acceptable substitute without an increase in Contract Price or Contract Time.

**D.03 EXAMINATION OF CONTRACT DOCUMENTS AND SITE**

It is the responsibility of each Bidder before submitting a Bid, to (a) examine the Bid Documents thoroughly; (b) visit the site to become familiar with local conditions that may affect cost, progress, performance, or furnishing of the Work; (c) consider federal, state, and local codes, laws, and regulations that may affect costs, progress, performance, or furnishing of the Work; (d) study and carefully correlate Bidder's observations with the Bid Documents; and (e) notify County of all conflicts, errors, or discrepancies in the Bid Document. Each Bidder may, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests and studies, and obtain any additional information and data which pertain to the physical conditions at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work and which Bidder deems necessary to determine his Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions. County will provide each Bidder access to the site to conduct such explorations and tests. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations.

**D.04 PERMITS AND FEES**

Unless otherwise specified, the contractor is responsible for any required permits associated with this project.

D.05 MATERIALS AND WORKMANSHIP

All materials and apparatus required for the Work, except as specifically specified otherwise, shall be new, of first class quality, and shall be furnished, delivered, connected and finished in every detail.

Use skilled workman trained and experienced in the necessary trades and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this section.

Comply with the most current codes and regulations of all jurisdictional local, state and federal governmental agencies having jurisdiction.

D.06 REGULATIONS AND MATERIAL DISPOSAL

It shall be the responsibility of the contractor to assure compliance with any OSHA, EPA, federal, state, and/or local rules, regulations or other requirements as each may apply. The contractor shall apply for, acquire, post, and achieve inspections compliance for all applicable permits required by federal, state, or local rules, regulations or laws. Any conflict between the design criteria and codes shall be brought to the attention of the County and resolved before the work is continued.

D.07 PROJECT CLOSE-OUT

Clean installation site and remove any and all excess materials and debris. Correct any damages to property that may have occurred as a result of installation and/or delivery. Repair and patch all surfaces cut for installation.

Submit to the County a list of incomplete items. Within a reasonable period of time after receipt of the list, the County will inspect the Work to determine status of completion. The Contractor shall remedy any deficiencies promptly should the County determine any work is incomplete or defective.

When the County determines the Work is acceptable in accordance with this Invitation For Bid, the Contractor shall provide the close out submittals, including but not necessarily limited to the following:

- 1 set - Certificate of warranties
- 1 set - Manufacturer's product literature
- 1 set - As-Built Drawings

D.08 DISCRETIONARY WORK

This Bid Item entails minor increases (that may be directed in writing by staff) to existing bid item quantities or minor modification items not bid which were unforeseen and necessary during the construction to provide a safe, complete project in accordance with Bid Documents. (This will not affect the requirement for change orders involving major modifications to the project.) Payment for all Work under this item shall be made only at the County's discretion in order to satisfactorily complete the project. In general, this item is for unanticipated conflicts and/or design changes required during construction which are necessary to complete the project without changing the initial scope of the Work and without costly delays.

## SECTION E

**MANATEE COUNTY LOCAL PREFERENCE LAW AND VENDOR REGISTRATION****E.01 VENDOR REGISTRATION**

All vendors are encouraged to register with Manatee County using the on-line "Vendor Registration" web page on [www.mymanatee.org](http://www.mymanatee.org).

Enclosed is a copy of the current Manatee County law that details the County's Local Preference and definition of a Local Business.

If you assert that your firm meets the stated definition of a Local Business, we ask that in addition to registering on the County's Web page, you fill out the attached "**Affidavit As To Local Business Form**" that is included in this section of the bid, have the completed document notarized, and mail the original to the following address: Manatee County Administration Center, 1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205.

Your cooperation in registering your business with Manatee County will enhance our opportunities to identify sources for goods and services, plus identify Local Businesses. This information is used for soliciting quotations up to \$250,000.00 and for competitive solicitations of larger purchases.

You will note that Manatee County collaborates with the Manatee Chamber of Commerce, posting bids on [www.manateechamber.com](http://www.manateechamber.com) as well as using the same vendor categories for registration.

Our staff can assist you with your registration as needed. Our office hours are 8:00 A.M. to 5:00 P.M., Monday through Friday on regular business days. Please call (941)749-3014 if you wish to have a purchasing staff member assist you.

**Quick steps to on line registration:**                    [www.mymanatee.org](http://www.mymanatee.org)

A link to "Purchasing" is listed under the "Quick Links" on page one of this County Web Site.

On the left hand side of the Purchasing Web page, click on "Vendor Registration."

This will bring up the Vendor Registration form for on-line input. Please note that the definition of a "Local Business" changed on March 17, 2009. The Web page will be updated to include the current Law which has been provided in this section of the bid.

Thank you for reviewing this information and considering registering your business with Manatee County. Registration is not mandatory, however, by taking the time to register, you are helping the County to provide timely notifications of quotation, bid, and proposal opportunities to your business.

E.02 SECTION 2-26-6 LOCAL PREFERENCE, TIE BIDS, LOCAL BUSINESS DEFINED

1. Whenever a responsible local business bidder and a responsible non-local business bidder are found, upon the opening of bids, to have both submitted the lowest responsive bid, the bid of the local bidder shall be awarded the contract. Should more than one responsible local business bidder match the responsible non-local business bidder's lowest responsive bid, or should no responsible local business bidder match the lowest responsive bid but two or more responsible non-local business bidders submit lowest responsive bids for equal amounts, then the award of the contract shall be determined by a chance drawing, coin toss, or similar tie-breaking method conducted by the purchasing office and open to the public. Any bidders seeking to be recognized as local businesses for purposes of this local business preference provision may be required by the terms of the bid announcement to certify they meet the definition of local business set forth in this section, and to register as a local business with the county in the manner prescribed by the county to facilitate the county's ability to track the award of contracts to local businesses and to allow the county to provide future notifications to its local businesses concerning other bidding opportunities.
2. Nothing herein shall be deemed to prohibit the inclusion of requirements with respect to operating and maintaining a local place of business in any invitation for bids when the bidder's location materially affects the provisions of the services or supplies that are required by the invitation.
3. Local business is defined as a business legally authorized to engage in the sale of the goods and/or services to be procured, and which certifies within its bid that for at least six (6) months prior to the announcement of the solicitation of bids it has maintained a physical place of business in Manatee, Desoto, Hardee, Hillsborough, Pinellas or Sarasota County with at least one full-time employees at that location.
4. **Each solicitation for bids made by the county shall contain terms expressly describing the local business preference policies of the county, and shall provide that by electing to submit a bid pursuant to a request for bids, all bidders are deemed to understand and agree to those policies.**
5. For all contracts for architecture, professional engineering, or other professional services governed by Florida Statute § 287.055, the Consultants' Competitive Negotiation Act, the county shall include the local business status of a firm among the factors considered when selecting which firms are "most highly qualified." In determining which firm is the "most qualified" for purposes of negotiating a satisfactory contract, preference shall be given to a local business where all other relevant factors are equal.
6. Local preference shall not apply to the following categories of contracts:
  - a. Goods or services provided under a cooperative purchasing agreement or similar "piggyback" contract;

- b. Contracts for professional services subject to Florida Statute § 287.055, the Consultants' Competitive Negotiation Act, except as provided for in subsection (e) above;
  - c. Purchases or contracts which are funded, in whole or in part, by a governmental or other funding entity, where the terms and conditions of receipt of the funds prohibit the preference;
  - d. Purchases or contracts made pursuant to a non-competitive award process, unless otherwise provided by this section;
  - e. Any bid announcement which specifically provides that the general local preference policies set forth in this section are suspended due to the unique nature of the goods or services sought, the existence of an emergency as found by either the county commission or county administrator, or where such suspension is, in the opinion of the county attorney, required by law.
7. To qualify for local preference under this section, a local business must certify to the County that it:
- a. Has not within the five years prior to the bid announcement admitted guilt or been found guilty by any court or state or federal regulatory enforcement agency of violation of any criminal law, or a law or administrative regulation regarding fraud;
  - b. Is not currently subject to an unresolved citation or notice of violation of any Manatee County Code provision, except citations or notices which are the subject of a current legal appeal, as of the date of the bid announcement;
  - c. Is not delinquent in the payment of any fines, liens, assessments, fees or taxes to any governmental unit or taxing authority within Manatee County, except any such sums which are the subject of a current legal appeal.

Ref: Ordinance 09-21 and 09-23 **PASSED AND DULY ADOPTED** in open session, with a quorum present and voting, on the 17<sup>th</sup> day of March, 2009.

**MANATEE COUNTY GOVERNMENT  
AFFIDAVIT AS TO LOCAL BUSINESS  
(Complete and Initial Items B-F)**

**A. AUTHORIZED REPRESENTATIVE**

I, [name] \_\_\_\_\_, am the [title] \_\_\_\_\_

and the duly authorized representative of: [name of business] \_\_\_\_\_,  
and that I possess direct personal knowledge to make informed responses to these certifications and the legal authority to make this Affidavit on behalf of myself and the business for which I am acting; and by electing to submit a bid pursuant to this Invitation for Bids, shall be deemed to understand and agree to the local business preference policies of Manatee County; and that I have the direct knowledge to state that this firm complies with all of the following conditions to be considered to be a Local Business as required by the Manatee County Code of Law, Section 2-26-6.

**B. PLACE OF BUSINESS:** I certify that the above business is legally authorized to engage in the sale of goods and/or services and has a physical place of business in Manatee, DeSoto, Hardee, Hillsborough, Pinellas or Sarasota County with at least one (1) fulltime employee at that location. The physical address of the location which meets the above criteria is: \_\_\_\_\_ [Initial] \_\_\_\_\_

**C. BUSINESS HISTORY:** I certify that business operations began at the above physical address with at least one fulltime employee on [date] \_\_\_\_\_ [Initial] \_\_\_\_\_

**D. CRIMINAL VIOLATIONS:** I certify that within the past five years of the date of this Bid announcement, this business has not admitted guilt nor been found guilty by any court or local, state or federal regulatory enforcement agency of violation of any criminal law or administrative regulation regarding fraud.[Initial] \_\_\_\_\_

**E. CITATIONS OR CODE VIOLATIONS:** I certify that this business is not currently subject to any unresolved citation or notice of violation of any Manatee County Code provision, with the exception of citations or notices which are the subject of a legal current appeal within the date of this bid announcement.[Initial] \_\_\_\_\_

**F. FEES AND TAXES:** I certify that within this business is not delinquent in the payment of fines, liens, assessments, fees or taxes to any governmental unit or taxing authority within Manatee County, with the exception of those which are the subject of a legal current appeal. [Initial] \_\_\_\_\_

*Each of the above certifications is required to meet the qualification of "Local Business" under Manatee County Code of Law, 2-26-6.*

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

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

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

(Notary Seal) Signature of Notary: \_\_\_\_\_

Name of Notary (Typed or Printed): \_\_\_\_\_

Personally Known \_\_\_\_\_ OR Produced Identification \_\_\_\_\_ Type of Identification Produced \_\_\_\_\_

**Submit executed copy to Manatee County Purchasing, Suite 803, 1112 Manatee Avenue W., Bradenton, FL 34205**

SECTION F  
(Submit in Triplicate)  
**BID FORM**

For: Juvenile Process Center Building Modifications

**BID "A" TOTAL BID PRICE: \$\_\_\_\_\_ (150 calendar day completion)**

**BID "B" TOTAL BID PRICE: \$\_\_\_\_\_ (100 calendar day completion)**

**Two schedules for Completion of the Work shall be considered. Each bid for completion by the specified stated time shall be offered as a separate "Total Bid Price." The County has the sole authority to select the bid based on the Completion Time which is in the best interest of the County.**

We, the undersigned, hereby declare that we have carefully reviewed the bid documents, and with full knowledge and understanding of the aforementioned herewith submit this bid, meeting each and every specification, term, and condition contained in the Invitation For Bids.

We understand that the bid specifications, terms, and conditions in their entirety shall be made a part of any agreement or contract between Manatee County and the successful bidder. Failure to comply shall result in contract default, whereupon, the defaulting contractor shall be required to pay for any and all reprourement costs, damages, and attorney fees as incurred by the County.

Communications concerning this Bid shall be addressed as follows:

Person's Name: \_\_\_\_\_

Address: \_\_\_\_\_ Phone: \_\_\_\_\_

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

Dun and Bradstreet "Data Universal Numbering System" (DUNS) number : \_\_\_\_\_

MBE/WBE CERTIFICATION? \_\_\_\_\_

COMPANY'S NAME: \_\_\_\_\_

AUTHORIZED SIGNATURE(S): \_\_\_\_\_

\_\_\_\_\_  
Name and Title of Above Signer(s)

CO. MAILING ADDRESS: \_\_\_\_\_

TELEPHONE: (\_\_\_\_) \_\_\_\_\_ FAX: (\_\_\_\_) \_\_\_\_\_

Acknowledge Addendum Nos. \_\_\_\_\_ Dated: \_\_\_\_\_

**SECTION F**  
**BID FORM**

For: Juvenile Process Center Building Modifications

ITEM	BID "A" - 150 CALENDAR DAY COMPLETION	LUMP SUM
1.	Modifications – Complete Project	\$
2.	Discretionary Work	\$ 25,000.00
	<b>TOTAL BID PRICE – BID "A"</b>	<b>\$</b>

ITEM	BID "B" – 100 CALENDAR DAY COMPLETION	LUMP SUM
1.	Modifications – Complete Project	\$
2.	Discretionary Work	\$ 25,000.00
	<b>TOTAL BID PRICE – BID "B"</b>	<b>\$</b>

Two schedules for Completion of the Work shall be considered. Each bid for completion by the specified stated time shall be offered as a separate "Total Bid Price." The County has the sole authority to select the bid based on the Completion Time which is in the best interest of the County.

BIDDER: \_\_\_\_\_

SECTION G  
**CONTRACTOR'S QUESTIONNAIRE**  
 (Submit in Triplicate)

The Bidder warrants the truth and accuracy of all statements and answers herein contained. (Include additional sheets if necessary.)

**THIS QUESTIONNAIRE MUST BE COMPLETED AND SUBMITTED WITH YOUR BID.**

1. LICENSE # and COMPANY'S NAME: \_\_\_\_\_  
 CO. PHYSICAL ADDRESS: \_\_\_\_\_  
 STATE OF INCORPORATION, IF APPLICABLE: \_\_\_\_\_  
 TELEPHONE NUMBER: (\_\_\_\_) \_\_\_\_\_ FAX: (\_\_\_\_) \_\_\_\_\_
2. Bidding as an individual: \_\_\_\_; a partnership: \_\_\_\_; a corporation: \_\_\_\_; a joint venture: \_\_\_\_
3. If a partnership: list names and addresses of partners; if a corporation: list names of officers, directors, shareholders, and state of incorporation; if joint venture: list names and address of venturers and the same if any venturer is a corporation for each such corporation, partnership, or joint venture:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
4. Your organization has been in business (under this firm's name) as a \_\_\_\_\_  
 for how many years? \_\_\_\_\_ Years experience as a mechanical contractor? \_\_\_\_\_
5. Describe and give the date and owner of the last three projects you've completed which are similar in cost, type, size, and nature as the one proposed. Include contact name and phone number:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
6. Have you ever been assessed liquidated damages under a contract during the past five (5) years? If so, state when, where (contact name, address, and phone number) and why.  
 \_\_\_\_\_  
 \_\_\_\_\_
7. Have you ever failed to complete work awarded to you? Or provide projects not completed within contract time. If so, state when, where (contact name, address, phone number) and why?  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

8. Have you ever been debarred or prohibited from bidding on a governmental entity's project? If yes, name the entity and describe the circumstances:

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9. Name three individuals, governmental entities, or corporations for which you have performed similar work and to which you refer. Include contact name and phone number:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

10. What specific steps have you taken to examine the physical conditions at or contiguous to the site, including but not limited to, the location of existing underground facilities?  
Have you visited the site? \_\_\_\_\_ Date of inspection: \_\_\_\_\_

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11. What specific physical conditions, including, but not limited to, the location of existing underground facilities have you found which will, in any manner, affect cost, progress, performance, or finishing of the work?

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12. Will you subcontract any part of this Work? If so, describe which major portion(s):

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13. If any, list (with contract amount) WBE/MBEs to be utilized:

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14. What equipment do you own to accomplish this Work?

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15. What equipment will you purchase/rent for the Work? (specify which)

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16. List the following in connection with the Surety which is providing the Bond(s):

Surety's Name: \_\_\_\_\_

Surety's Address: \_\_\_\_\_

Name, address and phone number of Surety's resident agent for service of process in Florida:

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Phone: (\_\_\_\_\_) \_\_\_\_\_

**SECTION H**

**Drug Free Work Place Certification**

SWORN STATEMENT PURSUANT TO RESOLUTION R-01-36 SECTION 4, E (1) (a)  
MANATEE COUNTY PURCHASING CODE OF LAWS, ON DRUG FREE WORK PLACES

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

This sworn statement is submitted to the Manatee County Board of County Commissioners by \_\_\_\_\_

[print individual's name and title]

\_\_\_\_\_ for \_\_\_\_\_  
 [print name of entity submitting sworn statement]

whose business address is: \_\_\_\_\_

and (if applicable) its Federal Employer Identification Number (FEIN) is \_\_\_\_\_ (If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement: \_\_\_\_\_.)

I understand that no person or entity shall be awarded or receive a county contract for public improvements, procurement of goods or services (including professional services) or a county lease, franchise, concession or management agreement, or shall receive a grant of county monies unless such person or entity has submitted a written certification to the County that it will provide a drug free work place by:

(1) providing a written statement to each employee notifying such employee that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance as defined by §893.02(4), Florida Statutes, as the same may be amended from time to time, in the person's or entity's work place is prohibited specifying the actions that will be taken against employees for violation of such prohibition. Such written statement shall inform employees about:

- (i) the dangers of drug abuse in the work place;
- (ii) the person's or entity's policy of maintaining a drug free environment at all its work places, including but not limited to all locations where employees perform any task relating to any portion of such contract, business transaction or grant;
- (iii) any available drug counseling, rehabilitation, and employee assistance programs; and
- (iv) the penalties that may be imposed upon employees for drug abuse violations.

(2) Requiring the employee to sign a copy of such written statement to acknowledge his or her receipt of same and advice as to the specifics of such policy. Such person or entity shall retain the statements signed by its employees. Such person or entity shall also post in a prominent place at all of its work places a written statement of its policy containing the foregoing elements (i) through (iv).

(3) Notifying the employee in the statement required by subsection (1) that as a condition of employment the employee will:

- (i) abide by the terms of the statement; and
- (ii) notify the employer of any criminal drug statute conviction for a violation occurring in the work place no later than five (5) days after such a conviction.

- (4) Notifying the County within ten (10) days after receiving notice under subsection (3) from an employee or otherwise receiving actual notice of such conviction.
- (5) Imposing appropriate personnel action against such employee up to and including termination; or requiring such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a federal, state, or local health, law enforcement, or other appropriate agency.
- (6) Making a good faith effort to continue to maintain a drug free work place through implementation of sections (1) through (5) stated above.

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR MANATEE COUNTY IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT ANY CONTRACT OR BUSINESS TRANSACTION SHALL PROVIDE FOR SUSPENSION OF PAYMENTS, OR TERMINATION, OR BOTH, IF THE CONTRACTING OFFICER OR THE COUNTY ADMINISTRATOR DETERMINES THAT:

- (1) Such person or entity has made false certification.
- (2) Such person or entity violates such certification by failing to carry out the requirements of sections (1), (2), (3), (4), (5), or (6) or Resolution R-01-36 Section 4, E (1) (a) or
- (3) Such a number of employees of such person or entity have been convicted of violations occurring in the work place as to indicate that such person or entity has failed to make a good faith effort to provide a drug free work place as required by Resolution R-01-36 Section 4, E (1) (a).

\_\_\_\_\_  
[Signature]

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

Sworn to and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, 200\_\_\_\_\_ by \_\_\_\_\_.

Personally known \_\_\_\_\_ OR Produced identification \_\_\_\_\_  
[Type of identification]

\_\_\_\_\_  
Notary Public Signature My commission expires \_\_\_\_\_

\_\_\_\_\_  
[Print, type or stamp Commissioned name of Notary Public]

**SECTION H**

**PUBLIC CONTRACTING AND ENVIRONMENTAL CRIMES CERTIFICATION**

**SWORN STATEMENT PURSUANT TO ARTICLE 6,  
MANATEE COUNTY PURCHASING CODE**

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

This sworn statement is submitted to the Manatee County Board of County Commissioners by \_\_\_\_\_  
[print individual's name and title]

\_\_\_\_\_ for \_\_\_\_\_  
[print name of entity submitting sworn statement]

whose business address is: \_\_\_\_\_

and (if applicable) its Federal Employer Identification Number (FEIN) is \_\_\_\_\_. If the entity has no

FEIN, include the Social Security Number of the individual signing this sworn statement: \_\_\_\_\_

I understand that no person or entity shall be awarded or receive a county contract for public improvements, procurement of goods or services (including professional services) or a county lease, franchise, concession or management agreement, or shall receive a grant of county monies unless such person or entity has submitted a written certification to the County that it has not:

- (1) been convicted of bribery or attempting to bribe a public officer or employee of Manatee County, the State of Florida, or any other public entity, including, but not limited to the Government of the United States, any state, or any local government authority in the United States, in that officer's or employee's official capacity; or
- (2) been convicted of an agreement or collusion among bidders or prospective bidders in restraint of freedom of competition, by agreement to bid a fixed price, or otherwise; or
- (3) been convicted of a violation of an environmental law that, in the sole opinion of the County's Purchasing Official, reflects negatively upon the ability of the person or entity to conduct business in a responsible manner; or
- (4) made an admission of guilt of such conduct described in items (1), (2) or (3) above, which is a matter of record, but has not been prosecuted for such conduct, or has made an admission of guilt of such conduct, which is a matter of record, pursuant to formal prosecution. An admission of guilt shall be construed to include a plea of nolo contendere; or
- (5) where an officer, official, agent or employee of a business entity has been convicted of or has admitted guilt to any of the crimes set forth above on behalf of such and entity and pursuant to the direction or authorization of an official thereof (including the person committing the offense, if he is an official of the business entity), the business shall be chargeable with the conduct herein above set forth. A business entity shall be chargeable with the conduct of an affiliated entity, whether wholly owned, partially owned, or one which has common ownership or a common Board of Directors. For purposes of this Form, business entities are affiliated if, directly or indirectly, one business entity controls or has the power to control another business entity, or if an individual or group of individuals controls or has the power to control both entities. Indicia of control shall include, without limitation, interlocking management or ownership, identity of interests among family members, shared organization of a business entity following the ineligibility of a business entity under this Article, or using substantially the same management, ownership or principles as the ineligible entity.

Any person or entity who claims that this Article is inapplicable to him/her/it because a conviction or judgment has been reversed by a court of competent jurisdiction, shall prove the same with documentation satisfactory to the County's Purchasing Official. Upon presentation of such satisfactory proof, the person or entity shall be allowed to contract with the County.

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR MANATEE COUNTY IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT ANY CONTRACT OR BUSINESS TRANSACTION SHALL PROVIDE FOR SUSPENSION OF PAYMENTS, OR TERMINATION, OR BOTH, IF THE CONTRACTING OFFICER OR THE COUNTY ADMINISTRATOR DETERMINES THAT **SUCH PERSON OR ENTITY HAS MADE FALSE CERTIFICATION.**

\_\_\_\_\_  
[Signature]

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

Sworn to and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ by \_\_\_\_\_.  
Personally known \_\_\_\_\_ OR Produced identification \_\_\_\_\_  
[Type of identification]

\_\_\_\_\_  
Notary Public Signature My commission expires \_\_\_\_\_

\_\_\_\_\_  
[Print, type or stamp Commissioned name of Notary Public]

**Signatory Requirement** - In the case of a business entity other than a partnership or a corporation, this affidavit shall be executed by an authorized agent of the entity. In the case of a partnership, this affidavit shall be executed by the general partner(s). In the case of a corporation, this affidavit shall be executed by the corporate president.

**FORM OF AGREEMENT  
BETWEEN THE  
COUNTY OF MANATEE, FLORIDA  
AND THE CONTRACTOR AS IDENTIFIED BELOW  
ON THE BASIS OF A STIPULATED UNIT COST CONTRACT PRICE**

THIS AGREEMENT is made and entered into by and between the COUNTY OF MANATEE, a political subdivision of the state of Florida, hereinafter referred to as the "OWNER" and XXXXXXXXXX hereinafter referred to as the "CONTRACTOR," duly authorized to transact business in the state of Florida, with offices located at XXXXXXXXXX (Phone: XXXXXXXX).

**Article 1. WORK**

CONTRACTOR shall furnish all labor, materials, supplies, and other items required to complete the Work for IFB No. 10-1766DC Juvenile Process Center Building Modification in strict accordance with specifications and any duly authorized subsequent addenda thereto, all of which are made a part hereof.

**Article 2. ENGINEER**

The County of Manatee, Property Management Department, is responsible as the OWNER and BMK Architects, Inc., hereinafter referred to as "ENGINEER," designed this project and is responsible for technical/engineering reviews and decisions. The ENGINEER is a member of the OWNER'S project management team which is collectively responsible in ensuring the Work is completed in accordance with the Contract Documents. All communications involving this project will be addressed to:

County of Manatee  
Property Management Division  
Attn: Howard Leyo, Project Manager  
IFB #10-1766DC  
1112 Manatee Avenue West  
Bradenton, Florida, 34205  
Phone: 941/748-4501 x3052

BMK Architects, Inc.  
323 Central Avenue  
Sarasota, Florida 34236  
Phone: 941/365-6056  
Fax: 941/955-2592

Where the terms ENGINEER and/or OWNER are used in the Contract Documents, it shall mean the OWNER'S project management team.

**Article 3. CONTRACTOR'S REPRESENTATIONS**

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

- 3.1 CONTRACTOR has familiarized itself with the nature and extent of the Bid Documents, Work, site, locality and all local conditions and laws and regulations that in any manner may affect cost, progress, performance or furnishing of the Work.
- 3.2 CONTRACTOR has studied carefully all drawings of the physical conditions upon which CONTRACTOR is entitled to rely.
- 3.3 CONTRACTOR has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests, reports and studies which pertain to the physical conditions at or contiguous to the site or which otherwise may affect the cost, progress, performance or furnishing of the Work as CONTRACTOR considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Bid Documents; and no additional examinations, investigations, explorations, tests, reports, studies or similar information or data are or will be required by CONTRACTOR for such purposes.
- 3.4 CONTRACTOR has reviewed and checked all information and data shown or indicated on the Bid Documents with respect to existing underground facilities at or contiguous to the site and assumes responsibility for the accurate location of said underground facilities. Any additional examinations, investigations, explorations, tests, reports, studies or similar information or data in respect of said underground facilities conducted by the CONTRACTOR will be done at the CONTRACTOR's expense.
- 3.5 CONTRACTOR has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Bid.
- 3.6 CONTRACTOR has given OWNER written notice of all conflicts, errors or discrepancies that have been discovered in the Bid Documents and the written resolution thereof by OWNER is acceptable to CONTRACTOR.

- 3.7 CONTRACTOR shall schedule and perform the Work subject to OWNER's approval and shall hold OWNER harmless from all liabilities incurred due to CONTRACTOR's failure to coordinate with the OWNER.

#### **Article 4. CONTRACT DOCUMENTS**

The Contract Documents which comprise the entire Agreement between OWNER and CONTRACTOR concerning the Work consist of the following:

- 4.1 This Agreement and Bid Document IFB #10-1238DC
- 4.2 Performance and/or other Bonds and Insurance Certificate(s)
- 4.3 Drawings (attached by reference)
- 4.4 Addenda numbers \_\_ to \_\_, inclusive.
- 4.5 CONTRACTOR's Bid Form and any other information submitted by Contractor prior to Notice of Award.
- 4.6 The following which may be delivered or issued after the effective date of the Agreement and are not attached hereto: all written Change Orders and other documents amending, modifying, or supplementing the Contract Documents.
- 4.7 The documents listed in paragraphs above are attached to this Agreement (except as noted otherwise above). There are no Contract Documents other than those listed above in this Article 4.

#### **Article 5. MISCELLANEOUS**

- 5.1 Terms used in this Agreement are defined in Article 1 of the General Conditions.
- 5.2 No assignment by a party hereto of any rights under or interest in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, monies that may become due and monies 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 assignee from any duty or responsibility under the Contract Documents.

5.3 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 of all covenants, agreements and obligations contained in the Contract Documents.

The OWNER will pay, and the CONTRACTOR will accept in full consideration for the performance of the Work (**IFB No. 10-1766DC Juvenile Process Center Building Modification**), subject to additions and deductions as provided therein, the sum of XXXXXXXXXX Dollars and XXXX Cents (\$XXXXXX) for Bid "X" based on Completion Time of XXX calendar days and the sum of \$715 as liquidated damages for each calendar day of delay.

\_\_\_\_\_  
CONTRACTOR

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

\_\_\_\_\_  
Type Name and Title of Signer

The foregoing instrument was acknowledged before me this \_\_\_ day of \_\_\_\_\_, 20\_\_\_, by \_\_\_\_\_, who is personally known to me or who has produced \_\_\_\_\_ as identification.

(impress official seal)

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

My commission expires: \_\_\_\_\_

**COUNTY OF MANATEE, FLORIDA**

Authority to execute this contract per Manatee County Code, Chapter 2-26, and per the delegation by the County Administrator effective 1/26/2009

BY: \_\_\_\_\_  
R.C. "Rob" Cuthbert, CPM, Purchasing Manager

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

SECTION J  
GENERAL CONDITIONS

## ARTICLE I - DEFINITIONS

Whenever used in the Bid Documents, the following terms have the meaning indicated which are applicable to both the singular and plural thereof:

Addendum - Written or graphic instruments issued prior to the opening of bids which clarify or change the bidding documents or the contract documents.

Agreement - The written Agreement between Owner and Contractor covering the Work to be performed; other contract documents are attached to the Agreement and made a part thereof as provided therein.

Written Amendment - A written amendment of the contract documents, signed by Owner and Contractor on or after the effective date of the Agreement and normally dealing with the non-engineering or non-technical rather than strictly work related aspects of the contract documents.

Application for Payment - The form accepted by Project Representative which is to be used by Contractor in requesting progress or final payments and which is to include such supporting documentation as is required by the contract documents.

Award - Acceptance of the bid from the person, firm, or corporation which in the Owner's sole and absolute judgment will under all circumstances best serve the public interest. Award shall be made in accordance with Manatee County Code of Laws.

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

Bidder - One who submits a bid directly to the Owner, as distinct from a sub-bidder, who submits a bid to a Bidder.

Bidding Documents - Consists of the Invitation For Bid, which includes but is not limited to: the bid form, drawings, technical specifications, terms and conditions, and the proposed contract documents (including all Addenda issued prior to receipt of bids); and becomes a part of the Agreement.

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

Change Order - A document recommended by Project Representative 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 time, issued on or after the effective date of the Agreement.

Compensable Delay - Any delay beyond the control and without the fault or negligence of the Contractor resulting from Owner-caused changes in the Work, differing site conditions, suspensions of the Work, or termination for convenience by Owner.

Contract Documents - 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), the bonds, the specifications and the drawings, together with all amendments, modifications and supplements issued on or after the effective date of the Agreement.

Contract Price - The monies payable by Owner to Contractor under the contract documents as stated in the Agreement.

Contract Time - The number of days or the date stated in the Notice to Proceed for the completion of the Work.

Contractor - The person, firm or corporation with whom Owner has entered into an Agreement.

Days - All references to days are to be considered calendar days except as specified differently.

Defective - An adjective which when modifying the work refers to work that is unsatisfactory, faulty or deficient, or 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 Project Representative's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner).

Drawings - The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by Engineer and are referred to in the bidding and contract documents.

Effective Date of the Agreement - The date indicated in the Agreement on which it becomes effective (date of execution).

Excusable Delay - Any delay beyond the control and without the negligence of the Contractor, the Owner, or any other contractor caused by events or circumstances such as, but not limited to, acts of God or of the public enemy, fires, floods, freight embargoes, acts of government other than Owner, or epidemics. Labor disputes and above average rainfall shall give rise only to excusable delays.

Float or Slack Time - The time available in the progress schedule during which an unexpected activity can be completed without delaying substantial completion of the Work.

Field Order - A written order issued by Project Representative which orders minor changes in the Work, but which does not involve a change in the contract price or the contract time.

Inexcusable Delay - Any delay caused by events or circumstances within the control of the Contractor, such as inadequate crewing, slow submittals, etc., which might have been avoided by the exercise of care, prudence, foresight, or diligence on the part of the Contractor.

Non-prejudicial Delay - Any delay impacting a portion of the Work within the available total float or slack time and not necessarily preventing completion of the Work within the contract time.

Notice of Award - The written notice to the successful contractor stating Award has been approved by the Purchasing Official in accordance with Manatee Code of Law, Chapter 2-26, Manatee County Purchasing Ordinance.

Notice of Intent to Award - The written notice to the apparent low bidder stating Award has been recommended with final Award to be authorized by Ordinance 08-43, Manatee County Purchasing Code.

Notice to Proceed - Written notice by Owner (after execution of contract) to Contractor fixing the date on which the contract time will commence to run and on which Contractor shall start to perform (ten days from date of such notice) Contractor's obligations under the contract documents.

Owner - Manatee County, Florida, Board of County Commissioners.

Preconstruction Conference - Prior to starting the Work, a meeting scheduled by Owner with Contractor to review the Work schedules, to establish procedures for handling shop drawings and other submissions, for processing periodical pay estimates, and such other matters as may be pertinent to the project.

Prejudicial Delay - Any excusable or compensable delay impacting the Work and exceeding the total float available in the progress schedule, thus preventing completion of the Work within the contract time unless the Work is accelerated.

Pre-operation Testing - All field inspections, installation checks, water tests, performance tests and necessary corrections required of Contractor to demonstrate that individual components of the work have been properly constructed and do operate in accordance with the contract documents for their intended purposes.

Project - The total construction of which the Work to be provided under the contract documents may be the whole or a part as indicated elsewhere in the contract documents.

Project Representative - The authorized representative of Owner who is assigned to the project or any part thereof.

Schedule of Values - Unit Prices shall be established for this contract by the submission of a schedule of values. The Contractor shall submit a Schedule of Values within ten days of Notice to Proceed date. The Schedule shall include quantities and prices of items equaling the Total Bid Price and will subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work. Upon request of the County, the Contractor shall support the values with data which will substantiate their correctness.

Shop Drawings - All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for Contractor to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a supplier and submitted by Contractor to illustrate material or equipment for some portion of the Work.

Specifications - Those portions of the contract documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

Subcontractor - An individual or corporation having a direct contact with Contractor or with any other subcontractor for the performance of a part of the Work at the site. Such person or firm has contractual relations with the Contractor, not with the Owner.

Substantial Completion - The Work (or a specified part thereof) has progressed to the point when, in the opinion of the Engineer as evidenced by Engineer's definitive certificate of Substantial Completion, it is sufficiently complete in accordance with contract documents so that the work can be utilized for the purposes for which it is intended; or if there be no such certificate issued, when final payment is due.

Successful Bidder - The lowest qualified, responsible and responsive bidder to whom an award is made.

Supplier - A manufacturer, fabricator, supplier, distributor, materialman or vendor.

Underground Facilities - All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments and any encasement containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

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

Work - The entire completed construction or the various separately identifiable parts thereof required to be furnished under the contract documents. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the contract documents.

Work Directive Change - A written directive to contractor, issued on or after the effective date of the Agreement and signed by Owner and recommended by Project Representative ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed or to emergencies. A work directive change may not change the contract price or the contract time; but is evidence that the parties expect that the change directed or documented by a work directive change 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 time.

## ARTICLE 2 - PRELIMINARY MATTERS

Computation of Time: When 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 legal holiday, such day will be omitted from the computation.

- 2.1 The Contractor must submit a proposed schedule of the Work at the preconstruction conference. The purpose of this schedule is to enable the Owner to govern the Work, to protect the functions of the local government and its citizens and to aid in providing appropriate surveillance. The Owner shall have the right to reschedule work provided such rescheduling is in accord with the remainder of terms of the contract. The schedule shall show, as a minimum, the approximate dates on which each segment of the work is expected to be started and finished, the proposed traffic flows during each month, the anticipated earnings by the Contractor for each month and the approximate number of crews and equipment to be used. The Owner, after necessary rescheduling and obtaining additional information for specific purposes, shall review and approve the schedule. The Contractor shall also forward to the Owner, as soon as practicable after the first day of each month, a summary report of the progress of the various parts of the work under the contract, in fabrication and in the field, stating the existing status, estimated time of completion and cause of delay, if any. Together with the summary report, the Contractor shall submit any necessary revisions to the original schedule for the Owner's review and approval. In addition, more detailed schedules may be required by the Owner for daily traffic control.
- 2.2 A Notice to Proceed may be given at any time within thirty (30) days after the effective date of the Agreement. The contract time will commence at the time specified in such notice. Contractor shall start to perform the Work on the date specified in the notice to proceed, but no work shall be done at the site prior to the date on which the contract time commences to run.
- 2.3 If at any time the materials and appliances to be used appear to the Owner as insufficient or improper for securing the quality of work required or the required rate of progress, the Owner may order the Contractor to increase his efficiency or to improve the character of his work and the Contractor shall conform to such an order. The failure of the Owner to demand any increase of such efficiency of any improvement shall not release the Contractor from his obligation to secure the quality of work or the rate of progress necessary to complete the Work within the limits imposed by the contract. The Owner may require the Contractor to remove from the Work such employees as the Owner deems incompetent, careless, insubordinate or otherwise objectionable, or whose continued employment on the Work is deemed to be contrary to the Owner's interest.
- 2.4 The Owner reserves the right to let other Contracts in connection with this Work. The Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and execution of their Work, and promptly connect and coordinate the Work with theirs.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, RE-USE

3.1 The contract documents comprise the entire Agreement between Owner and Contractor concerning the work. The contract documents are complementary; what is called for by one is as binding as if called for by all. The contract documents will be construed in accordance with the laws and ordinances of the state of Florida and Manatee County.

Should a conflict exist within the Contract Documents, the precedence in ascending order of authority is as follows: 1) Standard Printed Technical Specifications, 2) Special Conditions, 3) General Conditions and 4) Drawings. Note: Computed dimensions shall govern over scaled dimensions.

3.2 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 work, materials or equipment that may reasonably be inferred from the contract documents as being required to produce the intended result will be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe work, materials, or equipment, such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect at the time of opening of bids, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the contract documents) shall be effective to change the duties and responsibilities of Owner, Contractor or Engineer, or any of their agents or employees from those set forth in the Contract Documents.

3.3 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:

- 3.3.1 A Formal Written Amendment
- 3.3.2 A Change Order
- 3.3.3 A Work Directive Change
- 3.3.4 An Administrative Contract Adjustment

3.4 In addition, the requirements of the contract documents may be supplemented and minor variations and deviations in the Work may be authorized in one or more of the following ways:

- 3.4.1 A Field Order
- 3.4.2 Engineer's approval of a Shop Drawing or sample.

ARTICLE 4 - CONTRACTOR'S RESPONSIBILITIES

- 4.1 Contractor shall keep on the Work at all times during its progress a competent resident superintendent; who shall be the Contractor's representative at the site and shall have authority to act on behalf of Contractor. All communications given to the superintendent shall be as binding as if given to Contractor.
- 4.2 Contractor shall provide competent, suitable qualified personnel to survey and lay out the Work and perform construction as required by the contract documents. Contractor shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto and except as otherwise indicated 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 or Sunday or legal holiday without Owner's written consent given after prior notice to Engineer (at least 72 hours in advance).
  - 4.2.1 Contractor shall pay for all additional engineering charges to the Owner for any overtime work which may be authorized. Such additional engineering charges shall be a subsidiary obligation of Contractor and no extra payment shall be made by Owner on account of such overtime work. At Owner's option, overtime costs may be deducted from Contractor's monthly payment request or Contractor's retainage prior to release of final payment.
- 4.3 Unless otherwise specified, Contractor shall furnish and assume full responsibility for all bonds, insurance, 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 furnishing, performance, testing, start-up and completion of the Work.
- 4.4 All materials and equipment shall be of good quality and new, except as otherwise provided in the contract documents. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instruction of the applicable supplier except as otherwise provided in the contract documents.
- 4.5 Contractor shall be fully responsible to Owner for all acts and omissions of the subcontractors, suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with Contractor just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between Owner or Engineer and any such subcontractor, supplier or other person or organization, nor shall it create any obligation on the part of Owner to pay or to see to the payment of any monies due any such subcontractor, supplier or other person or organization.

- 4.6 Permits: Unless otherwise provided, 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.
- 4.7 During the progress of the Work, Contractor shall keep the premises free from accumulation of waste materials rubbish and other debris resulting from the Work. At the completion of the Work, Contractor shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery and surplus materials and shall leave the site clean and ready for occupancy by Owner. Contractor shall restore to original conditions all property not designated for alteration by the Contract Documents.
- 4.8 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.
- 4.9 Safety and Protection: Contractor shall comply with the Florida Department of Commerce Safety Regulations and any local safety regulations. Contractor shall be 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:
  - 4.9.1 all employees on the Work and other persons and organizations who may be affected thereby;
  - 4.9.2 all the work and materials and equipment to be incorporated therein, whether in storage on or off the site; and
  - 4.9.3 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.

Contractor shall comply with all applicable laws and regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall provide and maintain all passageways, guard fences, lights and other facilities for the protection required by public authority or local conditions. Contractor shall provide reasonable maintenance of traffic way for the public and preservation of the Owner's business, taking into full consideration all local conditions. Contractor's duties and responsibilities for the safety and protection of the work shall continue until such time as all the work is completed.

- 4.10 Emergencies: In emergencies affecting the safety or protection of persons or the work or property at the site or adjacent thereto, Contractor, without special instruction or authorization from Engineer or Owner, is obligated to act to prevent threatened damage, injury or loss. Contractor shall give Owner prompt written

notice if Contractor believes that any significant changes in the work or variations from the contract documents have been caused thereby. If Owner determines that a change in the contract documents is required because of the action taken in response to an emergency, a Work Directive Change or Change Order will be issued to document the consequences of the changes or variation.

- 4.11 For substitutes not included with the bid, but submitted after the effective date of the Agreement, Contractor shall make written application to Engineer for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will also contain an itemized estimate of all costs and delays or schedule impacts that will result directly or indirectly from review, acceptance and provisions of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by the Engineer in evaluating the proposed substitute. Engineer may require Contractor to furnish at Contractor's expense, additional data about the proposed substitute. In rendering a decision, Owner/Engineer and Contractor shall have access to any available float time in the construction schedule. In the event that substitute materials or equipment not included as part of the bid, but proposed after the effective date of the agreement, are accepted and are less costly than the originally specified materials or equipment, then the net difference in cost shall be credited to the Owner and an appropriate change order executed.
- 4.11.1 If a specific means, method, technique, sequence of procedure of construction is indicated in or required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to Engineer if Contractor submits sufficient information to allow Engineer to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents.
- 4.11.2 Engineer will be allowed a reasonable time within which to evaluate each proposed substitute. Engineer will be the sole judge of acceptability and no substitute will be ordered, installed or utilized without Engineer's prior written acceptance which will be evidenced by either a change order or an approved shop drawing. Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- 4.11.3 Contractor shall reimburse Owner for the charges of Engineer and Engineer's Consultants for evaluating each proposed substitute submitted after the effective date of the Agreement and all costs resulting from any delays in the work while the substitute was undergoing review.
- 4.12 The Contractor shall furnish, free of charge, all labor, stakes, surveys, batter boards for structures, grade lines and other materials and supplies and shall set construction stakes and batter boards for establishing lines, position of structures, slopes and other controlling points necessary for the proper prosecution of the

Work. Where rights-of-way, easements, property lines or any other conditions which make the lay-out of the project or parts of the project critical are involved, the Contractor will employ a competent surveyor who is registered in the state of Florida for lay-out and staking. These stakes and marks shall constitute the field control by and in accord with which the Contractor shall govern and execute the work. The Contractor will be held responsible for the preservation of all stakes, marks and if for any reason any of the stakes or marks or batter boards become destroyed or disturbed, they will be immediately and accurately replaced by the Contractor.

- 4.13 The Contractor has, by careful examination, satisfied himself as to the nature and location of the Work and all other matters which can in any way affect the Work under this contract, including, but not limited to details pertaining to boring, as shown on the drawings, are not guaranteed to be more than a general indication of the materials likely to be found adjacent to holes bored at the site of the work, approximately at the locations indicated. The Contractor shall examine boring data, where available, and make his own interpretation of the subsoil investigations and other preliminary data, and shall base his bid on his own opinion of the conditions likely to be encountered. In no event shall an extension of time be considered for any conditions that existed at the time of bidding, nor shall the Contractor receive extra compensation for completion of the project as intended by the drawings and in keeping with the Contact Documents. No verbal agreement or conversation with any officer, agent or employee of the Owner, before or after the execution of this contract, shall affect or modify any of the terms or obligations herein contained.
- 4.14 If the Contractor, in the course of the Work, finds that the drawings and/or technical specifications cannot be followed, he shall immediately inform the Owner in writing, and the Owner shall promptly check the accuracy of the information. Any work done after such discovery, until any necessary changes are authorized, will be done at the Contractor's risk.

#### ARTICLE 5 - OWNER'S RESPONSIBILITIES

- 5.1 Owner shall furnish the data required of Owner under the Contract Documents promptly and shall make payments to the Contractor within a reasonable time (no more than 20 days) after the Work has been accepted by the County. The form of all submittals, notices, change orders and other documents permitted or required to be used or transmitted under the contract documents shall be determined by the Owner/Engineer. Standard County forms shall be utilized.
- 5.2 The Owner shall provide the lands upon which the Work under this contract is to be done, except that the Contractor shall provide all necessary additional land required for the erection of temporary construction facilities and storage of his materials, together with right of access to same.
- 5.3 The Owner shall have the right to take possession of and use any completed portions of the work, although the time for completing the entire work or such portions may not have expired, but such taking possession and use shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents.

## ARTICLE 6 - CHANGES IN THE WORK

- 6.1 Without invalidating the Agreement and without notice to any surety, Owner may, at any time, order additions, deletions or revisions in the Work. These will be authorized by a written amendment, a change order, or a work directive change. 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).
- 6.2 Contractor shall not be entitled to an increase in the contract price or an extension of the contract time with respect to any Work performed that is not required by the contract documents as amended, modified and supplemented.
- 6.3 Owner and Contractor shall execute appropriate change orders (or written amendments) covering changes in the Work which are ordered by Owner, or which may be required because of acceptance of defective Work.
- 6.4 At any time Engineer may request a quotation from Contractor for a proposed change in the Work and within twenty-one (21) calendar days after receipt, Contractor shall submit a written and detailed proposal for an increase or decrease in the contract price or contract time for the proposed change. Engineer shall have 21 calendar days after receipt of the detailed proposal to respond in writing. The proposal shall include an itemized estimate of all costs and time for performance that will result directly or indirectly from the proposed change. Unless otherwise directed, itemized estimates shall be in sufficient detail to reasonably permit an analysis by Engineer of all material, labor, equipment, subcontracts, overhead costs and fees, and shall cover all Work involved in the change, whether such Work was deleted, added, changed or impacted. Notwithstanding the request for quotation, Contractor shall carry on the Work and maintain the progress schedule. Delays in the submittal of the written and detailed proposal will be considered non-prejudicial.

## ARTICLE 7 - CHANGE OF CONTRACT PRICE

- 7.1 The contract price constitutes the total compensation (subject to authorized adjustments) payable to Contractor for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by Contractor shall be at his expense without change in the contract price.
- 7.2 The contract price may only be changed by change order or by a written amendment. Any claim for an increase or decrease in the contract price shall be based on written notice delivered by the party making the claim to the other party. Notice of the amount of the claim with supporting data shall be delivered within ten (10) days from the beginning of such occurrence and shall be accompanied by claimant's written statement that the amount claimed covers all known amounts (direct, indirect and consequential) to which the claimant is entitled as a result of the occurrence of said event.
- 7.3 The value of any Work covered by a change order or of any claim for an increase or decrease in the contract price shall be determined in one of the following ways (at Owner's discretion):

- 7.3.1 Where the Work involved is covered by unit prices contained in the contract documents, cost will be determined by application of such unit prices to the quantities of the items involved.
- 7.3.2 By mutual acceptance of lump sum.
- 7.3.3 On the basis of the cost of the Work, plus a 20% Contractor's fee for overhead and profit. (Contractor shall submit an itemized cost breakdown together with supporting data.)
- 7.4 Either Owner or Contractor may make a claim for an adjustment in the contract price. The unit price of an item of unit price Work shall be subject to re-evaluation and adjustment under the following conditions:
  - 7.4.1 If the total cost of a particular item of unit price Work amounts to 5% or more of the contract price and the variation in the quantity of the particular item of unit price Work performed by Contractor differs by more than 15% from the estimated quantity of such item indicated in the Agreement; and
  - 7.4.2 If there is no corresponding adjustment with respect to any other item of Work; and
  - 7.4.3 If a Contractor believes that it has incurred additional expense as a result thereof; or
  - 7.4.4 If Owner believes that the quantity variation entitles it to an adjustment in the unit price; or
  - 7.4.5 If the parties are unable to agree as to the effect of any such variations in the quantity of unit price Work performed.

ARTICLE 8 - CHANGE OF CONTRACT TIME

- 8.1 Contract time may only be changed by a change order or a written amendment. Any claim for an extension or shortening of the contract time shall be based on written notice delivered by the party making the claim to the other party. Notice of the extent of the claim with supporting data shall be delivered within fifteen (15) days from detection or beginning of such occurrence and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event.
- 8.2 The contract time will be extended in an amount equal to time lost due to delays beyond the control of Contractor. Such delays shall include, but not be limited to, acts or neglect by Owner or others performing additional work; or to fires, floods, epidemics, abnormal weather conditions or acts of God.
- 8.3 All time limits stated in the contract documents are of the essence.

## ARTICLE 9 - WARRANTY, TEST/INSPECTION, CORRECTION

- 9.1 Contractor warrants (for a minimum period of one year or as otherwise stated herein) and guarantees to Owner that all work will be in accordance with the contract documents and will not be defective; that Owner, representatives of Owner, governmental agencies with jurisdictional interests will have access to the work at reasonable time for their observation, inspecting and testing (Contractor shall give Engineer timely notice of readiness of the work for all required approvals and shall assume full responsibility, including costs, in obtaining required tests, inspections, and approval certifications and/or acceptance, unless otherwise stated by Owner).
- 9.2 If any work (including work of others) that is to be inspected, tested, or approved is covered without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation. Such uncovering 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. Neither observations by Engineer nor inspections, tests, or approvals by others shall relieve Contractor from Contractor's obligations to perform the work in accordance with the Contract Documents.
- 9.3 If the work is defective, or Contractor fails to supply sufficient skilled workers, or suitable materials or equipment, or fails to furnish or 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 and terminate payments to the Contractor until the cause for such order has been eliminated. Contractor shall bear all direct, indirect and consequential costs for satisfactory reconstruction or removal and replacement with non-defective work, including, but not limited to fees and charges of engineers, architects, attorneys and other professionals and any additional expenses experienced by Owner due to delays to other Contractors performing additional work and an appropriate deductive change order shall be issued. Contractor shall further bear the responsibility for maintaining schedule and shall not be entitled to an extension of the contract time and the recovery of delay damages due to correcting or removing defective work.
- 9.3.1 If Contractor fails within seven (7) days after written notice to correct defective work, or fails to perform the work in accordance with the contract documents, or fails to comply with any other provision of the contract documents, Owner may correct and remedy any such deficiency. To the extent necessary to complete corrective and remedial action, Owner may exclude Contractor from all or part of the site, take possession of all or part of the work, Contractor's tools, construction equipment and machinery at the site or for which Owner has paid Contractor but which are stored elsewhere. All direct, indirect and consequential costs of Owner in exercising such rights and remedies will be charged against Contractor in an amount approved as to reasonableness by Engineer and a change order will be issued incorporating the necessary revisions.
- 9.3.2 If within one year after the date of 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, any work is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions, either correct such defective work or if it has been rejected by Owner, remove it from the site and replace it with non-defective work. If Contractor does not promptly comply with the terms of such instruction, Owner may have the defective work corrected/removed and all direct, indirect and consequential costs of such removal and replacement will be paid by Contractor.

## ARTICLE 10 - SUSPENSION/TERMINATION OF WORK

- 10.1 Owner may, at any time and without cause, suspend the work or any portion thereof for a period of not more than ninety (90) days by written notice to Contractor, which will fix the date on which work will be resumed. Contractor shall be allowed an increase in the contract price or an extension of the contract time, or both, directly attributable to any suspension if Contractor makes an approved claim therefore.
- 10.2 Owner may terminate the contract if Contractor commences a voluntary case under any chapter of the Bankruptcy Code or any similar action by filing a petition under any other federal or state law relating to the bankruptcy or insolvency; if a petition is filed against the Contractor under any chapter of the Bankruptcy Code or similar relief under any other federal or state law; if Contractor persistently fails to perform the work in accordance with the contract documents; if Contractor disregards laws or regulations of any public body having jurisdiction or the Engineer; or otherwise violates in any substantial way any provisions of the contract.
- 10.2.1 Owner may, after giving Contractor (and the surety, if there is one) seven (7) days written notice and to the extent permitted by laws and regulations, terminate the services of Contractor; exclude Contractor from the site and take possession of the work and of all Contractor's tools, construction equipment and machinery at the site and use the same to the full extent they could be used (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 beyond an amount equal to the value of material and equipment not incorporated in the work, but delivered and suitably stored, less the aggregate of payments previously made. If the direct and indirect costs of completing the work exceed the unpaid balance of the contract price, Contractor shall pay the difference to Owner. Such costs incurred by Owner shall be verified by Owner and incorporated in a change order; but in finishing the work, Owner shall not be required to obtain the lowest figure for the work performed. Contractor's obligations to pay the difference between such costs and such unpaid balance shall survive termination of the Agreement.
- 10.3 If, through no act or fault of Contractor, the work is suspended for a period of more than ninety (90) days by Owner or under an order of court or other public authority,

or Engineer fails to act on any application or fails to pay Contractor any sum finally determined to be due; then Contractor may, upon seven (7) days written notice to Owner terminate the Agreement and recover from Owner payment for all work executed, any expense sustained plus reasonable termination expenses. In lieu of terminating the Agreement, if Engineer has failed to act on any application of payment or Owner has failed to make any payment as aforesaid, Contractor may upon seven (7) days written notice to Owner stop the work until payment of all amounts then due.

## ARTICLE 11 - CONTRACT CLAIMS

- 11.1 The rendering of a decision by Engineer with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment) will be a condition precedent to any exercised by Owner or Contractor of such right 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. No action, either at law or at equity, shall be brought in connection with any such claim, dispute or other matter later than thirty (30) days after the date on which Owner/Engineer has rendered such written decision in respect thereof. Failure to bring an action within said thirty (30) day period shall result in Engineer's decision being final and binding on the Contractor. In no event may any such action be brought after the time at which instituting such proceedings would be otherwise barred by the applicable statute of limitations.
- 11.2 Before bringing any action in court pertaining to any claim, dispute or other matter in question(s) arising out of or relating to the contract documents or the breach thereof, or Engineer's final decision, except for claims which have been waived by the making and acceptance of final payment, the Contractor shall first submit written notice(s) of contract claims to the Purchasing Official for a decision within the earlier of sixty (60) days after the last date on which the contractor provided any goods or services required by the contract or after the date on which the contractor knew or should have known such a claim existed. The Manatee County Code of Law section 2-26-63 Contract Claims details the requirements and process for such a claim.

## ARTICLE 12 - RESIDENT PROJECT REPRESENTATIVE - DUTIES, RESPONSIBILITIES

- 12.1 Resident Project Representative is Engineer/Owner's Agent, who will act as directed by and under the supervision of the Engineer, and who will confer with Owner/Engineer regarding his actions. Resident Project Representative's dealing in matters pertaining to the on-site work shall, in general, be only with the Owner/Engineer and Contractor and dealings with subcontractors shall only be through or with the full knowledge of Contractor.

- 12.2 Resident Project Representative will:
- 12.2.1 Review the progress schedule, schedule of shop drawing submissions and schedule of values prepared by Contractor and consult with Owner/Engineer concerning their acceptability.
  - 12.2.2 Attend preconstruction conferences. Arrange a schedule of progress meetings and other job conferences as required in consultation with Owner/Engineer and notify those expected to attend in advance. Attend meetings and maintain and circulate copies of minutes thereof.
  - 12.2.3 Serve as Owner/Engineer's liaison with Contractor, working principally through Contractor's superintendent and assist him in understanding the intent of the contract documents. As requested by Owner/Engineer, assist in obtaining additional details or information when required at the job site for proper execution of the Work.
  - 12.2.4 Receive and record date of receipt of shop drawings and samples, receive samples which are furnished at the site by Contractor and notify Owner/Engineer of their availability for examination.
  - 12.2.5 Advise Owner/Engineer and Contractor or his superintendent immediately of the commencement of any work requiring a shop drawing or sample submission if the submission has not been approved by the Owner/Engineer.
  - 12.2.6 Conduct on-site observations of the work in progress to assist Owner/Engineer in determining if the work is proceeding in accordance with the contract documents and that completed work will conform to the contract documents.
  - 12.2.7 Report to Owner/Engineer whenever he believes that any work is unsatisfactory, faulty or defective or does not conform to the contract documents, or does not meet the requirements of any inspections, tests or approvals required or if work has been damaged prior to final payment; and advise Owner/Engineer when he believes work should be corrected or rejected or should be uncovered for observation or requires special testing, inspection or approval.
  - 12.2.8 Verify that tests, equipment and system start-ups and operating and maintenance instructions are conducted as required by the contract documents and in the presence of the required personnel, and that Contractor maintains adequate records thereof; observe, record and report to Engineer appropriate details relative to the test procedures and start-ups.
  - 12.2.9 Accompany visiting inspectors representing public or other agencies having jurisdiction over the project, record the outcome of these inspections and report to Owner/Engineer.

- 12.2.10 Transmit to Contractor, Owner/Engineer's clarifications and interpretations of the contract documents.
- 12.2.11 Consider and evaluate Contractor's suggestions or modifications in drawings or technical specifications and report them with recommendations to Owner/Engineer.
- 12.2.12 Maintain at the job site orderly files for correspondence, reports of job conferences, shop drawings and sample submissions, reproductions of original contract documents including all addenda, change orders, field orders, additional drawings issued subsequent to the execution of the contract, Owner/Engineer's clarifications and interpretations of the contract documents, progress reports and other project related documents.
- 12.2.13 Keep a diary or log book, recording hours on the job site, weather conditions, data relative to questions of extras or deductions; list of visiting officials and representatives or manufacturers, fabricators, suppliers and distributors; daily activities, decisions, observations in general and specific observations in more detail as in the case of observing test procedures. Send copies to Owner/Engineer.
- 12.2.14 Record names, addresses and telephone numbers of all Contractors, subcontractors and major suppliers of materials and equipment.
- 12.2.15 Furnish Owner/Engineer periodic reports as required of progress of the work and Contractor's compliance with the approved progress schedule and schedule of shop drawing submissions.
- 12.2.16 Consult with Owner/Engineer in advance of scheduling major tests, inspections or start of important phases of the work.
- 12.2.17 Report immediately the occurrence of any accident.
- 12.2.18 Review applications for payment with Contractor for compliance with the established procedure for their submission and forward them with recommendations to Owner/Engineer, noting particularly their relation to the schedule of values, work completed and materials and equipment delivered at the site but not incorporated in the work.
- 12.2.19 During the course of the work, verify that certificates, maintenance and operations manuals and other data required to be assembled and furnished by Contractor are applicable to the items actually installed, and deliver this material to Owner/Engineer for his review prior to final acceptance of the work.
- 12.2.20 Before Owner/Engineer issues a Certificate of Substantial Completion, submit to Contractor a list of observed items requiring completion or correction.

- 12.2.21 Conduct final inspection in the company of Owner/Engineer and Contractor and prepare a final list of items to be completed or corrected.
- 12.2.22 Verify that all items on final list have been completed or corrected and make recommendations to Owner/Engineer concerning acceptance.
- 12.3 Except upon written instructions of Owner/Engineer, Resident Project Representative:
  - 12.3.1 Shall not authorize any deviation from the contract documents or approve any substitute materials or equipment;
  - 12.3.2 Shall not exceed limitations on Owner/Engineer's authority as set forth in the contract documents;
  - 12.3.3 Shall not undertake any of the responsibilities of Contractor, Subcontractors or Contractor's Superintendent, or expedite the work;
  - 12.3.4 Shall not advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the contract documents;
  - 12.3.5 Shall not advise on or issue directions as to safety precautions and programs in connection with the work;
  - 12.3.6 Shall not authorize Owner to occupy the project in whole or in part; and
  - 12.3.7 Shall not participate in specialized field or laboratory tests.

NOTE: The form of all submittals, notices, change orders and other documents permitted or required to be used or transmitted under the Contract shall be determined by the County.

END OF SECTION

SECTION K  
**U.S. DEPARTMENT OF ENERGY**  
**RECOVERY ACT: ENERGY EFFICIENCY AND CONSERVATION**  
**BLOCK GRANT SUPPLEMENTAL CONDITIONS**

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The project is funded in part by recovery funds appropriated to the County of Manatee under the American Recovery and Reinvestment Act 2009 (ARRA) through the United States Department of Justice (USDOJ) and the Florida Department of Law Enforcement (FDLE) funds for contract (Grant) No. 2010-ARRC-MANA-6-W7-349. CFDA Number: 16.803 Federal Award Number: 2009-SU-B9-0021, and is subject to these conditions and requirements. If the contractor fails to comply with the American Recovery and Reinvestment Act of 2009, the County will withhold progress payments.

All contractors and subcontractors will adhere to the following Supplemental Conditions. In case of disagreement with any other section of this Bid Document, the Supplemental Conditions shall govern.

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**AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 COMPLIANCE**

The following American Recovery and Reinvestment Act of 2009 (ARRA) requirements are applicable to this solicitation and any resultant contract:

**1. DUNS NUMBER**

Bidders will be required to provide Manatee County their unique Dun and Bradstreet “Data Universal Numbering System” (DUNS) number with their bid submittal. If you do not know or do not have a DUNS number, visit [www.dnb.com](http://www.dnb.com) and click on “Get a D-U-N-S Number” to obtain a number.

**2. SEGREGATION OF COSTS**

Recipients must segregate the obligations and expenditures related to funding under the ARRA. Financial and accounting systems should be revised as necessary to segregate, track and maintain these funds apart and separate from other revenue streams. No part of the funds from the Recovery Act shall be commingled with any other funds or used for a purpose other than that of making payments for costs allowable for ARRA projects.

**3. PROHIBITION ON USE OF FUNDS**

None of the funds provided under this agreement derived from the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, may be used by any State or local government, or any private entity, for any casino or other gambling establishment, aquarium, zoo, golf course, or swimming pool.

**4. ACCESS TO RECORDS**

ARRA requires recipients of recovery funds to allow representatives of the United States Comptroller General and Office of Inspector General to examine records and interview persons of firms working on Contracts that use ARRA funds. In accordance with Section 902 of the American Recovery and Reinvestment Act (ARRA) of 2009, this Article 2 provides the U.S. Comptroller General and his representatives as appointed under Section 3 or 8G of the Inspector General Act of 1978 (5 U.S.C.APP.) with the authority and rights as provided under Section 1515(b) of the ARRA to:

- (1) examine any records of the contractor or any of its subcontractors, or any State or local agency administering such contract, that directly pertain to, and involve transactions relating to, the contract or subcontract; and
- (2) interview any officer or employee of the contractor or any of its subcontractors, or of any State or local government agency administering the contract, regarding such transactions.

Section 1515(b) further states that nothing in this section shall be interpreted to limit or restrict in any way any existing authority of the Comptroller General.

## 5. ACCESS TO PROJECT SITE DURING CONSTRUCTION

DOE's authorized representatives have the right to make site visits at reasonable times to review project accomplishments and management control systems and to provide technical assistance, if required. Contractor will provide reasonable access to facilities, office space, resources, and assistance for the safety and convenience of the government representatives in the performance of their duties. All site visits and evaluations will be performed in a manner that does not unduly interfere with or delay the Work.

## 6. PROTECTING GOVERNMENT AND CONTRACTOR WHISTLEBLOWERS

**Prohibition on Reprisals:** In compliance with Section 1553 of the ARRA, an employee of any non-Federal employer may not be discharged, demoted, or otherwise discriminated against as a reprisal for disclosing, including a disclosure made in the ordinary course of an employee's duties, to the Accountability and Transparency Board, an inspector general, the Comptroller General, a member of Congress, a State or Federal regulatory or law enforcement agency, a person with supervisory authority over the employee (or other person working for the employer who has the authority to investigate, discover or terminate misconduct), a court or grand jury, the head of a Federal agency, or their representatives information that the employee believes is evidence of:

- gross management of an agency contract or grant relating to covered funds;
- a gross waste of covered funds;
- a substantial and specific danger to public health or safety related to the implementation or use of covered funds;
- an abuse of authority related to the implementation or use of covered funds; or
- as violation of law, rule, or regulation related to an agency contract (including the competition for or negotiation of a contract) or grant, awarded or issued relating to covered funds.

**Requirement to Post Notice of Rights and Remedies:** Any employer receiving covered funds under the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, shall post notice of the rights and remedies as required therein. (Refer to section 1553 of the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, [www.Recovery.gov](http://www.Recovery.gov), for specific requirements of this section and prescribed language for the notices.)

## 7. FALSE CLAIMS ACT

Contractor shall promptly refer to the DOE or other appropriate Inspector General any credible evidence that a principal, employee, agent, contractor, sub-grantee, subcontractor or other person has submitted a false claim under the False Claims Act or has committed a criminal or civil violation of laws pertaining to fraud, conflict of interest, bribery, gratuity or similar misconduct involving those funds.

## 8. INFORMATION IN SUPPORT OF RECOVERY ACT REPORTING

Contractor may be required to submit backup documentation for expenditures of funds under the ARRA including such items as timecards and invoices. Contractor shall provide copies of backup documentation at the request of the County or authorized representative.

## 9. BUY AMERICAN-MADE EQUIPMENT AND PRODUCTS

It is the sense of the Congress that, to the greatest extent practicable, all equipment and products purchased with funds made available under this award should be American-made in accordance with Section 1605 of the ARRA.

\*Special Note: Definitization of the Provisions entitled, "REQUIRED USE OF AMERICAN IRON, STEEL, AND MANUFACTURED GOODS – SECTION 1605 OF THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009" and "REQUIRED USE OF AMERICAN IRON, STEEL, AND MANUFACTURED GOODS (COVERED UNDER INTERNATIONAL AGREEMENTS) – SECTION 1605 OF THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009" will be done upon definition and review of final activities.

### **REQUIRED USE OF AMERICAN IRON, STEEL, AND MANUFACTURED GOODS**

a) *Definitions.* As used in this award term and condition—

- 1) *Manufactured good* means a good brought to the construction site for incorporation into the building or work that has been—
  - i) Processed into a specific form and shape; or
  - ii) Combined with other raw material to create a material that has different properties than the properties of the individual raw materials.
- 2) *Public building and public work* means a public building of, and a public work of, a governmental entity (the United States; the District of Columbia; commonwealths, territories, and minor outlying islands of the United States; State and local governments; and multi-State, regional, or interstate entities which have governmental functions). These buildings and works may include, without limitation, bridges, dams, plants, highways, parkways, streets, subways, tunnels, sewers, mains, power lines, pumping stations, heavy generators, railways, airports, terminals, docks, piers, wharves, ways, lighthouses, buoys, jetties, breakwaters, levees, and canals, and the construction, alteration, maintenance, or repair of such buildings and works.
- 3) *Steel* means an alloy that includes at least 50 percent iron, between .02 and 2 percent carbon, and may include other elements.

b) *Domestic preference.*

- 1) This award term and condition implements Section 1605 of the ARRA by requiring that all iron, steel, and manufactured goods used in the project are produced in the United States except as provided in this Section.
- 2) This requirement does not apply to the material listed by the Federal Government as follows:
  - i) To be determined (None has been added)
  - ii) The County may add other iron, steel, and/or manufactured goods to the list in this Section if the Federal Government determines that—

- (1) The cost of the domestic iron, steel, and/or manufactured goods would be unreasonable. The cost of domestic iron, steel, or manufactured goods used in the project is unreasonable when the cumulative cost of such material will increase the cost of the overall project by more than 25 percent;
- (2) The iron, steel, and/or manufactured good is not produced, or manufactured in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or
- (3) The application of the restriction of section 1605 of the Recovery Act would be inconsistent with the public interest.

c) *Request for determination of inapplicability of Section 1605 of the ARRA*

- 1) Any request to use foreign iron, steel, and/or manufactured goods in accordance with paragraph b)3) of this Section shall include adequate information for Federal Government evaluation of the request, including—
  - i) A description of the foreign and domestic iron, steel, and/or manufactured goods;
  - ii) Unit of measure;
  - iii) Quantity;
  - iv) Cost;
  - v) Time of delivery or availability;
  - vi) Location of the project;
  - vii) Name and address of the proposed supplier; and
  - viii) A detailed justification of the reason for use of foreign iron, steel, and/or manufactured goods cited in accordance with paragraph b)3) of this section.
- 2) A request based on unreasonable cost shall include a reasonable survey of the market and a completed cost comparison.
- 3) The cost of iron, steel, and/or manufactured goods material shall include all delivery costs to the construction site and any applicable duty.
- 4) Any request for a determination submitted after ARRA funds have been obligated for a project for construction, alteration, maintenance, or repair shall explain why the contractor could not reasonably foresee the need for such determination and could not have requested the determination before the funds were obligated. If the contractor does not submit a satisfactory explanation, the award official need not make a determination.
- 5) If the Federal Government determines after funds have been obligated for a project for construction, alteration, maintenance, or repair that an exception to Section 1605 of the ARRA applies, the award official will amend the award to allow use of the foreign iron, steel, and/or relevant manufactured goods. When the basis for the exception is nonavailability or public interest, the amended award shall reflect adjustment of the

award amount, redistribution of budgeted funds, and/or other actions taken to cover costs associated with acquiring or using the foreign iron, steel, and/or relevant manufactured goods. When the basis for the exception is the unreasonable cost of the domestic iron, steel, or manufactured goods, the award official shall adjust the award amount or redistribute budgeted funds by at least the differential established in 2 CFR 176.110(a).

- 6) Unless the Federal Government determines that an exception to Section 1605 of the ARRA applies, use of foreign iron, steel, and/or manufactured goods is noncompliant with Section 1605 of the ARRA.

**REQUIRED USE OF AMERICAN IRON, STEEL, AND MANUFACTURED GOODS  
(COVERED UNDER INTERNATIONAL AGREEMENTS)**

a) *Definitions.* As used in this award term and condition—

- (1) *Designated country* — (1) A World Trade Organization Government Procurement Agreement country (Aruba, Austria, Belgium, Bulgaria, Canada, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea (Republic of), Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and United Kingdom);
- (2) A Free Trade Agreement (FTA) country (Australia, Bahrain, Canada, Chile, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Israel, Mexico, Morocco, Nicaragua, Oman, Peru, or Singapore); or
- (3) A United States-European Communities Exchange of Letters (May 15, 1995) country: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, and United Kingdom.

b) *Designated country iron, steel, and/or manufactured goods* —

- (1) *Is wholly the growth, product, or manufacture of a designated country; or*
- (2) In the case of a manufactured good that consist in whole or in part of materials from another country, has been substantially transformed in a designated country into a new and different manufactured good distinct from the materials from which it was transformed.

c) *Domestic iron, steel, and/or manufactured good* —

- (1) *Is wholly the growth, product, or manufacture of the United States; or*
- (2) In the case of a manufactured good that consists in whole or in part of materials from another country, has been substantially transformed in the United States into a new and different manufactured good distinct from the materials from which it was transformed. There is no requirement with regard to the origin of components in manufactured goods or products, as long as the manufacture of the goods occurs in the United States.

- 7) *Foreign iron, steel, and/or manufactured good* means iron, steel and/or manufactured good that is not domestic or designated country iron, steel, and/or manufactured good.
- 8) All other conditions as stated above in this Article.

#### 10. PUBLICATION

An application may contain technical data and other data, including trade secrets and/or privileged or confidential information, which the applicant does not want disclosed to the public or used by the Government for any purpose other than the application. To protect such data, the applicant should specifically identify each page including each line or paragraph thereof containing the data to be protected and mark the cover sheet of the application with the following Notice as well as referring to the Notice on each page to which the Notice applies:

##### Notice of Restriction on Disclosure and Use of Data

The data contained in pages ---- of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data here to the extent provided in the award. This restriction does not limit the Government's right to use or disclose data obtained without restriction from any source, including the applicant.

#### 11. AVAILABILITY OF FUNDS

Funds obligated to this award are available for reimbursement of costs until 36 months after the award date.

#### 12. ADDITIONAL FUNDING DISTRIBUTION AND ASSURANCE OF APPROPRIATE USE OF FUNDS

Certification by Governor – For funds provided to any State or agency thereof by the American Reinvestment and Recovery Act of 2009, Pub. L. 111-5, the Governor of the State shall certify that: 1) the state will request and use funds provided by the Act; and 2) the funds will be used to create jobs and promote economic growth.

Acceptance by State Legislature -- If funds provided to any State in any division of the Act are not accepted for use by the Governor, then acceptance by the State legislature, by means of the adoption of a concurrent resolution, shall be sufficient to provide funding to such State.

Distribution -- After adoption of a State legislature's concurrent resolution, funding to the State will be for distribution to local governments, councils of government, public entities, and public-private entities within the State either by formula or at the State's discretion.

### 13. WAGE RATE REQUIREMENTS

Section 1606 of the ARRA Act requires that all laborers and mechanics employed by contractors and subcontractors on projects funded directly by or assisted in whole or in part by and through the Federal Government pursuant to the ARRA **shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality** as determined by the Secretary of Labor in accordance with Subchapter IV of Chapter 31 of Title 40, United States Code.

Pursuant to Reorganization Plan No. 14 and the Copeland Act, 40 U.S.C. 3145, the Department of Labor has issued regulations at 29 CFR Parts 1, 3, and 5 to implement the Davis-Bacon and related Acts. Contractor shall be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in the work week.

Each contractor and subcontractor each week must furnish a statement on the wages paid each employee during the prior week. Attachments pertaining to wage requirements are attached for your information.

- Current Federal Wage Decision (*attached for information*)
- Current Payroll Form WH-347

FEDERAL WAGE DECISION (US DEPARTMENT OF LABOR)

General Decision Number: FL080123 10/16/2009 FL123

General Decision Number: FL100123 05/21/2010 FL123

Superseded General Decision Number: FL20080123

State: Florida

Construction Type: Building

County: Manatee County in Florida.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Modification Number	Publication Date
0	03/12/2010
1	03/26/2010
2	04/02/2010
3	05/21/2010

ELEC0915-002 12/01/2009

	Rates	Fringes
ELECTRICIAN		
All building work other than Industrial Work which includes Telephone, Utility Companies, and Water Treatment Plants and also excludes Educational, Theme Park, Hospital Facilities, and all building work under \$200,000 or less.....	\$ 22.07	34%+\$0.22
Educational, Theme Park, Hospital Facilities, and all building work under \$200,000 or less, excluding Telephone, Utility Companies and Water Treatment plants.....	\$ 19.69	34%+\$0.22

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 ENGI0925-003 07/01/2008

	Rates	Fringes
OPERATOR: Crane		
Crawler Cranes; Truck Cranes; Pile Driver Cranes; Rough Terrain Cranes; and Any Crane not otherwise described below...	\$ 23.65	10.23
Hydraulic Cranes Rated 100 Tons or Above but Less Than 250 Tons; and Lattice Boom Cranes Less Than 150 Tons if not described below.	\$ 24.65	10.23
Lattice Boom Cranes Rated at 150 Tons or Above;		

Friction Cranes of Any Size; Mobile Tower Cranes or Luffing Boom Cranes of Any Size; Electric Tower Cranes; Hydraulic Cranes Rated at 250 Tons or Above; and Any Crane Equipped with 300 Foot or More of Any Boom Combination.....	\$ 25.65	10.23
OPERATOR: Mechanic.....	\$ 23.65	10.23
OPERATOR: Oiler.....	\$ 21.65	10.23
OPERATOR: Boom Truck.....	\$ 23.65	10.23

IRON0397-001 07/01/2009

	Rates	Fringes
IRONWORKER, ORNAMENTAL, REINFORCING AND STRUCTURAL.....	\$ 26.67	10.65

\* PLUM0123-001 05/01/2010

	Rates	Fringes
PIPEFITTER (HVAC Pipe Installation Only).....	\$ 23.65	10.55

SHEE0015-002 07/01/2009

	Rates	Fringes
SHEETMETAL WORKER (HVAC Duct Installation Only).....	\$ 21.52	12.49

SUFL2009-020 05/22/2009

	Rates	Fringes
BRICKLAYER.....	\$ 18.95	0.00
CARPENTER, Including Form Work...	\$ 15.89	0.00
CEMENT MASON/CONCRETE FINISHER...	\$ 13.05	1.49
INSULATOR - PIPE & PIPEWRAPPER...	\$ 13.13	3.03
LABORER: Asphalt Shoveler.....	\$ 7.88	0.00
LABORER: Common or General.....	\$ 9.42	0.00
LABORER: Concrete Saw.....	\$ 12.63	0.00
LABORER: Mason Tender - Brick...	\$ 13.00	0.00
LABORER: Mason Tender - Cement/Concrete.....	\$ 12.83	1.90
LABORER: Pipelayer.....	\$ 12.31	1.19
LABORER: Roof Tearoff.....	\$ 8.44	0.00
LABORER: Landscape and Irrigation.....	\$ 12.00	0.00
OPERATOR: Asphalt Spreader.....	\$ 11.41	0.00

OPERATOR: Backhoe.....	\$ 11.00	0.00
OPERATOR: Blade/Grader.....	\$ 13.73	0.00
OPERATOR: Bulldozer.....	\$ 15.01	0.00
OPERATOR: Distributor.....	\$ 12.37	0.00
OPERATOR: Forklift.....	\$ 14.00	0.00
OPERATOR: Loader.....	\$ 13.80	1.79
OPERATOR: Paver.....	\$ 11.69	0.00
OPERATOR: Pump.....	\$ 19.00	0.00
OPERATOR: Roller.....	\$ 10.68	0.00
OPERATOR: Screed.....	\$ 11.34	0.00
OPERATOR: Tractor.....	\$ 9.91	0.00
OPERATOR: Trencher.....	\$ 11.75	0.00
PAINTER: Brush, Roller, and Spray.....	\$ 14.00	0.43
PIPEFITTER (Excluding HVAC Pipe Installation).....	\$ 17.83	0.00
PLUMBER.....	\$ 13.58	0.00
ROOFER (Metal Roofs Only).....	\$ 14.26	0.59
ROOFER, Including Built Up, Hot Tar, Modified Bitumen, Shake & Shingle, Single Ply and Slate & Tile (Excluding Metal Roof).....	\$ 14.00	0.43
SHEETMETAL WORKER (Excluding HVAC Duct Installation).....	\$ 18.79	3.21
TILE SETTER.....	\$ 14.61	0.00
TRUCK DRIVER: Dump Truck.....	\$ 10.00	0.00
TRUCK DRIVER: Lowboy Truck.....	\$ 12.09	0.00

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

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In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7).

Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor

considers  
relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

WAGE FORM WH347 PAYROLL

# PROJECT MANUAL

FOR

MANATEE COUNTY SHERIFF'S  
DEPARTMENT  
JUVENILE PROCESS CENTER  
BUILDING RENOVATIONS

421 17TH STREET WEST  
BRADENTON, FL 34205

FOR THE  
MANATEE COUNTY  
PROPERTY MANAGEMENT  
1112 MANATEE AVENUE WEST  
BRADENTON, FLORIDA 34206

JOB NO. 20903

DATE: 11/23/09

SET NO. \_\_\_\_\_

TECHNICAL  
SPECIFICATIONS



**BMK Architects, Inc.**  
323 Central Avenue, Sarasota, FL 34236

**MANATEE COUNTY SHERIFF'S  
JUVENILE PROCESS CENTER**

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## **SECTION 12 30 00 / GENERAL CASEWORK**

### **PART 1 - GENERAL**

#### **1.01 RELATED DOCUMENTS**

- A. Conform to Division 1, Section 12000 and other sections in this division.
- B. All casework shall comply with Florida Americans with Disabilities Accessibility Implementation Act.

#### **1.02 SCOPE OF WORK**

- A. Provide all plastic laminate casework and accessory items as specified herein. Refer to drawings for specific details and requirements.
- B. Work included in this section are those cabinet units shown on the drawings identified with the symbol "MXXX", otherwise referred to as "Millwork", except those specific units which do not lend themselves to modular production are to be included as a part of "Section 06402/Custom Shop Fabricated Millwork".
- C. It is not the intent of this Specification to segregate cabinet work by trade type. The CONTRACTOR will be held to provide a complete and fully integrated cabinetry system.

#### **1.03 RELATED WORK SPECIFIED IN OTHER DIVISIONS/SECTIONS**

Section 06100:	Rough Carpentry
Division 9:	Finishes

#### **1.04 SUBMITTALS**

- A. Submit in accordance with General, Supplementary, and Special Conditions.
- B. Samples of colors shall be submitted upon award of contract for selection and coordination with other suppliers. ARCHITECT may request and retain samples and catalog cuts as required for accessory and special items.

## 1.05 QUALIFICATIONS

- A. Drawings and specifications are based upon casework as manufactured by LSI Corporation of America, Inc., 2100 Xenium Lane, Minneapolis, Minnesota, 55441. Construction and design shall be Performer System L44 Series, overlay door.
1. Lamination System: Doors, finished end panels, and other decorative exterior laminate surfaces shall be composed of minimum 3/4 inch core, laminated exterior with .030 inch high pressure plastic laminate, and interior with .020 inch high pressure cabinet liner. Lamination with hybrid P.V.A. Type III water resistant adhesives. Total thickness 13/16 inch.
  2. Structural Cabinet Body: Cabinet backs shall be minimum 3/8 inch thick, inset from rear of body, fully housed four sides, and back-shimmed. Provide 3/4 inch thick stiffeners glued and fastened to back/body as specified herein. Back perimeter and stiffeners to be fully sealed with hot melt adhesive.
  3. Interior Space: All cabinets shall have clear span interiors. No vertical dividers allowed unless by specified architectural design.
  4. Heavy Components: Wall cabinet tops and bottoms, and all bookstack shelves shall be minimum 1 inch thick, for additional load support. Shelves in door cabinets 30 inches wide and over shall be 1 inch thick. Shelves in open cabinets, regardless of width, shall be 1 inch thick.
  5. Structural Drawer Body: Drawer body material shall be multi-directional fiberboard with bottom recessed, captured all four sides and sealed with hot melt adhesive. Provide under body stiffener as specified herein. Particleboard bodies and/or surface applied bottoms are not acceptable.
  6. Drawer Suspension: Drawer slides shall be self-closing design, epoxy power coated, with positive instop, outstop, and out-keeper. Dynamic (operational) load rating to be minimum 100 lbs. Minimum 150 lb. static load rating. Glides shall allow approximately 80% opening extension.
  7. Structural Cabinet Support: Cabinet sub base shall be of a separate and continuous ladder-type platform design leveled and floor mounted prior to cabinet body placement. Material to be pressure treated solid stock or pressure treated plywood, properly dried prior to fabrication and installation. No cabinet sides-to-floor will be allowed. Support brackets touching floor shall be P.T.
- B. ARCHITECT/OWNER'S opinion and decision shall be final in the evaluation of manufacturer's products for award of contract.
- C. Subject to compliance and meeting or exceeding conditions listed herein, the following manufacturers are acceptable:
- |                     |                          |
|---------------------|--------------------------|
| Calmar              | TMI Systems Design       |
| Commercial Casework | Precision Panel Products |
| Stevens             |                          |

D. Minimum requirements of cabinets:

1. Base cabinet construction/racking test: ..... 800 lbs.
2. Cabinet front joint loading test: ..... 425 lbs.
3. Wall cabinet static load test: .....2,200 lbs.
4. Drawer front joint loading test: .....600 lbs.
5. Drawer construction/static load test: .....600 lbs.
  
6. Cabinet adjustable shelf support device/  
static load test: .....300 lbs.
7. Particleboard screw holding power: .....350 lbs.

PART 2 - PRODUCTS

2.01 MATERIALS

A. LAMINATED PLASTICS/FINISHES:

1. High pressure plastic laminate, .030 inch thickness, for exterior cabinet surfaces shall meet NEMA LD3-1991 GP28 standards including thickness.
2. Exterior Color Selection Available:
  - a. Standard finish vertical surface laminate from casework manufacturer's standard patterns and solid colors, including "matrix" or "graphix" type patterns.
  - b. Total of 6 different colors to be made available.
  - c. Direction of wood grain to be vertical on door, end panels, fascia panels, and exposed backs; horizontal on drawer faces, aprons, and top rails.
  - d. For the purposes of this project "exterior of casework" receiving high pressure plastic laminate is to be interpreted as:
    - All exterior visible faces of base, tall and wall cabinets such as: cabinet body exterior; doors; drawers; countertops including front lip; backsplash and exposed end faces; tops of tall and wall cabinets; end panels of base, tall and wall cabinets if not fully extending to wall.
    - Inside surfaces of open cabinets without doors, including both sides of shelves.
3. Plastic Laminate Balancing Sheet: White high pressure cabinet liner, .020 inch thickness shall meet NEMA LD3-1991 CL 20 standards. Use for balancing exterior surface laminates.
4. Countertop High Pressure Plastic Laminate:

- a. High pressure plastic laminate, textured finish .050 inch thickness. Color as selected from manufacturer's stock standard patterns and solid colors, including "graphix" or "matrix" type patterns.
  - b. Heavy gauge neutral colored backing sheet for balanced construction.
5. Pressure Fused Laminate:
- a. Melamine resin impregnated, 80 gram PSM minimum, surface laminated to core under pressure.
  - b. Shall meet NEMA LD3.3-1991 GP28 standards and NEMA LD3-1991 CL20 standards.
  - c. White pressure fused laminate for cabinet interiors behind door and drawers.
  - d. Shall be balanced at all concealed surfaces with phenolic backer. Unsurfaced coreboard not allowed.
- B. High Performance Particle Board Core:
1. Particleboard to be 47 lb. density, of balanced 3-ply construction with moisture content not to exceed 8%. Particleboard shall conform to ANSI A208.1-1993, type M-3.
  2. Particleboard cabinet components to be of the following minimum core thicknesses prior to lamination:
    - a. 3/8": cabinet backs and drawer bottoms.
    - b. 1/2": dividers.
    - c. 3/4": base and tall cabinet tops and bottoms, cabinet sides, drawer spreaders, door, drawer head, cabinet back rear hangstrips, dividers, exposed cabinet backs.
    - d. 1": wall cabinet tops and bottoms, and all shelving.
- C. Fiberboard Core:
1. Uniform, medium density conforming to ANSI A208.2, shall meet the following minimum standards:  
Screw holding, face: .....355 lbs  
Screw holding, edge: .....300 lbs  
Modulus of rupture: .....4,500 psi  
Modulus of elasticity: .....500,000 psi  
Internal bond: .....100 psi
  2. Fiberboard components to be of the following minimum core thicknesses prior to lamination:
    - a. 1/2": drawer sides, subfront and back. Drawer under bottom stiffeners.

- D. Edging type(s). Provide one or more of the following in accordance with Paragraph E, "Edging Locations":
1. FlatEdge PVC, .020 inch. Solid, high impact, purified, color-thru, acid resistant PVC edging machine-applied with hot melt adhesives, automatically trimmed face, back and corners for uniform appearance. Manufacturer's option of .030 inch high pressure plastic laminate if PVC match is unavailable.
  2. 3mm thick PVC. Solid, high impact, purified, color-thru, acid resistant, pre-lamination primed edging, machine-applied with hot melt adhesives, automatically trimmed, inside/outside length-radiused for uniform appearance, buffed and corner-radiused for consistent design.
- E. Edging Locations. Provide the above specified edging types at the following locations, of the following colors:
1. Door/Drawer front edge:  
3mm PVC selected from 12 standard colors.
  2. Cabinet body edge, including door/drawer front spacer rail:  
FlatEdge PVC, color matched to door/drawer face.
  3. Interior body component edging, interior dividers, top of drawer body, shelf:  
FlatEdge PVC to match cabinet interior surface color.
  4. Leading edge of shelves in open front cabinets:  
3mm PVC listed as item #1 above.
- F. Hardware:
1. Hinges:
    - a. Heavy duty, five knuckle 2 3/4 inch institutional type hinge shall meet ANSI/BHMA A156.9 Grade 1 requirements. Mill ground, hospital tip, tight pin feature with all edges eased. Hinge to be full wrap around type of tempered steel .095 inch thick. Each hinge to have minimum 9 screws, #7, 5/8 inch FHMS to assure positive door attachment.
    - b. One pair per door to 48 inch height. One and one-half pair over 48 inch in height. Hinge to accommodate 13/16 inch thick laminated door and allow 270 degree swing.
    - c. Finish to be brushed chrome, LH-301 ChromeCoat Powder Finish, LH-302 Black, or LH-303 White epoxy coated.
  2. Pulls:
    - a. LSI Signature Series LH-331 semi-recessed design, 5 1/4 inch x 1 3/4 inch, in StoneGrey, Black, or White. Pull design to be in compliance

with the Florida Americans with Disabilities Accessibility

Implementation Act, October 1, 1993, Similar pulls by Mepla or Hafele may be acceptable pending Architectural approval.

3. Drawer Slides:
  - a. Standard Drawers: LSI Lab Series Slide, LH-376, self-closing design, White epoxy powder coated with positive in-stop, out-stop, and out-keeper to maintain drawer in 80% open position. Captive nylon rollers, front and rear. Minimum 100 lb. dynamic load rating at 50,000 cycles. Minimum 150 lb. static load rating.
  - b. File Drawers: Full extension, 3-part progressive opening slide, minimum 100 lb., zinc plated or epoxy coated at manufacturer's option.
  - c. File Drawer Accessory: Knappe & Vogt No. 476 follower and track assembly, or Pendaflex rack, as ARCHITECT selected.
  - d. Paper Storage Drawers: Full extension, 3-part progressive opening slide, minimum 100 lb., zinc plated or epoxy coated at manufacturer's option.
4. Adjustable Shelf Supports: To be LH-354 twin pin design with anti tip-up shelf restraints for both 3/4 inch and 1 inch shelves. Design to include keel to retard shelf slide-off, and slot for ability to mechanically attach shelf to clip. Load rating to be minimum 300 lbs. each support without failure, reference 1.04.D. Cabinet interior sides shall be flush, without shelf system permanent projection.
5. Wardrobe Rod: To be 1 1/16 inch rod, LH-362, supported by LH-363 flanges.
6. Locks: To be disc tumbler lock keyed alike and master keyed. Dull chrome finish.
  - a. Hinged doors and drawers, National Lock No. M4-7054
  - b. Sliding doors, 13/16 inch thick, National Lock No. M4-0057
  - c. 1/4 inch sliding glass doors, National Lock No. M2-0225
7. Catches: Catch to provide opening resistance in compliance with the Americans with Disabilities Act.
  - a. Provide one top-mounted magnetic catch for base, wall and tall cabinet door. Catch housing to be molded in White. LH-340ADA.
- G. Grommets: molded plastic or metal, 2" I.D. Field locate, cut holes and provide a grommet at each work station (countertop with open knee space) and 3" o.c. for continuous counters, or as instructed.

## 2.02 CONSTRUCTION

### A. Detailed Requirements for Cabinet Construction:

1. Sub-Base/Sink Cabinets:
  - a. Cabinet Sub-base: All are to be separate and continuous (no cabinet body sides-to-floor), of pressure treated solid stock or pressure treated exterior grade plywood with concealed fastening to cabinet bottom. Ladder-type construction of front, back and intermediates to form a secure and level platform to which cabinets attach. Unless indicated otherwise all bases are to be a full 4" height to accommodate installation of full 4" vinyl base by Division 9, without trimming.
  - b. Base cabinets at sink locations are to be fabricated of plywood construction (no particle board), to a minimum distance of 3'-0" each side of sink and to nearest adjacent cabinet division.
2. Cabinet Top and Bottom:
  - a. Solid sub-top to be furnished for all base and tall cabinets.
  - b. Wall cabinet bottoms and tops to be 1 inch thick.
3. Cabinet Ends:
  - a. Holes drilled for adjustable shelves 1 1/4 inch on center.
  - b. Exposed exterior cabinet ends to be laminated with high pressure plastic laminate.
4. Fixed And Adjustable Shelves:
  - a. Thickness: Behind doors, to be 3/4 inch to 27 inches wide. One inch shelving at 30 inch wide cabinet and over.
  - b. Thickness at all widths of open cabinets to be 1 inch.
5. Cabinet Backs:
  - a. Cabinet back to be fully housed into sides, top, and bottom, recessed 7/8 inch from cabinet rear. Rear, unexposed, side of back to receive continuous bead of hot melt adhesive at joint between back and sides/top/bottom.
  - b. Hang rails shall be glued to rear of cabinet back and mechanically

- fastened to cabinet sides. Provide minimum of 2 at base, 2 at wall, and 3 at tall cabinets.
- c. Exposed exterior backs to be high pressure plastic laminate balanced with high pressure cabinet liner.
  - d. Shop finish all cabinet backs with one coat aluminum paint, or equivalent.
6. Door And Drawer Fronts:
- a. Laminated door and drawer fronts to be 13/16 inch thick for all hinged and sliding doors. Drawer fronts and hinged doors are to overlay the cabinet body. Maintain a maximum 1/8 inch reveal between pairs of doors, between door and drawer front, or between multiple drawer fronts within the cabinet.
  - b. Stile and Rail doors to be 13/16 inch thick with full 1/4 inch plate glass. Available hinged or sliding. All exposed lite-opening edges to be trimmed and glazed with extruded vinyl glazing bead.
  - c. Frameless sliding glass doors to be 1/4 inch thick plate glass with ground and polished edges. Fitted with anodized aluminum shoes and nylon rollers.
7. Drawers:
- a. Drawer fronts shall be applied to separate drawer body component sub-front.
  - b. Drawer sides shall be dadoed and glued to receive front and back, machine squared and held under pressure while hot melt glued and pinned together.
  - c. Drawer bottom to be housed into front, sides, and back. Underside of drawer to receive continuous bead of hot melt adhesive at joint between bottom and back/sides/front for sealing and rigidity. Reinforce drawer bottoms with 1/2 inch x 4 inch front-to-back intermediate underbody stiffeners, hot melt glued and fastened. One at 24 inch, two at 36 inch, four at 48 inch.
  - d. Paper storage drawers fitted with full width hood at back.
  - e. All drawers shall have roller guides as specified.
8. Vertical and Horizontal Dividers: 3/4" stock with plastic laminate finish unless detailed otherwise on drawings, fully housed into sides, tops, bottoms and into one another as required. Attachment with plastic clips is not acceptable.
9. Door/Drawer Front Rail: Provide minimum 3/4 inch x 6 inch x full width cabinet body rails immediately behind all door/drawer and multiple drawer horizontal joints to maintain exact body dimensions, close off reveal, and be

locator for lock strikes.

B. Countertops and Backsplashes:

1. High pressure plastic laminate bonded to minimum 3/4" plywood core. Thickness as shown on plans. Underside to be properly balanced with heavy gauge backing sheet. Furnish countertops with edge treatment and design profile as shown on drawings. Provide tops in as long as practical continuous lengths. Provide field glued splines at joints. No joints closer than 24 inch either side of sink cutout.
2. Note that various locations require custom built tops such as extra wide units, varying height (stepped) tops, extended pass through, etc.

C. Workmanship:

1. All exposed exterior cabinet surfaces to be .030 inch high pressure laminate. Laminate surface/ balancing liner to core under controlled conditions, by approved and regulated laminating methods to assure a premium lamination. Natural-setting hybrid P.V.A. Type III water resistant adhesives that cure through chemical reaction, containing no health or environmentally hazardous ingredients, are required. Methods requiring heat are not allowed; "contact" methods of laminating are not allowed.
2. Cabinet parts shall be accurately machined and bored for premium grade quality joinery construction utilizing automatic machinery to insure consistent sizing of modular components. End panels shall be doweled to receive bottom and top.
3. Back panel shall be fully housed into, and recessed 7/8 inch from the back of cabinet sides, top, and bottom to insure rigidity and a fully closed cabinet. Cabinet back shall be shimmed from rear of body for tight interior fit.
4. Drawer bottom shall be fully housed into and recessed 1/2 inch up from the bottom of sides, back and subfront. Sides of drawer shall be fully dadoed to receive drawer back, locked in fully to subfront, fastened with glue and mechanical fasteners.
5. 3/4 inch thick hang rails shall be glued to backside and mechanically fastened to end panels of all wall, base, and tall cabinets for extra rigidity and to facilitate installation.
6. Rear of cabinet back and underside of drawer bottom joints to receive a continuous bead of hot melt adhesive to add to unit body strength and develop moisture and vermin seal.
7. All cases shall be square, plumb, and true.
8. Case body and drawer workmanship and quality of construction shall be further evidenced by Independent Testing Laboratory results as previously described.
9. Provide removable back panels and closure panels for plumbing access where shown on drawings.

D. Closures:

1. Provide full matching closure panels at tops of all tall and wall cabinets, or similar, to fully conceal void areas such as at end filler panels and/or corners where cabinets on adjacent walls meet. Secure in place in durable manner. All dead space voids are to be sealed.
2. Provide finished matching backs at island and peninsula locations.
3. Provide plastic laminate covered closures at exhaust ducts, etc. extending above wall cabinets to ceiling.

PART 3 - EXECUTION

3.01 COORDINATION

- A. Coordinate work of this Section with related work of other Sections as necessary to obtain proper installation of all items.
- B. Verify site dimensions of cabinet locations in building prior to fabrication.

3.02 INSTALLATION

- A. Storage and Protection: Casework shall be protected in transit. Store under cover in a ventilated building not exposed to extreme temperature and humidity changes. Do not store or install casework in building until concrete, masonry, and drywall/plaster work is dry.
- B. Installers: Install casework under the supervision of the manufacturer's representative with factory-trained mechanics certified by manufacturer.
- C. Workmanship:
  1. Erect casework straight, level and plumb and securely anchor in place. Scribe and closely fit to adjacent work. Cut and fit work around pipes, ducts, etc.
  2. Install all items complete and adjust all moving parts to operate properly.
  3. Leave surface clean and free from defects at time of final acceptance.
- D. Guarantee: All materials shall be guaranteed for a period of 5 years from manufacturer's defects and workmanship.
- E. Clean Up: Remove all cartons, debris, sawdust, scraps, etc., and leave spaces clean and all casework ready for OWNER'S use.

END OF SECTION 12 30 00

## **SECTION 05000 / METALS, GENERAL**

### **PART 1 - GENERAL**

#### **1.01 RELATED DOCUMENTS**

- A. Conform to Division 1, General Requirements, which applies to all sections of this Division 5. Provisions of this Section 05 00 00 also apply to all sections of this Division 5. The articles contained in this section may modify, delete or add to the provisions of the conditions of the Contract.

#### **1.02 FIELD MEASUREMENTS AND COORDINATION**

- A. Verify all field dimensions to insure close fit with work of other trades.
- B. Coordinate and install this division's work in proper sequence and cooperation with all other trades, to insure that total work is completed within contract time schedule.
- C. Verify extent of all items to be furnished including incidental items related to or necessary for a complete installation, their required shapes and sizes, and sequence with which these items are to be furnished and installed. Furnish to jobsite sorted, tagged, and grouped according to use.

#### **1.03 RELATED WORK IN OTHER DIVISIONS/SECTIONS**

Division 2:	Site Work
Division 3:	Concrete
Division 4:	Masonry
Division 6:	Wood and Plastic Laminates
Division 7:	Thermal and Moisture Protection
Division 8:	Doors and Windows
Division 9:	Finishes
Division 10:	Specialties
Division 13:	Special Construction

#### **1.04 APPLICABLE TECHNICAL CODES AND STANDARDS**

- A. Conform to applicable provisions of latest editions of following reference codes, except as specifically modified hereinafter.
  - 1. American Institute of Steel Construction "Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings".
  - 2. American Institute of Steel Construction "Specification For The Design of Cold Formed Steel Structural Members".
  - 3. American Welding Society - D1.1 "Structural Welding Code".
  - 4. American Welding Society - D1.3 "Structural Welding Code - Sheet Steel".

5. Steel Structures Painting Council.
6. Metal Roof Deck Technical Institute Specification and Load Tables for Three-Span Ribbed Deck, latest edition.
7. Steel Deck Institute, "Design Manual For Floor Decks and Roof Decks".
8. Furnish affidavit to ARCHITECT certifying materials delivered to jobsite meet requirements specified. Certification does not relieve CONTRACTOR of responsibility of complying with all requirements herein.

#### 1.05 SPECIAL MATERIAL DELIVERY AND HANDLING INSTRUCTIONS

- A. Protect all materials from weather, prior to and during fabrication, and before erection. Do not store materials directly on ground at any time. Insure that all abrasions in shop painted work are immediately painted with identical prime paint to insure no rusting of steel work.

- 1.06 Submit shop drawings in accordance with Section 01330/Shop Drawings Requirements of this specification.

### PART 2 - PRODUCTS

#### 2.01 STEEL ITEMS

- A. Structural Steel Beams, Plates, Channels, Angles and Bars: conform to ASTM A992, "Structural Steel", latest edition.
- B. Steel For Galvanized Metal Deck Units - ASTM A653, Grade A.
- C. Galvanizing - ASTM A525, G60.
- D. Round, Square and Rectangular Steel Tubing: conform to ASTM A-500, "Hot-Formed Welded and Seamless Carbon Steel Structural Tubing", latest edition.
- E. Sheet Steel: prime grade cold-rolled steel, properly annealed, process leveled, with smooth clean surfaces.
- F. Bolts, Nuts and Washers: conform to ASTM A-307, "Low-Carbon Steel Externally and Internally Threaded Standard Fasteners", latest edition. ASTM A-325, "High Strength Bolts for Structural Steel Joints", including suitable nuts and plain hardened washers.
- G. Anchors, Expansion Bolts and Shields and Strap: furnish and install all necessary

items required for this contract which in judgement of ARCHITECT are required, whether or not each item is specifically described in contract documents. Expansion bolts and shields must be galvanized or of non-ferrous metals, sized suitable for work to be anchored, and used where built-in place anchors are not practicable. All bolts furnished with nuts and washers. Materials normally to be identical to material being fastened.

- H. Welding Electrodes: conform to ASTM A-233, Type E 70XX electrodes, or otherwise required for joint condition.
- I. Other Steel Items: conform to ASTM A-36, "Steel for Bridges and Buildings", latest edition.

## 2.02 PRIMER PAINT

- A. Zinc chromate, iron oxide, rust inhibitive metal primer, meeting SSPC P-15-68T, Type I and TT-P-63C.
- B. Electrolysis Prevention Between Dissimilar Metals: aluminum-pigmented asphalt paint produced by regionally recognized producer.
- C. Primer at spray-applied fire protection locations shall have been tested and reported by Underwriters Laboratories to be in compatible compliance.

## PART 3 - EXECUTION

- 3.01 Make and erect all work square, plumb, straight and true. Fit tightly, firm, and secure against designed stresses and weights of supported materials and building occupants.
- 3.02 Furnish all supplementary parts necessary to complete each item, even though such parts are not definitely shown or specified. Include all anchors, sockets, pipe sleeves, tabs, etc., for securing work.
- 3.03 FABRICATION
  - A. Insure all material has all surfaces cleaned per the AISC Code requirements. Remove all dirt, rust, grease, mill scale, etc. Prior to layout or being worked in any way, carefully inspect all pieces for straightness and level; and straighten and level without impairment of strength, all pieces requiring same.  
Neatly and accurately shear, clip, cut, drill, punch and/or weld all portions of work, whether or not normally exposed to view.
  - B. Accurately fabricate all members to insure that all parts fit together on jobsite without jobsite cutting.
  - C. Accurately punch and space all bolt holes. Size and align for firm connection and

bearing.

- D. Conform all steel welding to applicable provisions of referenced code by certified welders.
- E. After fabrication is complete, clean all surfaces of rust, scale, dirt and grease.
  - 1. Shop fabrication errors shall not be corrected in the field without prior written approval of the ARCHITECT and OWNER.
  - 2. The ARCHITECT and OWNER reserves the right to have his representative inspect the fabrication or erection at any stage of completion.
  - 3. The ARCHITECT'S and OWNER'S inspectors in no way will relieve the CONTRACTOR of his responsibility in meeting the codes and specifications.

### 3.04 ERECTION

- A. Provide all temporary bracing required for proper alignment and stability of all steel members during erection.
- B. Temporary bracing and/or shoring shall remain as long as necessary for the safety and stability of the structure.

### 3.05 SHOP PAINTING

- A. Prior to painting, all steel is to be cleaned to a SSPC-SP3 surface. Deliver all structural steel to project fully coated with specified primer paint, except:
  - 1. Areas Not to Receive Paint:
    - a. Areas within 2 inches of joints which are to be welded.
    - b. All non-ferrous surfaces not subject to electrolytic action.
    - c. All items to be embedded in concrete.
- C. Electrolysis Prevention - Dissimilar Metals and Metals In Contact With Masonry: apply one (1) coat of aluminum pigmented asphalt paint on contact surfaces of metal in contact with dissimilar metals.

### 3.06 JOB SITE TOUCH-UP PAINTING

- A. Clean and properly prepare all exposed surfaces after welding and paint with approved primer all welded and burned surfaces.
- B. Clean and repaint all shop painted areas after work is erected which are still accessible and which have been abraded sufficient to expose metal.
- C. All cut, drilled, burned or welded galvanized and/or painted surfaces shall be primed with approved primer.

### 3.07 HANDLING AND MARKING

- A. Clearly and neatly mark all members for identification and erection sequence. Bundle members as CONTRACTOR requires for erection. Deliver to jobsite without damage to members. Repair or refabricate all damaged members.

### 3.08 WELDING

- A. Only certified welders are to be employed on project. Submit current certificates, not over 2 years old. Welders to be qualified in accordance with Section 5 of the AWS D1.1 code, latest edition.
  - 1. It should be noted that thin gauge metals (roof trusses, decks and structural studs) are included in project. Special care is to be taken to insure proper welding techniques are exercised with these materials.

END OF SECTION 05 00 00

## **SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION**

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. Coordination Drawings.
  - 2. Administrative and supervisory personnel.
  - 3. Project meetings.
  - 4. Requests for Interpretation (RFIs).
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor.
- C. Related Sections include the following:
  - 1. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's Construction Schedule.
  - 2. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
  - 3. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

#### 1.3 DEFINITIONS

- A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

#### 1.4 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

- B. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its operations with operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
  - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  - 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
  - 3. Make adequate provisions to accommodate items scheduled for later installation.
  - 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
  
- C. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
  - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
  
- D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
  - 1. Preparation of Contractor's Construction Schedule.
  - 2. Preparation of the Schedule of Values.
  - 3. Installation and removal of temporary facilities and controls.
  - 4. Delivery and processing of submittals.
  - 5. Progress meetings.
  - 6. Preinstallation conferences.
  - 7. Project closeout activities.
  - 8. Startup and adjustment of systems.
  - 9. Project closeout activities.
  
- E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
  - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

## 1.5 SUBMITTALS

- A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
    - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
    - b. Indicate required installation sequences.
    - c. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
  2. Sheet Size: At least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 40 inches (750 by 1000 mm).
  3. Number of Copies: Submit four opaque copies of each submittal. Architect, through Construction Manager, will return two copies.
    - a. Submit five copies where Coordination Drawings are required for operation and maintenance manuals. Architect and Construction Manager will retain two copies; remainder will be returned. Mark up and retain one returned copy as a Project Record Drawing.
  4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.
- B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

## 1.6 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.
1. Include special personnel required for coordination of operations with other contractors.

## 1.7 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
  - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
  - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
  - 3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.
  
- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner, Construction Manager, and Architect, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
  - 1. Attendees: Authorized representatives of Owner, Construction Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  - 2. Agenda: Discuss items of significance that could affect progress, including the following:
    - a. Tentative construction schedule.
    - b. Phasing.
    - c. Critical work sequencing and long-lead items.
    - d. Designation of key personnel and their duties.
    - e. Procedures for processing field decisions and Change Orders.
    - f. Procedures for RFIs.
    - g. Procedures for testing and inspecting.
    - h. Procedures for processing Applications for Payment.
    - i. Distribution of the Contract Documents.
    - j. Submittal procedures.
    - k. LEED requirements.
    - l. Preparation of Record Documents.
    - m. Use of the premises and existing building.
    - n. Work restrictions.
    - o. Owner's occupancy requirements.
    - p. Responsibility for temporary facilities and controls.
    - q. Construction waste management and recycling.
    - r. Parking availability.
    - s. Office, work, and storage areas.
    - t. Equipment deliveries and priorities.
    - u. First aid.
    - v. Security.

- w. Progress cleaning.
  - x. Working hours.
3. Minutes: Construction Manager will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect and Construction Manager of scheduled meeting dates.
  - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    - a. The Contract Documents.
    - b. Options.
    - c. Related RFIs.
    - d. Related Change Orders.
    - e. Purchases.
    - f. Deliveries.
    - g. Submittals.
    - h. Review of mockups.
    - i. Possible conflicts.
    - j. Compatibility problems.
    - k. Time schedules.
    - l. Weather limitations.
    - m. Manufacturer's written recommendations.
    - n. Warranty requirements.
    - o. Compatibility of materials.
    - p. Acceptability of substrates.
    - q. Temporary facilities and controls.
    - r. Space and access limitations.
    - s. Regulations of authorities having jurisdiction.
    - t. Testing and inspecting requirements.
    - u. Installation procedures.
    - v. Coordination with other work.
    - w. Required performance results.
    - x. Protection of adjacent work.
    - y. Protection of construction and personnel.
  - 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  - 4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
  - 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

- D. Progress Meetings: Conduct progress meetings at weekly intervals. Coordinate dates of meetings with preparation of payment requests.
1. Attendees: In addition to representatives of Owner, Construction Manager, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
      - 1) Review schedule for next period.
    - b. Review present and future needs of each entity present, including the following:
      - 1) Interface requirements.
      - 2) Sequence of operations.
      - 3) Status of submittals.
      - 4) Deliveries.
      - 5) Off-site fabrication.
      - 6) Access.
      - 7) Site utilization.
      - 8) Temporary facilities and controls.
      - 9) Work hours.
      - 10) Hazards and risks.
      - 11) Progress cleaning.
      - 12) Quality and work standards.
      - 13) Status of correction of deficient items.
      - 14) Field observations.
      - 15) RFIs.
      - 16) Status of proposal requests.
      - 17) Pending changes.
      - 18) Status of Change Orders.
      - 19) Pending claims and disputes.
      - 20) Documentation of information for payment requests.
  3. Minutes: Construction Manager will record distribute the meeting minutes.
  4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.

- a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
- E. Coordination Meetings: Conduct Project coordination meetings at weekly intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
1. Attendees: In addition to representatives of Owner, Construction Manager, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to Combined Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    - b. Schedule Updating: Revise Combined Contractor's Construction Schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
    - c. Review present and future needs of each contractor present, including the following:
      - 1) Interface requirements.
      - 2) Sequence of operations.
      - 3) Status of submittals.
      - 4) Deliveries.
      - 5) Off-site fabrication.
      - 6) Access.
      - 7) Site utilization.
      - 8) Temporary facilities and controls.
      - 9) Work hours.
      - 10) Hazards and risks.
      - 11) Progress cleaning.
      - 12) Quality and work standards.
      - 13) Change Orders.

3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

#### 1.8 REQUESTS FOR INTERPRETATION (RFIs)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
  1. RFIs shall originate with Construction Manager. RFIs submitted by entities other than Construction Manager will be returned with no response.
  2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
  1. Project name.
  2. Date.
  3. Name of Contractor.
  4. Name of Architect and Construction Manager.
  5. RFI number, numbered sequentially.
  6. Specification Section number and title and related paragraphs, as appropriate.
  7. Drawing number and detail references, as appropriate.
  8. Field dimensions and conditions, as appropriate.
  9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  10. Contractor's signature.
  11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
    - a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.
- C. Hard-Copy RFIs: CSI Form 13.2A.
  1. Identify each page of attachments with the RFI number and sequential page number.
- D. Software-Generated RFIs: Software-generated form with substantially the same content as indicated above.
  1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- E. Architect's and Construction Manager's Action: Architect and Construction Manager will review each RFI, determine action required, and return it. Allow seven working

days for Architect's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.

1. The following RFIs will be returned without action:
  - a. Requests for approval of submittals.
  - b. Requests for approval of substitutions.
  - c. Requests for coordination information already indicated in the Contract Documents.
  - d. Requests for adjustments in the Contract Time or the Contract Sum.
  - e. Requests for interpretation of Architect's actions on submittals.
  - f. Incomplete RFIs or RFIs with numerous errors.
2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal.
  - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect and Construction Manager in writing within 10 days of receipt of the RFI response.
- F. On receipt of Architect's and Construction Manager's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect and Construction Manager within seven days if Contractor disagrees with response.
- G. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Use CSI Log Form 13.2B and include the following:
  1. Project name.
  2. Name and address of Contractor.
  3. Name and address of Architect and Construction Manager.
  4. RFI number including RFIs that were dropped and not submitted.
  5. RFI description.
  6. Date the RFI was submitted.
  7. Date Architect's and Construction Manager's response was received.
  8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
  9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 00

## **SECTION 01 32 00 - CONSTRUCTION PROGRESS DOCUMENTATION**

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
  - 1. Contractor's Construction Schedule.
  - 2. Submittals Schedule.
  - 3. Daily construction reports.
  - 4. Field condition reports.

#### 1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
  - 1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
  - 2. Predecessor Activity: An activity that precedes another activity in the network.
  - 3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Float: The measure of leeway in starting and completing an activity.
  - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
- E. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.
- F. Major Area: A story of construction, a separate building, or a similar significant construction element.

### 1.3 SUBMITTALS

- A. Submittals Schedule: Submit five copies of schedule. Arrange the following information in a tabular format:
  - 1. Scheduled date for first submittal.
  - 2. Specification Section number and title.
  - 3. Submittal category (action or informational).
  - 4. Name of subcontractor.
  - 5. Description of the Work covered.
  - 6. Scheduled date for Architect's final release or approval.
- B. Contractor's Construction Schedule: Submit two opaque copies of initial schedule, large enough to show entire schedule for entire construction period.
  - 1. Submit an electronic copy of schedule, using software indicated, on CD-R, and labeled to comply with requirements for submittals. Include type of schedule (Initial or Updated) and date on label.
- C. CPM Reports: Concurrent with CPM schedule, submit three copies of each of the following computer-generated reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
  - 1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
  - 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
  - 3. Total Float Report: List of all activities sorted in ascending order of total float.
- D. Daily Construction Reports: Submit two copies at monthly intervals.
- E. Field Condition Reports: Submit two copies at time of discovery of differing conditions.

### 1.4 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
  - 1. Secure time commitments for performing critical elements of the Work from parties involved.
  - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

## PART 2 - PRODUCTS

### 2.1 SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
  - 1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
  - 2. Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

### 2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for commencement of the Work to date of Final Completion.
  - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
  - 1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Owner.
  - 2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
  - 3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
  - 4. Startup and Testing Time: Include not less than 10 days for startup and testing.
  - 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
  - 1. Phasing: Arrange list of activities on schedule by phase.
  - 2. Work under More Than One Contract: Include a separate activity for each contract.

3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
  4. Work Restrictions: Show the effect of the following items on the schedule:
    - a. Coordination with existing construction.
    - b. Limitations of continued occupancies.
    - c. Uninterruptible services.
    - d. Partial occupancy before Substantial Completion.
    - e. Use of premises restrictions.
    - f. Provisions for future construction.
    - g. Seasonal variations.
    - h. Environmental control.
  5. Work Stages: Indicate important stages of construction for each major portion of the Work.
  6. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion
- D. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.

## 2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

- A. General: Prepare network diagrams using AON (activity-on-node) format.
- B. Preliminary Network Diagram: Submit diagram within 14 days of date established for the Notice to Proceed. Outline significant construction activities for the first 60 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.
- C. CPM Schedule: Prepare Contractor's Construction Schedule using a computerized, time-scaled CPM network analysis diagram for the Work.
  1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 30 days after date established for the Notice to Proceed.
    - a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Architect's approval of the schedule.
  2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
  3. Use "one workday" as the unit of time. Include list of nonworking days and holidays incorporated into the schedule.

- D. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the preliminary network diagram, prepare a skeleton network to identify probable critical paths.
1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
    - a. Preparation and processing of submittals.
    - b. Mobilization and demobilization.
    - c. Purchase of materials.
    - d. Delivery.
    - e. Fabrication.
    - f. Utility interruptions.
    - g. Installation.
    - h. Work by Owner that may affect or be affected by Contractor's activities.
    - i. Testing and commissioning.
  2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
  3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
  4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
    - a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.
- E. Initial Issue of Schedule: Prepare initial network diagram from a list of straight "early start-total float" sort. Identify critical activities. Prepare tabulated reports showing the following:
1. Contractor or subcontractor and the Work or activity.
  2. Description of activity.
  3. Principal events of activity.
  4. Immediate preceding and succeeding activities.
  5. Early and late start dates.
  6. Early and late finish dates.
  7. Activity duration in workdays.
  8. Total float or slack time.
  9. Average size of workforce.
- F. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
1. Identification of activities that have changed.
  2. Changes in early and late start dates.
  3. Changes in early and late finish dates.

4. Changes in activity durations in workdays.
5. Changes in the critical path.
6. Changes in total float or slack time.
7. Changes in the Contract Time.

## 2.4 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
  1. List of subcontractors at Project site.
  2. Equipment at Project site.
  3. Material deliveries.
  4. High and low temperatures and general weather conditions.
  5. Accidents.
  6. Stoppages, delays, shortages, and losses.
  7. Meter readings and similar recordings.
  8. Orders and requests of authorities having jurisdiction.
  9. Services connected and disconnected.
  10. Equipment or system tests and startups.
- B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for interpretation on CSI Form 13.2A. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

## PART 3 - EXECUTION

### 3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
  1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
  2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
  3. As the Work progresses, indicate Actual Completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Architect Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
  1. Post copies in Project meeting rooms and temporary field offices.

2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 01 32 00

## **SECTION 01 33 00 - SUBMITTAL PROCEDURES**

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Sections include the following:
  - 1. Division 01 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes and for submitting Coordination Drawings.
  - 2. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule.
  - 3. Division 01 Section "Quality Requirements" for submitting test and inspection reports and for mockup requirements.
  - 4. Division 01 Section "Closeout Procedures" for submitting warranties.
  - 5. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
  - 6. Division 01 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
  - 7. Division 01 Section "Demonstration and Training" for submitting videotapes of demonstration of equipment and training of Owner's personnel.
  - 8. Divisions 02 through 12 Sections for specific requirements for submittals in those Sections.

#### 1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Architect's and Contractor's responsive action.
- B. Informational Submittals: Written information that does not require Architect's and Contractor's responsive action. Submittals may be rejected for not complying with requirements.

#### 1.4 SUBMITTAL PROCEDURES

- A. General: Electronic copies of CAD Drawings of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Architect and Contractor reserve the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Submittals Schedule: Comply with requirements in Division 01 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.
- D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
  - 1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Contractor will advise Sub-Contractor when a submittal being processed must be delayed for coordination.
  - 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
  - 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
  - 4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
- E. Identification: Place a permanent label or title block on each submittal for identification.
  - 1. Indicate name of firm or entity that prepared each submittal on label or title block.
  - 2. Provide a space approximately 6 by 8 inches (150 by 200 mm on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
  - 3. Include the following information on label for processing and recording action taken:
    - a. Project name.
    - b. Date.
    - c. Name and address of Architect and Contractor.

- d. Name and address of Contractor.
  - e. Name and address of subcontractor.
  - f. Name and address of supplier.
  - g. Name of manufacturer.
  - h. Submittal number or other unique identifier, including revision identifier.
    - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
  - i. Number and title of appropriate Specification Section.
  - j. Drawing number and detail references, as appropriate.
  - k. Location(s) where product is to be installed, as appropriate.
  - l. Other necessary identification.
- F. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.
- G. Additional Copies: Unless additional copies are required for final submittal, and unless Architect or Owner observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
- 1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect and Contractor.
  - 2. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.
- H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect and Contractor will return submittals, without review, received from sources other than Sub-Contractor.
- 1. Transmittal Form: Use AIA Document G810 or CSI Form 12.1A.
  - 2. Transmittal Form: Provide locations on form for the following information:
    - a. Project name.
    - b. Date.
    - c. Destination (To:).
    - d. Source (From:).
    - e. Names of subcontractor, manufacturer, and supplier.
    - f. Category and type of submittal.
    - g. Submittal purpose and description.
    - h. Specification Section number and title.
    - i. Drawing number and detail references, as appropriate.
    - j. Transmittal number, numbered consecutively.
    - k. Submittal and transmittal distribution record.
    - l. Remarks.
    - m. Signature of transmitter.

3. On an attached separate sheet, prepared on Sub-Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect and Contractor on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.
- I. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
  1. Note date and content of previous submittal.
  2. Note date and content of revision in label or title block and clearly indicate extent of revision.
  3. Resubmit submittals until they are marked approved from Architect and Construction Manager.
- J. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- K. Use for Construction: Use only final submittals with mark indicating approval notation from Architect's and Contractor's action stamp.

## PART 2 - PRODUCTS

### 2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
  1. Submit electronic submittals directly to extranet specifically established for Project.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
  1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
  2. Mark each copy of each submittal to show which products and options are applicable.
  3. Include the following information, as applicable:
    - a. Manufacturer's written recommendations.
    - b. Manufacturer's product specifications.
    - c. Manufacturer's installation instructions.
    - d. Standard color charts.
    - e. Manufacturer's catalog cuts.
    - f. Wiring diagrams showing factory-installed wiring.
    - g. Printed performance curves.
    - h. Operational range diagrams.

- i. Mill reports.
    - j. Standard product operation and maintenance manuals.
    - k. Compliance with specified referenced standards.
    - l. Testing by recognized testing agency.
    - m. Application of testing agency labels and seals.
    - n. Notation of coordination requirements.
  4. Submit Product Data before or concurrent with Samples.
  5. Number of Copies: Submit five copies of Product Data, unless otherwise indicated. Architect, through Contractor, will return three copies. Mark up and retain one returned copy as a Project Record Document.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
  1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Dimensions.
    - b. Identification of products.
    - c. Fabrication and installation drawings.
    - d. Roughing-in and setting diagrams.
    - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
    - f. Shopwork manufacturing instructions.
    - g. Templates and patterns.
    - h. Schedules.
    - i. Design calculations.
    - j. Compliance with specified standards.
    - k. Notation of coordination requirements.
    - l. Notation of dimensions established by field measurement.
    - m. Relationship to adjoining construction clearly indicated.
    - n. Seal and signature of professional engineer if specified.
    - o. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
  2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 40 inches (750 by 1000 mm).
  3. Submit five copies where copies are required for operation and maintenance manuals. Architect and Contractor will retain two copies; remainder will be returned. Mark up and retain one returned copy as a Project Record Drawing.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
  1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

2. Identification: Attach label on unexposed side of Samples that includes the following:
    - a. Generic description of Sample.
    - b. Product name and name of manufacturer.
    - c. Sample source.
    - d. Number and title of appropriate Specification Section.
  3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
    - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
  4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
    - a. Number of Samples: Submit three full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect, through Contractor will return submittal with options selected.
  5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
    - a. Number of Samples: Submit four sets of Samples. Architect and Contractor will retain three. Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a Project Record Sample.
      - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
      - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product.
  2. Number and name of room or space.
  3. Location within room or space.
  4. Number of Copies: Submit four copies of product schedule or list, unless otherwise indicated. Architect, through Contractor will return two copies.
    - a. Mark up and retain one returned copy as a Project Record Document.
- F. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation" for Construction Manager's action.
- G. Submittals Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- H. Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."
- I. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use CSI Form 1.5A. Include the following information in tabular form:
1. Name, address, and telephone number of entity performing subcontract or supplying products.
  2. Number and title of related Specification Section(s) covered by subcontract.
  3. Drawing number and detail references, as appropriate, covered by subcontract.
  4. Number of Copies: Submit three copies of subcontractor list, unless otherwise indicated. Architect, through Contractor will return two copies.
    - a. Mark up and retain one returned copy as a Project Record Document.

## 2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect and Contractor will not return copies.
  2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
  3. Test and Inspection Reports: Comply with requirements specified in Division 01 Section "Quality Requirements."
- B. Coordination Drawings: Comply with requirements specified in Division 01 Section "Project Management and Coordination."
- C. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."

- D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- H. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- J. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- L. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
  - 1. Name of evaluation organization.
  - 2. Date of evaluation.
  - 3. Time period when report is in effect.
  - 4. Product and manufacturers' names.
  - 5. Description of product.
  - 6. Test procedures and results.
  - 7. Limitations of use.
- M. Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements."
- N. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed

before installation of product, for compliance with performance requirements in the Contract Documents.

- O. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- P. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- Q. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- R. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- S. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
  - 1. Preparation of substrates.
  - 2. Required substrate tolerances.
  - 3. Sequence of installation or erection.
  - 4. Required installation tolerances.
  - 5. Required adjustments.
  - 6. Recommendations for cleaning and protection.
- T. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
  - 1. Name, address, and telephone number of factory-authorized service representative making report.
  - 2. Statement on condition of substrates and their acceptability for installation of product.
  - 3. Statement that products at Project site comply with requirements.
  - 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  - 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  - 6. Other required items indicated in individual Specification Sections.

7. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or Statement whether conditions, products, and installation will affect warranty.
- U. bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- V. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to Architect.
  1. Architect will not review submittals that include MSDSs and will return the entire submittal for resubmittal.

## 2.3 DELEGATED DESIGN

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit three copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
  1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

## PART 3 - EXECUTION

### 3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect and Contractor.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S AND CONTRACTOR'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect and Contractor will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect and Contractor will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.
- C. Informational Submittals: Architect and Contractor will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect and Contractor will forward each submittal to appropriate party.
- D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 01 33 00

## **SECTION 01 40 00 - QUALITY REQUIREMENTS**

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, Construction Manager, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Sections include the following:
  - 1. Division 01 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections.
  - 2. Division 01 Section "Cutting and Patching" for repair and restoration of construction disturbed by testing and inspecting activities.
  - 3. Divisions 02 through 12 Sections for specific test and inspection requirements.

#### 1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect or Construction Manager.

- C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.
- D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.
- E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- F. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
- G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to trades people of the corresponding generic name.
- K. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

#### 1.4 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

## 1.5 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
  - 1. Specification Section number and title.
  - 2. Description of test and inspection.
  - 3. Identification of applicable standards.
  - 4. Identification of test and inspection methods.
  - 5. Number of tests and inspections required.
  - 6. Time schedule or time span for tests and inspections.
  - 7. Entity responsible for performing tests and inspections.
  - 8. Requirements for obtaining samples.
  - 9. Unique characteristics of each quality-control service.
- C. Reports: Prepare and submit certified written reports that include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.
  - 6. Description of the Work and test and inspection method.
  - 7. Identification of product and Specification Section.
  - 8. Complete test or inspection data.
  - 9. Test and inspection results and an interpretation of test results.
  - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  - 12. Name and signature of laboratory inspector.
  - 13. Recommendations on retesting and re-inspecting.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

## 1.6 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.
- F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
  - 1. Requirement for specialists shall not supersede building codes and regulations governing the Work.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
  - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:
  - a. Provide test specimens representative of proposed products and construction.
  - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
  - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
  - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
  - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
  - f. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.
2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, through Construction Manager, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect or Construction Manager.
2. Notify Architect and Construction Manager seven days in advance of dates and times when mockups will be constructed.
3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain Architect's and Construction Manager's approval of mockups before starting work, fabrication, or construction.
  - a. Allow seven days for initial review and each re-review of each mockup.
5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
6. Demolish and remove mockups when directed, unless otherwise indicated.

K. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 02 through 49.

## 1.7 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
  2. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
  3. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.
- B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
    - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
  2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
  3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."
- D. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. Testing Agency Responsibilities: Cooperate with Architect, Construction Manager, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect, Contractor, & Owner promptly of irregularities or deficiencies observed in the Work during performance of its services.
  2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.

5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  6. Do not perform any duties of Contractor.
- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
  2. Incidental labor and facilities necessary to facilitate tests and inspections.
  3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  4. Facilities for storage and field curing of test samples.
  5. Delivery of samples to testing agencies.
  6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for the Notice to Proceed.
1. Distribution: Distribute schedule to Owner, Architect & Contractor, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

## 1.8 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified testing inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows: Building Threshold Inspections
1. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
  2. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect and copy to Contractor and to authorities having jurisdiction.
  3. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
  4. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
  5. Retesting and re-inspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Prepare a record of tests and inspections. Include the following:
  - 1. Date test or inspection was conducted.
  - 2. Description of the Work tested or inspected.
  - 3. Date test or inspection results were transmitted to Architect.
  - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect's and Owner's reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  - 1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
  - 2. Comply with the Contract Document requirements for Division 01 Section "Cutting and Patching."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

## **SECTION 01 42 00 - REFERENCES**

### PART 1 - GENERAL

#### 1.1 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

#### 1.2 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
  - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

### 1.3 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Thomson Gale's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."
- B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

AA	Aluminum Association, Inc. (The)
AAADM	American Association of Automatic Door Manufacturers
AABC	Associated Air Balance Council
AAMA	American Architectural Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists (The)
ABAA	Air Barrier Association of America
ABMA	American Bearing Manufacturers Association
ACI	ACI International (American Concrete Institute)
ACPA	American Concrete Pipe Association
AEIC	Association of Edison Illuminating Companies, Inc. (The)
AF&PA	American Forest & Paper Association
AGA	American Gas Association
AGC	Associated General Contractors of America (The)
AHA	American Hardboard Association (Now part of CPA)
AHAM	Association of Home Appliance Manufacturers

AI	Asphalt Institute
AIA	American Institute of Architects (The)
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALCA	Associated Landscape Contractors of America (Now PLANET - Professional Landcare Network)
ALSC	American Lumber Standard Committee, Incorporated
AMCA	Air Movement and Control Association International, Inc.
ANSI	American National Standards Institute
AOSA	Association of Official Seed Analysts, Inc.
APA	Architectural Precast Association
APA	APA - The Engineered Wood Association
APA EWS	APA - The Engineered Wood Association; Engineered Wood Systems
API	American Petroleum Institute
ARI	Air-Conditioning & Refrigeration Institute
ARMA	Asphalt Roofing Manufacturers Association
ASCE	American Society of Civil Engineers
ASCE/SEI	American Society of Civil Engineers/Structural Engineering Institute (See ASCE)
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASME	ASME International (The American Society of Mechanical Engineers International)
ASSE	American Society of Sanitary Engineering
ASTM	ASTM International (American Society for Testing and Materials International)
AWCI	AWCI International (Association of the Wall and Ceiling Industry International)

AWCMA	American Window Covering Manufacturers Association (Now WCSC)
AWI	Architectural Woodwork Institute
AWPA	American Wood-Preservers' Association
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Industry Association (The)
BICSI	BICSI
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International)
BISSC	Baking Industry Sanitation Standards Committee
CCC	Carpet Cushion Council
CDA	Copper Development Association
CEA	Canadian Electricity Association
CFFA	Chemical Fabrics & Film Association, Inc.
CGA	Compressed Gas Association
CIMA	Cellulose Insulation Manufacturers Association
CISCA	Ceilings & Interior Systems Construction Association
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturers Institute
CRRC	Cool Roof Rating Council
CPA	Composite Panel Association
CPPA	Corrugated Polyethylene Pipe Association
CRI	Carpet & Rug Institute (The)
CRSI	Concrete Reinforcing Steel Institute

CSA	Canadian Standards Association
CSA	CSA International (Formerly: IAS - International Approval Services)
CSI	Cast Stone Institute
CSI	Construction Specifications Institute (The)
CSSB	Cedar Shake & Shingle Bureau
CTI	Cooling Technology Institute (Formerly: Cooling Tower Institute)
DHI	Door and Hardware Institute
EIA	Electronic Industries Alliance
EIMA	EIFS Industry Members Association
EJCDC	Engineers Joint Contract Documents Committee
EJMA	Expansion Joint Manufacturers Association, Inc.
ESD	ESD Association
FIBA	Federation Internationale de Basketball (The International Basketball Federation)
FIVB	Federation Internationale de Volleyball (The International Volleyball Federation)
FM Approvals	FM Approvals
FM Global	FM Global (Formerly: FMG - FM Global)
FMRC	Factory Mutual Research (Now FM Global)
FRSA	Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.
FSA	Fluid Sealing Association
FSC	Forest Stewardship Council
GA	Gypsum Association
GANA	Glass Association of North America
GRI	(Now GSI)

GS	Green Seal
GSI	Geosynthetic Institute
HI	Hydraulic Institute
HI	Hydronics Institute
HMMA	Hollow Metal Manufacturers Association (Part of NAAMM)
HPVA	Hardwood Plywood & Veneer Association
HPW	H. P. White Laboratory, Inc.
IAS	International Approval Services (Now CSA International)
IBF	International Badminton Federation
ICEA	Insulated Cable Engineers Association, Inc.
ICRI	International Concrete Repair Institute, Inc.
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The)
IESNA	Illuminating Engineering Society of North America
IEST	Institute of Environmental Sciences and Technology
IGCC	Insulating Glass Certification Council
IGMA	Insulating Glass Manufacturers Alliance
ILI	Indiana Limestone Institute of America, Inc.
ISO	International Organization for Standardization
ISSFA	International Solid Surface Fabricators Association
ITS	Intertek Testing Service NA
ITU	International Telecommunication Union
KCMA	Kitchen Cabinet Manufacturers Association
LMA	Laminating Materials Association (Now part of CPA)

LPI	Lightning Protection Institute
MBMA	Metal Building Manufacturers Association
MFMA	Maple Flooring Manufacturers Association, Inc.
MFMA	Metal Framing Manufacturers Association, Inc.
MH	Material Handling (Now MHIA)
MHIA	Material Handling Industry of America
MIA	Marble Institute of America
MPI	Master Painters Institute
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc.
NAAMM	National Association of Architectural Metal Manufacturers
NACE	NACE International (National Association of Corrosion Engineers International)
NADCA	National Air Duct Cleaners Association
NAGWS	National Association for Girls and Women in Sport
NAIMA	North American Insulation Manufacturers Association
NBGQA	National Building Granite Quarries Association, Inc.
NCAA	National Collegiate Athletic Association (The)
NCMA	National Concrete Masonry Association
NCPI	National Clay Pipe Institute
NCTA	National Cable & Telecommunications Association
NEBB	National Environmental Balancing Bureau
NECA	National Electrical Contractors Association
NeLMA	Northeastern Lumber Manufacturers' Association
NEMA	National Electrical Manufacturers Association
NETA	InterNational Electrical Testing Association

NFHS	National Federation of State High School Associations
NFPA	NFPA (National Fire Protection Association)
NFRC	National Fenestration Rating Council
NGA	National Glass Association
NHLA	National Hardwood Lumber Association
NLGA	National Lumber Grades Authority
NOFMA	NOFMA: The Wood Flooring Manufacturers Association (Formerly: National Oak Flooring Manufacturers Association)
NRCA	National Roofing Contractors Association
NRMCA	National Ready Mixed Concrete Association
NSF	NSF International (National Sanitation Foundation International)
NSSGA	National Stone, Sand & Gravel Association
NTMA	National Terrazzo & Mosaic Association, Inc. (The)
NTRMA	National Tile Roofing Manufacturers Association (Now TRI)
NWWDA	National Wood Window and Door Association (Now WDMA)
OPL	Omega Point Laboratories, Inc. (Now ITS)
PCI	Precast/Prestressed Concrete Institute
PDCA	Painting & Decorating Contractors of America
PDI	Plumbing & Drainage Institute
PGI	PVC Geomembrane Institute
PLANET	Professional Landcare Network (Formerly: ACLA - Associated Landscape Contractors of America)
PTI	Post-Tensioning Institute
RCSC	Research Council on Structural Connections

RFCI	Resilient Floor Covering Institute
RIS	Redwood Inspection Service
SAE	SAE International
SDI	Steel Deck Institute
SDI	Steel Door Institute
SEFA	Scientific Equipment and Furniture Association
SEI/ASCE	Structural Engineering Institute/American Society of Civil Engineers (See ASCE)
SGCC	Safety Glazing Certification Council
SIA	Security Industry Association
SIGMA	Sealed Insulating Glass Manufacturers Association (Now IGMA)
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SMPTE	Society of Motion Picture and Television Engineers
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division)
SPIB	Southern Pine Inspection Bureau (The)
SPRI	Single Ply Roofing Industry
SSINA	Specialty Steel Industry of North America
SSPC	SSPC: The Society for Protective Coatings
STI	Steel Tank Institute
SWI	Steel Window Institute
SWRI	Sealant, Waterproofing, & Restoration Institute
TCA	Tile Council of America, Inc.

TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance
TMS	The Masonry Society
TPI	Truss Plate Institute, Inc.
TPI	Turfgrass Producers International
TRI	Tile Roofing Institute
UL	Underwriters Laboratories Inc.
UNI	Uni-Bell PVC Pipe Association
USAV	USA Volleyball
USGBC	U.S. Green Building Council
USITT	United States Institute for Theatre Technology, Inc.
WASTEC	Waste Equipment Technology Association
WCLIB	West Coast Lumber Inspection Bureau
WCMA	Window Covering Manufacturers Association (Now WCSC)
WCSC	Window Covering Safety Council (Formerly: WCMA - Window Covering Manufacturers Association)
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association)
WI	Woodwork Institute (Formerly: WIC - Woodwork Institute of California)
WIC	Woodwork Institute of California (Now WI)
WMMPA	Wood Moulding & Millwork Producers Association
WSRCA	Western States Roofing Contractors Association
WWPA	Western Wood Products Association

C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

BOCA BOCA International, Inc.

(See ICC)

IAPMO International Association of Plumbing and Mechanical Officials

ICBO International Conference of Building Officials  
(See ICC)

ICBO ICBO Evaluation Service, Inc.  
ES  
(See ICC-ES)

ICC International Code Council

ICC-ES ICC Evaluation Service, Inc.

SBCCI Southern Building Code Congress International, Inc.  
(See ICC)

UBC Uniform Building Code  
(See ICC)

D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

CE Army Corps of Engineers

CPSC Consumer Product Safety Commission

DOC Department of Commerce

DOD Department of Defense

DOE Department of Energy

EPA Environmental Protection Agency

FAA Federal Aviation Administration

FCC Federal Communications Commission

FDA Food and Drug Administration

GSA General Services Administration

HUD Department of Housing and Urban Development

LBL Lawrence Berkeley National Laboratory

NCHR National Cooperative Highway Research Program

P	(See TRB)
NIST	National Institute of Standards and Technology
OSHA	Occupational Safety & Health Administration
PBS	Public Building Service (See GSA)
PHS	Office of Public Health and Science
RUS	Rural Utilities Service (See USDA)
SD	State Department
TRB	Transportation Research Board
USDA	Department of Agriculture
USPS	Postal Service

E. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list.

ADAAG	Americans with Disabilities Act (ADA) Architectural Barriers Act (ABA)
CFR	Code of Federal Regulations
DOD	Department of Defense Military Specifications and Standards
DSCC	Defense Supply Center Columbus (See FS)
FED-STD	Federal Standard (See FS)
FS	Federal Specification
FTMS	Federal Test Method Standard (See FS)
MIL	(See MILSPEC)
MIL-STD	(See MILSPEC)

MILSPEC Military Specification and Standards

UFAS Uniform Federal Accessibility Standards

- F. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 42 00

## **SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS**

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Sections include the following:
  1. Division 01 Section "Submittal Procedures" for procedures for submitting copies of implementation and termination schedule and utility reports.
  2. Division 01 Section "Execution" for progress cleaning requirements.
  3. Divisions 02 through 12 Sections for temporary heat, ventilation, and humidity requirements for products in those Sections.
  4. Division 31 Section "Dewatering" for disposal of ground water at Project site.
  5. Division 31 Section "Termite Control" for pest control.
  6. Division 31 Section "Asphalt Paving" for construction and maintenance of asphalt paving for temporary roads and paved areas.
  7. Division 32 Section "Concrete Paving" for construction and maintenance of cement concrete pavement for temporary roads and paved areas.

#### 1.3 DEFINITIONS

- A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

#### 1.4 USE CHARGES

- A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to Owner's construction forces, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.
- B. Sewer Service: Pay sewer service use charges for sewer usage by all entities for construction operations.

- C. Water Service: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- D. Electric Power Service: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

## 1.5 SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

## 1.6 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

## 1.7 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.76-mm-) thick, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top rails.
- B. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails.
- C. Lumber and Plywood: Comply with requirements in Division 06 Section "Rough Carpentry .

- D. Gypsum Board: Minimum 1/2 inch (12.7 mm) thick by 48 inches (1219 mm) wide by maximum available lengths; regular-type panels with tapered edges. Comply with ASTM C 36/C 36M.
- E. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.
- F. Paint: Comply with requirements in Division 09 painting Sections.

## 2.2 TEMPORARY FACILITIES

- A. Field Offices, General: General Contractor to determine need and location of Common –Use Field Office or provide dedicated meeting space inside facility. Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Common-Use Field Office: Of sufficient size to accommodate needs of construction personnel. Keep office clean and orderly. Furnish and equip offices as follows:
  - 1. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
  - 2. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with not less than 1 receptacle on each wall. Furnish room with conference table, chairs, and 4-foot- (1.2-m-) square tack board.
  - 3. Drinking water and private toilet.
  - 4. Coffee machine and supplies.
  - 5. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F (20 to 22 deg C).
  - 6. Lighting fixtures capable of maintaining average illumination of 20 fc (215 lx) at desk height.
- C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
  - 1. Store combustible materials apart from building.

## 2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
  - 1. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return air grille in system and remove at end of construction.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
  - 1. Locate facilities to limit site disturbance as specified in Division 01 Section "Summary."
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

#### 3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
  - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
  - 1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.
- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
- D. Water Service: Use of Owner's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
  - 1. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.
- E. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
  - 1. Toilets: Use of Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- F. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select

equipment that will not have a harmful effect on completed installations or elements being installed.

- G. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- H. Electric Power Service: Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner.
- I. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
  - 1. Install electric power service overhead, unless otherwise indicated.
  - 2. Connect temporary service to Owner's existing power source, as directed by Owner.
- J. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
  - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
  - 2. Install lighting for Project identification sign.
- K. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install one telephone line(s) for each field office.
  - 1. Provide additional telephone lines for the following:
    - a. Provide a dedicated telephone line for each facsimile machine and computer in each field office.
    - b. Provide one telephone line(s) for Owner's use.
  - 2. At each telephone, post a list of important telephone numbers.
    - a. Police and fire departments.
    - b. Ambulance service.
    - c. Contractor's home office.
    - d. Architect's office.
    - e. Engineers' offices.
    - f. Owner's office.
    - g. Principal subcontractors' field and home offices.
  - 3. Provide superintendent with cellular telephone or portable two-way radio for use when away from field office.

- L. Electronic Communication Service: Provide temporary electronic communication service, including electronic mail, in common-use facilities.
  - 1. Provide DSL in primary field office.

### 3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
  - 1. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet (9 m) of building lines. Comply with NFPA 241.
  - 2. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
  - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
  - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- C. Parking: Provide temporary off site parking areas for construction personnel.
- D. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
  - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
- E. Project Identification and Temporary Signs: Provide Project identification and other signs allowed and required by Owner. Install signs where indicated to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.
  - 1. Provide temporary, directional signs for construction personnel and visitors.
  - 2. Maintain and touchup signs so they are legible at all times.
- F. Waste Disposal Facilities:
- G. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 01 Section "Execution" for progress cleaning requirements.
- H. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
  - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

### 3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- B. Temporary Erosion and Sedimentation Control: Comply with requirements specified in "Site Clearing."
- C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
  - 1. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
- D. Stormwater Control: Comply with authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- E. Tree and Plant Protection: Comply with requirements specified "Temporary Tree and Plant Protection."
- F. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- G. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Obtain extended warranty for Owner. Perform control operations lawfully, using environmentally safe materials.
- H. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent students and people and animals from easily entering site except by entrance gates.
  - 1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
  - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Provide Owner with one set of keys.
- I. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- J. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

- K. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
  - 1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.
- L. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
  - 1. Smoking is not allowed on school property.
  - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
  - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
  - 4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

### 3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
  - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
  - 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
  - 2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil.

Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.

3. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION 01 50 00

## **SECTION 01 63 00 - PRODUCT REQUIREMENTS**

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
- B. See Division 01 Section "Closeout Procedures" for submitting warranties for Contract closeout.
- C. See Divisions 02 through 12 Sections for specific requirements for warranties on products and installations specified to be warranted.

#### 1.2 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

### 1.3 SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Substitution Request Form: Use CSI Form 13.1A.
  2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified material or product cannot be provided.
    - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
    - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
    - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
    - e. Samples, where applicable or requested.
    - f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
    - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
    - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
    - i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
    - j. Cost information, including a proposal of change, if any, in the Contract Sum.
    - k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
    - l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
  3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
    - a. Form of Acceptance: Change Order.

- b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.
- B. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
    - a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
    - b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.
- C. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

#### 1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

#### 1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
  1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
  3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
- C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store cementitious products and materials on elevated platforms.
5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.

## 1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
  1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
  2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
  1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
  2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
  3. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

## PART 2 - PRODUCTS

### 2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

- a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
10. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
    - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
    - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

## 2.2 PRODUCT SUBSTITUTIONS

- A. Timing: Architect will consider requests for substitution if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.
- B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
  1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
  2. Requested substitution does not require extensive revisions to the Contract Documents.
  3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
  4. Substitution request is fully documented and properly submitted.
  5. Requested substitution will not adversely affect Contractor's Construction Schedule.
  6. Requested substitution has received necessary approvals of authorities having jurisdiction.
  7. Requested substitution is compatible with other portions of the Work.
  8. Requested substitution has been coordinated with other portions of the Work.
  9. Requested substitution provides specified warranty.

## 2.3 COMPARABLE PRODUCTS

- A. Conditions: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
  2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  3. Evidence that proposed product provides specified warranty.
  4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
  5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 63 00

## **SECTION 01 73 00 - EXECUTION**

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Construction layout.
  - 2. Field engineering and surveying.
  - 3. General installation of products.
  - 4. Coordination of Owner-installed products.
  - 5. Progress cleaning.
  - 6. Starting and adjusting.
  - 7. Protection of installed construction.
  - 8. Correction of the Work.
- B. Related Sections include the following:
  - 1. Division 01 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
  - 2. Division 01 Section "Submittal Procedures" for submitting surveys.
  - 3. Division 01 Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
  - 4. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

#### 1.3 SUBMITTALS

- A. Qualification Data: For land surveyor.
- B. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
- C. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

#### 1.4 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

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

#### PART 3 - EXECUTION

##### 3.1 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
  - 1. Before construction, verify the location and points of connection of utility services.
- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
  - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
  - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
  - 1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
    - a. Description of the Work.
    - b. List of detrimental conditions, including substrates.
    - c. List of unacceptable installation tolerances.
    - d. Recommended corrections.
  - 2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
  - 3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  - 4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.

5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on CSI Form 13.2A, "Request for Interpretation."

### 3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect and Construction Manager promptly.
- B. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- C. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- D. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect and Owner.

### 3.4 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
  - 1. Make vertical work plumb and make horizontal work level.
  - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
  - 4. Maintain minimum headroom clearance of 8 feet (2.4 m) in spaces without a suspended ceiling.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  - 2. Allow for building movement, including thermal expansion and contraction.
  - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

### 3.5 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction forces.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction forces.
  - 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
  - 2. Preinstallation Conferences: Include Owner's construction forces at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction forces if portions of the Work depend on Owner's construction.

### 3.6 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F (27 deg C).
  - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  - 1. Remove liquid spills promptly.
  - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

### 3.7 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 01 Section "Quality Requirements."

### 3.8 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

### 3.9 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching."
  - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01 73 00

## **SECTION 01 73 29 - CUTTING AND PATCHING**

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.
- B. See Divisions 2 through 12 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
- C. See Division 07 Section "Penetration Firestopping" for patching fire-rated construction.

#### 1.2 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
  - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
  - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
  - 3. Products: List products to be used and firms or entities that will perform the Work.
  - 4. Dates: Indicate when cutting and patching will be performed.
  - 5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
  - 6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
  - 7. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

#### 1.3 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
  - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
  - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

### 3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  3. Concrete or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
  5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  6. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
  3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
  4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
  5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

## **SECTION 01 77 00 - CLOSEOUT PROCEDURES**

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Inspection procedures.
  - 2. Warranties.
  - 3. Final cleaning.
- B. Related Sections include the following:
  - 1. Division 01 Section "Execution" for progress cleaning of Project site.
  - 2. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
  - 3. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
  - 4. Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel.
  - 5. Divisions 02 through 12 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

#### 1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
  - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
  - 2. Advise Owner of pending insurance changeover requirements.
  - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
8. Complete startup testing of systems.
9. Submit test/adjust/balance records.
10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
11. Advise Owner of changeover in heat and other utilities.
12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
13. Complete final cleaning requirements, including touchup painting.
14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

#### 1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
2. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
3. Submit pest-control final inspection report and warranty.
4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training videotapes.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or

will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

#### 1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use CSI Form 14.1A.
  1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
  2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
  3. Include the following information at the top of each page:
    - a. Project name.
    - b. Date.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Page number.

#### 1.6 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
  1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
  2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
  3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

## PART 3 - EXECUTION

### 3.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
    - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - e. Remove snow and ice to provide safe access to building.
    - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
    - h. Sweep concrete floors broom clean in unoccupied spaces.
    - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.

- j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
  - k. Remove labels that are not permanent.
  - l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
    - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
  - m. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  - n. Replace parts subject to unusual operating conditions.
  - o. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
  - p. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
  - q. Clean ducts, blowers, and coils if units were operated without filters during construction.
  - r. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
  - s. Leave Project clean and ready for occupancy.
- C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.
- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01 77 00

## **SECTION 01 78 23 - OPERATION AND MAINTENANCE DATA**

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
  - 1. Operation and maintenance documentation directory.
  - 2. Emergency manuals.
  - 3. Operation manuals for systems, subsystems, and equipment.
  - 4. Maintenance manuals for the care and maintenance of products, materials, and finishes, systems and equipment.
- B. Related Sections include the following:
  - 1. Division 01 Section "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
  - 2. Division 01 Section "Closeout Procedures" for submitting operation and maintenance manuals.
  - 3. Division 01 Section "Project Record Documents" for preparing Record Drawings for operation and maintenance manuals.
  - 4. Divisions 02 through 12 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

#### 1.3 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

#### 1.4 SUBMITTALS

- A. Initial Submittal: Submit 3 draft copies of each manual at least 15 days before requesting inspection for Substantial Completion. Include a complete operation and maintenance directory. Architect will return one copy of draft and mark whether general scope and content of manual are acceptable.

- B. Final Submittal: Submit three copies of each manual in final form at least 15 days before final inspection. Architect will return copy with comments within 15 days after final inspection.
  - 1. Correct or modify each manual to comply with Architect's comments. Submit 3 copies of each corrected manual within 15 days of receipt of Architect's comments.

## 1.5 COORDINATION

- A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

## PART 2 - PRODUCTS

### 2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Organization: Include a section in the directory for each of the following:
  - 1. List of documents.
  - 2. List of systems.
  - 3. List of equipment.
  - 4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

### 2.2 MANUALS, GENERAL

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
  - 1. Title page.

2. Table of contents.
  3. Manual contents.
- B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
1. Subject matter included in manual.
  2. Name and address of Project.
  3. Name and address of Owner.
  4. Date of submittal.
  5. Name, address, and telephone number of Contractor.
  6. Name and address of Architect.
  7. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
    - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
    - b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
  2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
  3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
  4. Supplementary Text: Prepared on 8-1/2-by-11-inch (215-by-280-mm) white bond paper.
  5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

- a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
- b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

## 2.3 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
  1. Type of emergency.
  2. Emergency instructions.
  3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
  1. Fire.
  2. Flood.
  3. Gas leak.
  4. Water leak.
  5. Power failure.
  6. Water outage.
  7. System, subsystem, or equipment failure.
  8. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
  1. Instructions on stopping.
  2. Shutdown instructions for each type of emergency.
  3. Operating instructions for conditions outside normal operating limits.
  4. Required sequences for electric or electronic systems.
  5. Special operating instructions and procedures.

## 2.4 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
  1. System, subsystem, and equipment descriptions.
  2. Performance and design criteria if Contractor is delegated design responsibility.
  3. Operating standards.
  4. Operating procedures.

5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

B. Descriptions: Include the following:

1. Product name and model number.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

## 2.5 PRODUCT MAINTENANCE MANUAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
  2. Manufacturer's name.
  3. Color, pattern, and texture.
  4. Material and chemical composition.
  5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
1. Inspection procedures.
  2. Types of cleaning agents to be used and methods of cleaning.
  3. List of cleaning agents and methods of cleaning detrimental to product.
  4. Schedule for routine cleaning and maintenance.
  5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

## 2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
1. Standard printed maintenance instructions and bulletins.
  2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
  3. Identification and nomenclature of parts and components.
  4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
  2. Troubleshooting guide.
  3. Precautions against improper maintenance.
  4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
  5. Aligning, adjusting, and checking instructions.
  6. Demonstration and training videotape, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
  2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

## PART 3 - EXECUTION

### 3.1 MANUAL PREPARATION

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
  2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
1. Do not use original Project Record Documents as part of operation and maintenance manuals.
  2. Comply with requirements of newly prepared Record Drawings in Division 01 Section "Project Record Documents."
- G. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 01 78 23

## **SECTION 01 78 39 - PROJECT RECORD DOCUMENTS**

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
  - 1. Record Drawings.
  - 2. Record Specifications.
  - 3. Record Product Data.
- B. Related Sections include the following:
  - 1. Division 01 Section "Closeout Procedures" for general closeout procedures.
  - 2. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
  - 3. Divisions 02 through 12 Sections for specific requirements for Project Record Documents of the Work in those Sections.

#### 1.3 SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit copies of Record Drawings as follows:
    - a. Initial Submittal: Submit two set(s) of corrected Record Prints from corrected Record CAD Drawings and two set(s) of marked-up Record Prints. Architect will initial and mark whether general scope of changes, additional information recorded, and quality of drafting are acceptable. Architect will return Record prints for organizing into sets, printing, binding, and final submittal.
    - b. Final Submittal: Submit one set(s) of marked-up Record Prints, one set(s) of Record CAD Drawing files, one set(s) of Record CAD Drawing plots, and three copies printed from record plots. Plot and print each Drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit three copies of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit three copies of each Product Data submittal.

1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.

## PART 2 - PRODUCTS

### 2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
  1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Accurately record information in an understandable drawing technique.
    - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
  2. Content: Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to Drawings.
    - b. Revisions to details shown on Drawings.
    - c. Depths of foundations below first floor.
    - d. Locations and depths of underground utilities.
    - e. Revisions to routing of piping and conduits.
    - f. Revisions to electrical circuitry.
    - g. Actual equipment locations.
    - h. Duct size and routing.
    - i. Locations of concealed internal utilities.
    - j. Changes made by Change Order or construction Change Directive.
    - k. Changes made following Architect's written orders.
    - l. Details not on the original Contract Drawings.
    - m. Field records for variable and concealed conditions.
    - n. Record information on the Work that is shown only schematically.
  3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
  4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
  5. Mark important additional information that was either shown schematically or omitted from original Drawings.

6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
  7. Construction Manager will keep updated Record drawings at jobsite trailer. At the end of each month, Construction Manager will make copies of Record drawings with changes and deliver to the Architect.
  8. Architect will take the record drawings and make changes to the Architect's CADD Drawings.
- B. Record CAD Drawings: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints and Architect's Record CADD drawings with Architect, Owner, and Construction Manager. When authorized, provide a full set of corrected "As-built" corrected shop CAD Drawings from all major subcontractors.
1. Format: Same CAD program, version, and operating system as the original Contract Drawings.
  2. Format: DWG operating in Microsoft Windows operating system.
  3. Incorporate changes and additional information previously marked on Record Prints. Delete, redraw, and add details and notations where applicable.
  4. Refer instances of uncertainty to Architect through Construction Manager for resolution.
  5. Architect will furnish Contractor one set of CAD Drawings of the Contract Drawings for use in recording information.
    - a. Architect makes no representations as to the accuracy or completeness of CAD Drawings as they relate to the Contract Drawings.
- C. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing Record Drawings where Architect determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.
1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
  2. Consult Architect and Construction Manager for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared Record Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.
- D. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  2. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.
  3. Record CAD Drawings: Organize CAD information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each CAD file.

4. Identification: As follows:
  - a. Project name.
  - b. Date.
  - c. Designation "PROJECT RECORD DRAWINGS."
  - d. Name of Architect.
  - e. Name of Contractor.

## 2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
  1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
  4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
  5. Note related Change Orders and Record Drawings where applicable.

## 2.3 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

## PART 3 - EXECUTION

### 3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

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PROJECT RECORD DOCUMENTS  
01 78 39-5

END OF SECTION 01783

## **SECTION 01 79 00 - DEMONSTRATION AND TRAINING**

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
  - 1. Demonstration of operation of systems, subsystems, and equipment.
  - 2. Training in operation and maintenance of systems, subsystems, and equipment.
  - 3. Demonstration and training videotapes.
- B. See Divisions 02 through 12 Sections Sections for specific requirements for demonstration and training for products in those Sections.

#### 1.2 SUBMITTALS

- A. Instruction Program: Submit two copies of outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
- B. Demonstration and Training Videotapes: Submit two copies within seven days of end of each training module.

#### 1.3 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 01 Section "Quality Requirements," experienced in operation and maintenance procedures and training.
- C. Preinstruction Conference: Conduct conference at project site. Review methods and procedures related to demonstration and training.
- D. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

## PART 2 - PRODUCTS

### 2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
  - 1. Basis of System Design, Operational Requirements, and Criteria: Include system and equipment descriptions, operating standards, regulatory requirements, equipment function, operating characteristics, limiting conditions, and performance curves.
  - 2. Documentation: Review emergency, operations, and maintenance manuals; Project Record Documents; identification systems; warranties and bonds; and maintenance service agreements.
  - 3. Emergencies: Include instructions on stopping; shutdown instructions; operating instructions for conditions outside normal operating limits; instructions on meaning of warnings, trouble indications, and error messages; and required sequences for electric or electronic systems.
  - 4. Operations: Include startup, break-in, control, and safety procedures; stopping and normal shutdown instructions; routine, normal, seasonal, and weekend operating instructions; operating procedures for emergencies and equipment failure; and required sequences for electric or electronic systems.
  - 5. Adjustments: Include alignments and checking, noise, vibration, economy, and efficiency adjustments.
  - 6. Troubleshooting: Include diagnostic instructions and test and inspection procedures.
  - 7. Maintenance: Include inspection procedures, types of cleaning agents, methods of cleaning, procedures for preventive and routine maintenance, and instruction on use of special tools.
  - 8. Repairs: Include diagnosis, repair, and disassembly instructions; instructions for identifying parts; and review of spare parts needed for operation and maintenance.

## PART 3 - EXECUTION

### 3.1 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. Owner will furnish an instructor to describe Owner's operational philosophy.
- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
  1. Schedule training with Owner, with at least 14 days' advance notice.
- D. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a demonstration performance-based test.

### 3.2 DEMONSTRATION AND TRAINING VIDEOTAPES

- A. General: Engage a qualified commercial photographer to record demonstration and training videotapes. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
  1. At beginning of each training module, record each chart containing learning objective and lesson outline.
- B. Videotape Format: Provide high-quality VHS color videotape in full-size cassettes.
- C. .

END OF SECTION 01 79 00

## **SECTION 02 36 10 SOIL POISONING**

### 1.1 SUMMARY

- A. This Section includes the following:
  - 1. Soil treatment with termiticide.
- B. See Division 6 Section "Rough Carpentry" for wood preservative treatment by pressure process.
- C. See Division 7 Section "Sheet Metal Flashing and Trim" for custom-fabricated metal termite shields.

### 1.2 SUBMITTALS

- A. Product Data: For each type of product indicated. Include the EPA-Registered Label.
- B. Product certificates.
- C. Soil Treatment Application Report: Include the following:
  - 1. Date and time of application.
  - 2. Moisture content of soil before application.
  - 3. Brand name and manufacturer of termiticide.
  - 4. Quantity of undiluted termiticide used.
  - 5. Dilutions, methods, volumes, and rates of application used.
  - 6. Areas of application.
  - 7. Water source for application.

### 1.3 QUALITY ASSURANCE

- A. Installer Qualifications: A specialist who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment and products in jurisdiction where Project is located  
Regulatory Requirements: Formulate and apply termiticides according to the EPA-Registered Label.

### 1.4 WARRANTY

- A. Special Warranty: Manufacturer's standard form, signed by Applicator and Contractor certifying that termite control work, consisting of applied soil

termiticide treatment, will prevent infestation of subterranean termites. If subterranean termite activity or damage is discovered during warranty period, re-treat soil and repair or replace damage caused by termite infestation.

1. Warranty Period: Five years from date of Substantial Completion.

## 1.5 MAINTENANCE SERVICE

- A. Continuing Service: Beginning at Substantial Completion, provide 12 months continuing service including monitoring, inspection, and re-treatment for occurrences of termite activity. Provide a standard continuing service agreement. State services, obligations, conditions, and terms for agreement period; and terms for future renewal options.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. 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:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  1. Termiticides:
    - a. Aventis Environmental Science USA LP; Termidor.
    - b. Bayer Corporation; Premise 75.
    - c. Dow AgroSciences LLC; Dursban TC.
    - d. FMC Corporation, Agricultural Products Group; Talstar.
    - e. Syngenta; Demon TC.

### 2.2 SOIL TREATMENT

- A. Termiticide: Provide an EPA-registered termiticide complying with requirements of authorities having jurisdiction, in an aqueous solution formulated to prevent termite infestation. Provide quantity required for application at the label volume and rate for the maximum termiticide concentration allowed for each specific use, according to product's EPA-Registered Label.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. General: Remove all extraneous sources of wood cellulose and other edible materials such as wood debris, tree stumps and roots, stakes, formwork, and construction waste wood from soil within and around foundations.
- B. Soil Treatment Preparation: Loosen, rake, and level soil to be treated except previously compacted areas under slabs and footings. Termiticides may be applied before placing compacted fill under slabs if recommended in writing by termiticide manufacturer.

### 3.2 APPLYING SOIL TREATMENT

- A. Application: Mix soil treatment termiticide solution to a uniform consistency. Provide quantity required for application at the label volume and rate for the maximum specified concentration of termiticide, according to manufacturer's EPA-Registered Label, to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction. Distribute treatment evenly.
  - 1. Slabs-on-Grade and Basement Slabs: Under ground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.
  - 2. Foundations: Adjacent soil including soil along the entire inside perimeter of foundation walls, along both sides of interior partition walls, around plumbing pipes and electric conduit penetrating the slab, and around interior column footers, piers, and chimney bases; also along the entire outside perimeter, from grade to bottom of footing. Avoid soil washout around footings.
  - 3. Crawlspace: Soil under and adjacent to foundations as previously indicated. Treat adjacent areas including around entrance platform, porches, and equipment bases. Apply overall treatment only where attached concrete platform and porches are on fill or ground.
  - 4. Masonry: Treat voids.
  - 5. Penetrations: At expansion joints, control joints, and areas where slabs will be penetrated.
- B. Avoid disturbance of treated soil after application. Keep off treated areas until completely dry.

- C. Protect termiticide solution, dispersed in treated soils and fills, from being diluted until ground-supported slabs are installed. Use waterproof barrier according to EPA-Registered Label instructions.
- D. Post warning signs in areas of application.
- E. Reapply soil treatment solution to areas disturbed by subsequent excavation, grading, landscaping, or other construction activities following application.

END OF SECTION 02 36 10

## **SECTION 02 82 50 / METAL FENCING AND GATES**

### **PART 1 - GENERAL**

#### **1.01 RELATED DOCUMENTS**

- A. Conform to Division 1, Section 02000 and other sections of this division.

### **PART 2 - PRODUCTS**

#### **2.01 GENERAL**

- A. All fabric and fittings to be regionally recognized manufacturer's standard items produced to construct the polymer coated galvanized chain link fabric fences shown on the drawings, with galvanized posts, fittings, gates and rails, conforming to ASTM B-120 for weight and coating. All material to be polymer coated: ASTM D 668, Class 1 over metallic-coated steel.

#### **2.02 CONCRETE**

- A. 2500 psi test premix, or jobsite mixed concrete.

#### **2.03 FABRIC**

- A. Weave in two (2) inch chain link diamond mesh, from #9 BWG copper bearing wire to withstand 1390 pound breaking load. Twist and barb top and bottom selvages, cutting each wire on the diagonal. Galvanize after wiring and barbing with 1.2 oz. zinc per sq. ft. complying with ASTM A392. Top and bottom wire ends to be knuckle selvage at all locations (then galvanized and polymer coat) to eliminate sharp edges.

#### **2.04 GATES**

- A. Fabricate perimeter frames of 2.0" O.D. tubular members at 2.717 pounds per lineal foot. Provide additional horizontal and vertical members to ensure proper gate operation and for attachment of fabric, hardware and accessories. Assemble gates by welding all joints. Galvanize after fabrication. Use same fabric as fence, installed with stretcher bars at vertical edges and tie wires at top and bottom edges. Attach stretcher bars to frame to maximum 15" o.c. Attach hardware with bolts or welding to provide security against removal or breakage.  
Provide diagonal cross bracing of 3/8" dia. adjustable length truss rods on gates of size required to prevent sag or twist.

1. Swing Gate Hardware
  - a. Hinges: pressed steel or malleable iron to suit gate sizes, non-lift-off type, offset to permit 180 degree gate opening, polymer coated. One pair per leaf.
  - b. Latch: forked or plunger bar type to permit operation from either side of gate. Provide padlock eye as integral part of latch, unless otherwise noted. Paired gates are to have appropriate keepers at meeting rails, polymer coated.
2. Rolling Gate Hardware
  - a. Guide Rails: galvanized steel attached to gate and fence.
  - b. Latch: none required.
  - c. Tire:  $\pm$  12" diameter pneumatic tire on steel wheel at leading edge of gate.

## 2.05 POSTS, RAILS AND BRACES

- A. End, Corner and Terminal Posts  
Shall be hot dip galvanized iron with zinc coating of not less than 1.2 ounces per square foot surface and polymer coated. Posts shall be 2.375 inches O.D. at 3.65 ounces per lineal foot.  
(Schedule 40) (SS-40 IS NOT ACCEPTABLE.)
- B. Line Posts: Shall be hot dip galvanized iron with zinc coating of not less than 1.2 ounces per square foot and polymer coated. Posts shall be 1.9 inches O.D. at 1.72 pounds per lineal foot. (Schedule 40) (SS-40 IS NOT ACCEPTABLE.)
- C. Gate Posts: Shall be hot dip galvanized, polymer coated, cleaned and painted with an approved zinc based paint. Posts for a single swing gate with a 6-foot maximum panel width shall be 3.0 inches O.D. at 5.79 pounds per lineal foot. Posts supporting gates with panel widths greater than 6 feet are to be increased in size proportionately to gate panel width increases as approved by ARCHITECT.
- D. Top Rail: 1.660" O.D. pipe 2.27 lbs./l.f. Hot dipped galvanized, polymer coated, furnished in manufacturer's standard lengths  $\pm$  21'-0" with couplings for jointing, to provide a rigid connection but allowing for expansion and contraction.  
(Schedule 40) (SS-40 IS NOT ACCEPTABLE.)
- E. Braces: All corner, terminal and gate posts shall be braced with 1.66 inch O.D. galvanized Schedule 40 pipe at 2.27 pounds per lineal foot and trussed with a 3/8" attached galvanized rod and polymer coated.

## 2.06 TENSION WIRE

- A. No. 7 gauge spring tension wire at bottom of all fabric, except on gates, polymer coated.

## 2.07 RODS

- A. Galvanized steel rod minimum 3/8" diameter, with threaded galvanized turnbuckle and positive attachment to each side post and polymer coated.

## 2.08 STRETCHER BARS

- A. Shall be 1/4" or 3/16" x 3/4" flat bar, hot dip galvanized and polymer coated.

## 2.09 TIE WIRE

- A. Shall be aluminum no. 6 gauge polymer coated.

## 2.10 MISCELLANEOUS FITTINGS

- A. All fittings entering into the fence necessary to make a complete installation shall be pressed steel; all ferrous material shall be thoroughly galvanized by the hot dipped method and polymer coated.

## 2.11 SCOPE OF WORK

- A. Mechanical and Related Equipment Enclosures: 6'-0" high w/one 4'-0" wide gate
- B. Propane Gas & Tank Enclosure: 6'-0" high w/one 4'-0" wide gate
- C. Site Perimeter (1'-0" inside property line): 6'-0" high, gates as indicated
- D. Storm Water Retention Areas: 6'-0" high, gates as indicated
- E. Solid Wall A/C Enclosure: 6'-0"H x 4'-0"W gate only including gateposts.

## PART 3 - EXECUTION

### 3.01 TOLERANCES

- A. Both top and bottom of fence to follow grade with a maximum 2" tolerance. Fence line

is outside face of fabric. Unless otherwise indicated, fence line along property lines is to be set 1'-0" inside property line.

### 3.02 POSTS

- A. Set into concrete footings per following schedule. Top of footing to be crowned away from post to shed water.

<u>Type of Post</u>	<u>Hole Diameter</u>	<u>Hole Depth</u>	<u>Post Embedment in Concrete</u>
Line	8"	30"	27"
Terminal	12"	38"	36"
Corner	12"	38"	36"
Gate	Post dia. x 3	38"	36"

(Post embedment is minimum and shall be measured from bottom end of post to ground level.)

- B. Place all posts at maximum of 10 foot spacing, and spacing all posts between corners and gates (or ends) uniformly. Set brace posts 4'-0" above grade against each direction of all terminal, angle, and pull posts; and extend to grade at each adjacent line post. Securely fasten with galvanized steel fittings. Install matching rod and turnbuckle back from line posts to terminal, angle, and pull posts. Install bottom tension wire, pull tightly, and secure.
- C. When fences are to be installed around equipment set on concrete slab, unless otherwise indicated fence posts are to be centered 4" inward from outer edge of slab, so that fence posts are fully embedded in slab.

### 3.03 TOP RAIL

- A. Provide manufacturer's standard fittings to fit with line posts. Provide means to attach rail securely and rigidly to each gate, corner, pull and end post. Top rail to form a continuous brace from end to end each run of fence.

### 3.04 FABRIC

- A. Attach fabric to stretcher bar. Attach bar to terminal posts with 1/8" x 1" galvanized steel bands at 1'-3" centers, fabricated to fit posts. Stretch fabric tightly between terminal, angle and pull poles.

### 3.05 GATES

- A. Install plumb and level, and so that swing gates will stand open in any position. Insure

that all moving parts are well lubricated and operate smoothly.

- B. Construct 6" thick concrete pad beyond edge of paving as rolling surface for rolling gate.

### 3.06 PAINT (WHERE CALLED FOR)

- A. CONTRACTOR shall wire brush rusted areas. Apply Rustoleum primer. Apply 2 coats of a zinc-based paint.

END OF SECTION 02 82 50

## **SECTION 03 30 00 - CAST-IN-PLACE CONCRETE**

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
  - 1. Footings.
  - 2. Slabs-on-grade.

#### 1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

#### 1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
  - 1. Indicate amounts of mixing water to be withheld for later addition at Project site.
- C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

- D. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
  - 1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.
- E. Material Certificates: For each of the following, signed by manufacturers:
  - 1. Cementitious materials.
  - 2. Admixtures.
  - 3. Form materials and form-release agents.
  - 4. Steel reinforcement and accessories.
  - 5. Fiber reinforcement.
  - 6. Waterstops.
  - 7. Curing compounds.
  - 8. Floor and slab treatments.
  - 9. Bonding agents.
  - 10. Adhesives.
  - 11. Vapor retarders.
  - 12. Semirigid joint filler.
  - 13. Joint-filler strips.
  - 14. Repair materials.
- F. Field quality-control test and inspection reports.

#### 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
  - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- C. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.
  - 1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
  - 2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician

- Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.

- D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.
- E. Welding: Qualify procedures and personnel according to AWS D1.4, "Structural Welding Code--Reinforcing Steel."
- F. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
  - 1. ACI 301, "Specification for Structural Concrete," Sections 1 through 5 and Section 7, "Lightweight Concrete."
  - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- G. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- H. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."
  - 1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
    - a. Contractor's superintendent.
    - b. Independent testing agency responsible for concrete design mixtures.
    - c. Ready-mix concrete manufacturer.
    - d. Concrete subcontractor.
  - 2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, semirigid joint fillers, forms and form removal limitations, shoring and reshoring procedures, vapor-retarder installation, anchor rod and anchorage device installation tolerances, steel reinforcement installation, floor and slab flatness and levelness measurement, concrete repair procedures, and concrete protection.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage. Avoid damaging coatings on steel reinforcement.
- B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
  - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.

### 2.2 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
  - 1. Plywood, metal, or other approved panel materials.
  - 2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
    - a. High-density overlay, Class 1 or better.
    - b. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
    - c. Structural 1, B-B or better; mill oiled and edge sealed.
    - d. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch (19 by 19 mm), minimum.
- D. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- E. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
1. Furnish units that will leave no corrodible metal closer than 1 inch (25 mm) to the plane of exposed concrete surface.
  2. Furnish ties that, when removed, will leave holes no larger than 1 inch (25 mm) in diameter in concrete surface.

## 2.3 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.
- B. Low-Alloy-Steel Reinforcing Bars: ASTM A 706/A 706M, deformed.
- C. Plain-Steel Wire: ASTM A 82, as drawn galvanized.
- D. Deformed-Steel Wire: ASTM A 496.
- E. Plain-Steel Welded Wire Reinforcement: ASTM A 185, plain, fabricated from as-drawn steel wire into flat sheets.

## 2.4 REINFORCEMENT ACCESSORIES

- A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), plain-steel bars, cut bars true to length with ends square and free of burrs.
- B. Zinc Repair Material: ASTM A 780, zinc-based solder, paint containing zinc dust, or sprayed zinc.
- C. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:
  1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.

## 2.5 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
  - 1. Portland Cement: ASTM C 150, Type I/II Supplement with the following:
    - a. Fly Ash: ASTM C 618, Class F.
    - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- B. Silica Fume: ASTM C 1240, amorphous silica.
- C. Normal-Weight Aggregates: ASTM C 33 coarse aggregate or better, graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials.
  - 1. Maximum Coarse-Aggregate Size: 1-1/2 inches nominal.
  - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- D. Lightweight Aggregate: ASTM C 330, 3/4-inch nominal maximum aggregate size.
- E. Water: ASTM C 94/C 94M and potable.

## 2.6 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
  - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
  - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
  - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
  - 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
  - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
  - 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

## 2.7 VAPOR RETARDERS

- A. Plastic Vapor Retarder: ASTM E 1745, Class A. Include manufacturer's recommended adhesive or pressure-sensitive tape.
  - 1. Available Products:
    - a. Fortifiber Corporation; Moistop Ultra A.
    - b. Raven Industries Inc.; Vapor Block 15.
    - c. Reef Industries, Inc.; Griffolyn Type-

## 2.8 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
  - 1. Available Products:
    - a. Axim Concrete Technologies; Cimfilm.
    - b. Burke by Edoco; BurkeFilm.
    - c. ChemMasters; Spray-Film.
    - d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Aquafilm.
    - e. Dayton Superior Corporation; Sure Film.
    - f. Euclid Chemical Company (The); Eucobar.
    - g. Kaufman Products, Inc.; Vapor Aid.
    - h. Lambert Corporation; Lambco Skin.
    - i. L&M Construction Chemicals, Inc.; E-Con.
    - j. MBT Protection and Repair, Div. of ChemRex; Confilm.
    - k. Meadows, W. R., Inc.; Sealtight Evapre.
    - l. Metalcrete Industries; Waterhold.
    - m. Nox-Crete Products Group, Kinsman Corporation; Monofilm.
    - n. Sika Corporation, Inc.; SikaFilm.
    - o. Symons Corporation, a Dayton Superior Company; Finishing Aid.
    - p. Unitex; Pro-Film.
    - q. US Mix Products Company; US Spec Monofilm ER.
    - r. Vexcon Chemicals, Inc.; Certi-Vex EnvioAssist.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.

- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, nondissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering.

1. Available Products:

- a. Anti-Hydro International, Inc.; AH Clear Cure WB.
- b. Burke by Edoco; Spartan Cote WB II.
- c. ChemMasters; Safe-Cure & Seal 20.
- d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Cure and Seal WB.
- e. Dayton Superior Corporation; Safe Cure and Seal (J-18).
- f. Euclid Chemical Company (The); Aqua Cure VOX.
- g. Kaufman Products, Inc.; Cure & Seal 309 Emulsion.
- h. Lambert Corporation; Glazecote Sealer-20.
- i. L&M Construction Chemicals, Inc.; Dress & Seal WB.
- j. Meadows, W. R., Inc.; Vocomp-20.
- k. Metalcrete Industries; Metcure.
- l. Nox-Crete Products Group, Kinsman Corporation; Cure & Seal 150E.
- m. Symons Corporation, a Dayton Superior Company; Cure & Seal 18 Percent E.
- n. Tamms Industries, Inc.; Clearseal WB 150.
- o. Unitex; Hydro Seal.
- p. US Mix Products Company; US Spec Hydrasheen 15 percent
- q. Vexcon Chemicals, Inc.; Starseal 309.

## 2.9 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1752, cork or self-expanding cork.
- B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- C. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:
  1. Types I and II, non-load bearing IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
- D. Reglets: Fabricate reglets of not less than 0.0217-inch- (0.55-mm-) thick, galvanized steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.

## 2.10 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
  - 1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
  - 1. Fly Ash: 25 percent.
  - 2. Combined Fly Ash and Pozzolan: 25 percent.
  - 3. Ground Granulated Blast-Furnace Slag: 50 percent.
  - 4. Combined Fly Ash or Pozzolan and Ground Granulated Blast-Furnace Slag: 50 percent portland cement minimum, with fly ash or pozzolan not exceeding 25 percent.
- C. Limit water-soluble, chloride-ion content in hardened concrete per ACI 301 and ACI 318 percent by weight of cement.
- D. Admixtures: Use admixtures according to manufacturer's written instructions.
  - 1. Use water-reducing, high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
  - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
  - 3. Use water-reducing admixture in pumped concrete, slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
  - 4. Use corrosion-inhibiting admixture in concrete mixtures where indicated.

## 2.11 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

## 2.12 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
  - 1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

## PART 3 - EXECUTION

### 3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
  - 1. Class A, 1/8 inch (3.2 mm) for smooth-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
  - 1. Install keyways, reglets, recesses, and the like, for easy removal.
  - 2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- H. Chamfer exterior corners and edges of permanently exposed concrete.
- I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

- K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

### 3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."
  - 2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
  - 3. Install dovetail anchor slots in concrete structures as indicated.

### 3.3 VAPOR RETARDERS

- A. Plastic Vapor Retarders: Place, protect, and repair vapor retarders according to ASTM E 1643 and manufacturer's written instructions.
  - 1. Lap joints 6 inches (150 mm) and seal with manufacturer's recommended tape.

### 3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
  - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
  - 1. Weld reinforcing bars according to AWS D1.4, where indicated.

- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

### 3.5 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
  - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
  - 2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
  - 3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
  - 4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
  - 5. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
  - 6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
  - 7. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth Insert depth of concrete thickness as follows:
  - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3.2 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
  - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3.2-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

- D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.
  2. Terminate full-width joint-filler strips not less than 1/2 inch (13 mm) or more than 1 inch (25 mm) below finished concrete surface where joint sealants, specified in Division 7 Section "Joint Sealants," are indicated.
  3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.
- E. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

### 3.6 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Engineer.
- C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
  2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
  3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of

reinforcement and other embedded items without causing mixture constituents to segregate.

- E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
  - 1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
  - 2. Maintain reinforcement in position on chairs during concrete placement.
  - 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
  - 4. Slope surfaces uniformly to drains where required.
  - 5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
  
- F. Hot-Weather Placement: Comply with ACI 301 and as follows:
  - 1. Maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
  - 2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

### 3.7 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
  - 1. Apply to concrete surfaces not exposed to public view.
  
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
  - 1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, to be covered with a coating or covering material applied directly to concrete.

### 3.8 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch (6 mm) in 1 direction.
  - 1. Apply scratch finish to surfaces indicated and to receive concrete floor toppings to receive mortar setting beds for bonded cementitious floor finishes.
- C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraighening until surface is left with a uniform, smooth, granular texture.
  - 1. Apply float finish to surfaces indicated to receive trowel finish and to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.
- D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
  - 1. Apply a trowel finish to surfaces indicated, exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.
  - 2. Finish surfaces to the following tolerances, according to ASTM E 1155 (ASTM E 1155M), for a randomly trafficked floor surface:
    - a. Specified overall values of flatness, F(F) 30; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 15; for suspended slabs.
  - 3. Finish and measure surface so gap at any point between concrete surface and an unlevelled, freestanding, 10-foot- (3.05-m-) long straightedge resting on 2 high spots and placed anywhere on the surface does not exceed 1/8 inch (3.2 mm)
- E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces indicated where ceramic or quarry tile is to be installed by either thickset or thin-set method. While concrete is still plastic, slightly scarify surface with a fine broom.

1. Comply with flatness and levelness tolerances for trowel finished floor surfaces.
- F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.
1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

### 3.9 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
- C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing machines and equipment.

### 3.10 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.
- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

- E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
    - a. Water.
    - b. Continuous water-fog spray.
    - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.
  2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
    - a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
    - b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
    - c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project..
  3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
    - a. After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project.
  4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

### 3.11 LIQUID FLOOR TREATMENTS

- A. Penetrating Liquid Floor Treatment: Prepare, apply, and finish penetrating liquid floor treatment according to manufacturer's written instructions.
  - 1. Remove curing compounds, sealers, oil, dirt, laitance, and other contaminants and complete surface repairs.
  - 2. Do not apply to concrete that is less than 28 days' old.
  - 3. Apply liquid until surface is saturated, scrubbing into surface until a gel forms; rewet; and repeat brooming or scrubbing. Rinse with water; remove excess material until surface is dry. Apply a second coat in a similar manner if surface is rough or porous.
- B. Sealing Coat: Uniformly apply a continuous sealing coat of curing and sealing compound to hardened concrete by power spray or roller according to manufacturer's written instructions.

### 3.12 JOINT FILLING

- A. Prepare, clean, and install joint filler according to manufacturer's written instructions.
  - 1. Defer joint filling until concrete has aged at least six month(s). Do not fill joints until construction traffic has permanently ceased.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.
- C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches (50 mm) deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

### 3.13 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.
  - 1. .
- C. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface.

Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
  2. After concrete has cured at least 14 days, correct high areas by grinding.
  3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
  4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
  5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch (6 mm) to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
  6. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch (19-mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
  7. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- D. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.
- E. Repair materials and installation not specified above may be used, subject to Architect's approval.

### 3.14 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.
- B. Inspections:
  - 1. Steel reinforcement welding.
  - 2. Verification of use of required design mixture.
  - 3. Concrete placement, including conveying and depositing.
  - 4. Curing procedures and maintenance of curing temperature.
- C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
  - 1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m) or fraction thereof.
  - 2. Slump: ASTM C 143; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
  - 3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173/, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
  - 4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each composite sample.
  - 5. Unit Weight: ASTM C 567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
  - 6. Compression Test Specimens: ASTM C 31.
    - a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample. A minimum of four.
  - 7. Compressive-Strength Tests: ASTM C 39 test one set of two laboratory-cured specimens at 7 days, two specimens at 28 days and one specimen at 56 days..
  - 8. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).

9. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
  10. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
  11. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42 or by other methods as directed by Architect.
  12. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
  13. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.
- D. Measure floor and slab flatness and levelness according to ASTM E 1155 (ASTM E 1155M) within 24 hours of finishing.

END OF SECTION 03 30 00

## **SECTION 03 36 60 - CHEMICALLY STAINED CONCRETE FLOOR**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to Work of this Section.
- B. Section Includes:
  - 1. Chemically stained concrete floor finish.
  - 2. Sealer.

#### **1.2 SUBMITTALS**

- A. Product Data: Manufacturer's technical data sheets and installation instructions for each product specified.
- B. Samples for Initial Selection: Manufacturer's color charts showing full range of colors available.
- C. Qualification Data: For firms indicated in "Quality Assurance" Article, including lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

#### **1.3 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Manufacturer of stain and sealer products shall have minimum 10 years experience in the production of the specified products.
- B. Installer Qualifications: Minimum 3 years experience in staining applications and successfully completed not less than 6 projects comparable in scale and complexity.
- C. Substitutions: The use of any products other than those specified shall be considered providing that the Contractor requests its use in writing within 14 days prior to bid date. This request shall be accompanied by:
  - 1. A certificate of compliance from the material manufacturer stating that the proposed products meet or exceed the requirements specified.
  - 2. Documented proof that the proposed material has a 10 year proven record of performance for staining concrete substrates, confirmed by at least 5 local projects that the Architect can examine.
- D. Regulatory Requirements:
  - 1. Products shall comply with the United States Clean Air Act for maximum Volatile Organic Compound (VOC) content as specified in PART 2 of this section.

- E. Source Limitations: Obtain each specified material from same source and maintain high degree of consistency in workmanship throughout Project.
- F. Field Samples:
  - 1. Provide under provisions of Division 1 Section "Quality Control."
  - 2. At location on Project selected by Architect, prepare field samples 4 by 4 feet for review and approval.
  - 3. Construct field samples using processes and techniques intended for use on permanent work, including curing procedures. Include samples of control, construction, and expansion joints in field sample panels.
  - 4. Field samples shall be stained and sealed by the individual workers who will actually be performing the work for the Project.
  - 5. Obtain written approval of the field samples from Architect before start of work.
  - 6. Retain approved field samples through completion of the Work for use as a quality standard for finished work.
  - 7. Approved field samples may become part of the completed Work if undisturbed at time of Substantial Completion.

#### **1.4 DELIVERY, STORAGE AND HANDLING**

- A. Deliver the specified products in original, unopened containers with legible manufacturer's identification and information.
- B. Store specified products in conditions recommended by the manufacturer.

#### **1.5 PROJECT CONDITIONS**

- A. Environmental Conditions: Maintain an ambient temperature of between 50° and 90° F during application and at least 48 hours after application.
- B. Protection: Precautions shall be taken to avoid damage or contamination of any surfaces near the work zone. Protect completed stain work from moisture or contamination.

#### **1.6 PRE-JOB CONFERENCE**

- A. One week prior to the placement of Chemical Stain a meeting will be held to discuss the project and application of materials.
- B. It is suggested that the Architect, General Contractor, Subcontractor and a Manufacturer Representative be present.

## **PART 2 - PRODUCTS**

### **2.1 ACCEPTABLE MANUFACTURERS**

- A. Manufacturer: L.M. SCOFIELD COMPANY, Douglasville, Georgia and Los Angeles, California (800) 800-9900 or the appropriate local contact: Eastern Division – 201-672-9050; Western Division – 714-568-1870; Central Division Office – 630-377-5959

### **2.2 MATERIALS**

- A. Chemical Stains: LITHOCHROME<sup>®</sup> Chemstain<sup>™</sup>; L.M. SCOFIELD COMPANY, reactive water-based solution of metallic salts which react with the calcium hydroxide in the cured concrete substrate to produce permanent, variegated or translucent color effects.
1. Colors: As selected by Architect from manufacturer's full range.
- B. Sealers:
1. SCOFIELD Selectseal-W, L.M. SCOFIELD COMPANY, water-based aclearliphatc polyurethane specifically formulated for protecting chemically stained concrete hardscapes and floors.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Verification of Conditions: Contractor shall examine areas and conditions under which work will be performed and identify conditions detrimental to proper and timely completion of work. Do not proceed until unsatisfactory conditions have been corrected.
- B. Compliance with Manufacturer's Instructions: Contractor shall obtain, understand and comply with the current versions of the manufacturer's technical data sheets and installation instructions as referenced in Section 1.2.A. Wherever technical data such as preparation or installation instructions differs from language in this specification or other written material, the information submitted in accordance with Section 1.2.A is considered definitive.

### **3.2 PREPARATION**

- A. New Concrete:
1. Newly placed concrete shall be sufficiently cured to allow concrete to become reactive, minimum 14 days.

2. If any of the following colors are used, the minimum cure time of the concrete shall be 30 to 60 days to meet water vapor transmission requirements.
  - a. Copper Patina.
  - b. Fern Green.
  - c. Weathered Bronze.
3. Do not use liquid curing materials. Cure concrete flatwork with new, unwrinkled, non-staining, high quality curing paper. Do not overlap curing paper.
4. Surfaces shall be cured using the same method and different sections (pours) chemically stained when the concrete is the same age.
5. Immediately prior to chemically staining, thoroughly clean the concrete. Sweep surfaces, then pressure wash or scrub using a rotary floor machine. Use suitable, high quality commercial detergents to facilitate cleaning. Rinse surfaces after cleaning until rinse water is completely clean. Allow floor to dry completely prior to application of floor stain.

**B. Existing Concrete:**

1. Clean concrete surfaces so that surfaces are completely penetrable before receiving the initial application of chemical stain. Test surfaces to receive stain by spotting with water. Water should immediately darken the substrate and be readily absorbed. If water beads and does not penetrate or only penetrates in some areas, additional surface preparation and testing shall be performed. On denser floors, acid wash with a solution of one part muriatic acid (20° Baume or 31.4 percent pool acid) to 20 parts water, or sand lightly to open up surfaces. Retest and continue surface preparation until water spots immediately darken and uniformly penetrate concrete surfaces.
2. Cleaning method used depends on the condition of the concrete surface. To remove dirt and other contaminates, detergents and other commercial grade cleaners should be considered and tested.
3. Rinse concrete substrates until rinse water is completely clean.

### **3.3 APPLICATION OF CHEMICAL STAIN**

- A. Concrete surfaces shall be dry and properly prepared as described above. Protect surrounding areas from over-spray, run-off and tracking. Divide surfaces into small work sections using wall, joint lines, or other stationary breaks as natural stopping points.
- B. Apply chemical stains full strength (undiluted) at the coverage rate recommended by the manufacturer and use application equipment described in the manufacturer's printed technical literature. The color of the liquid chemical stain has no resemblance to the final color produced on the concrete substrate.
- C. Chemical stains normally fizz when reacting with the concrete. If fizzing does not occur, the substrate has not been adequately prepared or the concrete pH level is too low. If this should happen, contact the local representative for further recommendations.
- D. Transfer chemical stain to the substrate by brush or spray and immediate scrub into surface.

- E. Reaction time depends on wind conditions, temperatures, and humidity levels.
- F. When multiple coats of one or more colors are required, washing and drying between colors is desirable to evaluate the color prior to the next coat.
- G. After the final coat of chemical stain has remained on the surface for a minimum of four hours, remove all residue by wet scrubbing with commercial grade detergent. Rinse surfaces after scrubbing until rinse water is completely clean. Run off may stain the adjacent areas or harm plants. Collect rinse water by wet vacuuming or absorbing with an inert material.

### **3.4 APPLICATION OF SEALER**

- A. Concrete substrate shall be completely dry.
- B. Sealer shall be produced by the chemical stain manufacturer.
- C. Test surface for proper PH level prior to applying sealer.
- D. Apply sealer according to manufacturer's written instructions at a rate of 300 to 500 square feet per gallon per coat.
- E. Maintain a wet edge at all times.
- F. Allow sealer to completely dry before applying additional coats.
- G. Apply second coat of sealer at 90 degrees to the direction of the first coat using the same application method and rates.
- H. Seal horizontal joints in areas subject to pedestrian or vehicular traffic.

### **3.5 PROTECTION**

- A. Protect floor from traffic for at least 72 hours after final application of sealer.

### **3.6 MAINTENANCE**

- A. Maintain chemically stained and sealed floors by sweeping. Clean spills when they occur and rinse dirt off with water. Wet-clean heavily soiled areas by mopping or by scrubbing with a rotary floor machine equipped with a scrubbing brush and a suitable, high quality commercial detergent. Maintain interior floors that require polishing by using a compatible, premium-grade, emulsion-type, commercial floor polish, following manufacturer's instructions and safety requirements.
  - 1. Information on commercial floor polishes is available by contacting Johnson Diversey, Sturtevant, Wisconsin, 800-558-2332.

### **3.7 APPLICATORS**

- A. For a list of qualified contractors, contact your local Scofield representative or the appropriate Division Office: Eastern Division – 201-672-9050; Western Division – 714-568-1870; Central Division Office – 630-377-5959.

END OF SECTION

**SECTION 04 20 00 / MASONRY, GENERAL**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Conform to Division 1, General Requirements, which applies to all sections of this Division 4. Provisions of this Section 04 20 00 also apply to all sections of this Division 4. The articles contained in this section may modify, delete or add to the provisions of the conditions of the Contract.

**1.02 SAMPLES**

- A. Submit three (3) full size samples of all clay units to ARCHITECT for review. Show complete range of colors and sizes specified. Secure ARCHITECT'S acceptance prior to first shipment.

**1.03 FIELD MEASUREMENTS, COORDINATION AND SAFE PRACTICES**

- A. Furnish location information for all required dowels to be set in foundations and verify location before concrete is placed.
- B. Verify all field dimensions to insure close fit with work of other trades.
- C. Coordinate and install this division's work in proper sequence and cooperation with all other trades, to insure that total work is completed within contract time schedule.
- D. Check bearing surfaces for proper grade and lines before starting work. Report discrepancies to ARCHITECT for decision, prior to commencement of work.
- E. Obtain exact sizes and locations of openings required by other trades; and properly build around same.
- F. Build-in all required items as furnished by others.
- G. Safety during construction is the sole responsibility of the CONTRACTOR. Published standards (OSHA, etc.) and industry standards of good practices are to be followed.

**1.04 RELATED WORK IN OTHER DIVISIONS/SECTIONS**

Division 3:	Concrete
Division 5:	Metals
Division 7:	Thermal and Moisture Protection
Division 8:	Doors and Windows
Division 9:	Finishes

### 1.05 DELIVERY AND PROTECTION OF MATERIALS

- A. General: Handle all masonry units by competent careful workmen and by such methods as will prevent damage by chipping, mutilation or soiling. Avoid dumping from wheelbarrows and trucks and other rough handling.
- B. Concrete Masonry Products: Stack on planking with cells placed horizontally, keeping units freely ventilated. Deliver all units in dry condition. Keep dry during storage on job, and until 24 hours after they are laid in wall. If covered storage space is unavailable in building, cover with layer of polyethylene waterproof covering. Covering with loose sheets of felt or sisalkraft paper is not permitted.
- C. Mortar Products: Deliver materials dry. Keep dry until mixed.

### 1.06 WEATHER CONDITIONS

- A. During rainy weather, do all work only under cover. Do no masonry work whenever temperature drops below 40 deg. F. Protect all newly laid masonry from below 40 deg. F. temperatures for 36 hours after installation by enclosing and heating.

### 1.07 WORK NOT IN PROGRESS

- A. When work is stopped, whenever possible, bring continuous portions of walls to same level before stopping work. Keep tops of walls covered with non-staining non-absorbing waterproof covering. Extend covering down over two courses, on both sides. When work is resumed, clean top surfaces of loose mortar. Wet brick units thoroughly before resuming work.

## PART 2 - PRODUCTS

### 2.01 Mortar Materials: (Use products of domestic mfg.)

Portland Cement: Conform to ASTM C150, Type I or II

Masonry Cement: Conform to ASTM C91, Type II

Hydrated Lime: Conform to ASTM C-207, Type S

Sand: Conform to ASTM C-144, and pass a #16 mesh sieve

Water: Clean and fit to drink.

Waterproofing Admixtures: Use one of the following

(1) Anti-Hydro Company ..... "Anti-Hydro"

(2) A. C. Horn ..... "Hydratite Plus"

(3) Toch Brothers ..... "RIW Toxment"

(4) Hydrocide ..... "Powder"

### 2.02 STEEL REINFORCEMENT

- A. Joint Reinforcing shall be (Dur-O-Wal or equivalent products of AA Wire Products Co., Hohmann & Barnard, Inc., National Wire.): 9 gauge deformed welded wire. Truss type, or ladder type is approved for all single wythe masonry walls, width set individually for each wall width. Provide "Ladur-Eye" type for all cavity wall locations. Provide #6 rectangular (D/A 515) pintle tie sections sized for selected veneer wythes and cavity width. Use hot-dipped galvanized members ASTM A153 -Class B2, 1.50 ounce zinc coating.
  - 1. Provide prefabricated corners and tee sections (or approved field made method) to provide continuity at corners and intersections as required by part 3.22 herein. Corners size 30" x 30", tee 30" x 30".
- B. Reinforcing Bars: conform to ASTM A-615 "Deformed Billet Steel Bars for Concrete Reinforcement" grade 60. Bars to be free from flaws, cracks or other defects of rolling, true size and shape, and free of loose scales of rust. Bars to be free from heavy dirt, paint, grease, oil, or other destroyers of bond.
- C. Steel stirrups shall conform to ASTM A82, FY-60 KSI minimum. Stirrups shall be 5/16" diameter smooth rod and be formed to manufacturer's standard profile.

#### 2.03 COMPOSITE STEEL LINTELS

#### 2.04 PRECAST LINTELS

- A. Refer to Section 04 20 00 / Concrete Masonry.
- B. Reinforcing and grouting shall be as detailed on structural drawings.

#### 2.05 MASONRY WALL CLEANER

- A. "Sure-Kleen 600", or as approved.

#### 2.06 MORTAR PREPARATION

- A. Mortar Types and Proportions: see other sections of this division.
- B. Measuring and Mixing: Measure ingredients accurately using measuring devices approved by the ARCHITECT.  
Mix by machine, and as approved by ARCHITECT. Hand mixing is permitted only in small quantities. For grouting and pointing, mix as stiff as can be worked into joints.
  - 1. Place one half of sand and water in mixer, then add cement, lime, remainder of sand and water. Mechanically mix ingredients in batch mixer for period of not less than three (3) minutes.

Discard all mortar which remains unused 1 ½ hours after mixing time.  
Do not use materials containing lime where there is a possibility of "bleeding" thru finishes applied over masonry.

## 2. 08 WALL CONTROL/EXPANSION JOINTS

- A. Refer to Section 07 90 00 JOINT PROTECTION.
- B. Provided are general guidelines for the locations and sizes of joints. However, jointing design is dependent on the materials selected, the makeup of the materials, environmental conditions, and the architectural/structural design and detailing. Factors to be considered are:
  - 1. Temperature effects.
  - 2. Shrinkage effects.
  - 3. Creep.
  - 4. Stresses caused by the architectural/structural design.
  - 5. Moisture effects.
- C. All expansion and contraction joints shall be shown and detailed by the Engineer or Architect.
  - 1. Expansion joints in masonry shall be provided at the following locations:
    - a. Below shelf angles or structural frames supporting masonry walls or panels.
    - b. Above masonry walls or panels abutting structural frames.
    - c. At major changes in wall heights.
    - d. Near wall intersections.
    - e. At regular intervals, not to exceed 25'-0."
  - 2. Contraction joints in masonry shall be provided at the following locations:
    - a. At major changes in wall heights.
    - b. At changes in wall thickness.
    - c. Above joints in foundations.
    - d. At columns and pilasters.
    - e. At one or both sides of wall openings.
    - f. Near wall intersections.
- D. Critical construction joints shall be planned for and shown on the drawings, with guidelines for other construction joints specified in Section 03 30 00/Cast-In-Place Concrete, to be prepared as a part of the contract documents. Other proposed construction joints as specified in Section 03 30 00 shall be submitted by the Contractor to the Engineer for review and approval during construction.

## PART 3 - EXECUTION

### 3.01 LAYOUT

- A. Lay all masonry by workmen who are skilled in their trade. Lay in bonding required in other sections of this division with joints plumb and courses straight. Course interior wall out to match exterior wall coursing. Shim base course or cut if necessary to course out. Mark location of all reinforcing dowels (filled cells) plainly on floor or lowest course of block.

### 3.02 EXECUTION

- A. Lay-up: do not move masonry units after they are mortared in place. If adjustments are required, remove units and replace using fresh mortar. Lay all masonry units with 3/8" maximum width full head and bed joints in both horizontal and vertical joints.
- B. Pattern Bond: lay CMU wall units in common-running bond with vertical joints in each course centered on units in courses above and below unless otherwise indicated. Bond and interlock each course at corners and at intersections. Do not interlock bearing walls with non bearing partitions. Use special-shaped units where shown, and as required for corners, jambs, sash, control joints, lintels, bond beams and other special conditions.
- C. Maintain vertical continuity of cell cavities. Cells which are to be reinforced and grouted to provide minimum clear dimension indicated and to provide minimum clearance and grout coverage for vertical reinforcement bars. Keep cavities free of mortar. Solidly bed webs in mortar where adjacent to reinforced cores or cells.
- D. Where horizontal reinforced beams (bond beams) are shown, use special units or modify regular units to allow for placement of continuous horizontal reinforcement bars. Place cavity cups in mortar joints under bond beam courses over cells of non-reinforced masonry.
- E. Joint Reinforcing: set in all concrete masonry walls, 6" thick and thicker, including ties to all brick veneer. Lay at 16" o.c. vertical (unless noted otherwise on drawings) in all exterior and interior walls in continuous horizontal courses in full mortar beds, and to include joint reinforcing at 1st and 2nd masonry courses above and below wall openings, building in reinforcing as work progresses. Reinforcing shall extend a minimum of 24" into wall from edge of each opening. Lay in all horizontally-bonded masonry walls. Comply with Florida Building Code, using the specified prefabricated tees and corners for all intersections of wall and all inside and outside corners.
- F. Setting Iron Work: set all loose lintels, anchors, sleeves, inserts, etc. in exact locations; true and level in full beds of mortar set as a part of masonry work, not

before. Lay brick to bear against all anchors to prevent slippage. Completely cover all anchors and other similar work with mortar or grout.

1. Construction Tolerances: the finished brick veneer plane is not to vary more than 1/4" from plumb. Shelf angle shall be sized so that the outer edge of the outstanding leg is 3/4" from exterior wall surface unless detailed otherwise. Shims, if required, are to be square horseshoe shape galvanized and placed at each embedded insert or anchor bolt and tack welded in place. Maximum shim allowable is 1". Note that lengths of bolts supporting shelf angles could vary because of differing tolerances of various components of building structure.
- G. Setting Grounds: build all grounds and nailing blocks required for fastening of all trim and other finish, into wall. Install nailing blocks for fastening of grounds, wood trim, and other materials required to be fastened to walls.
- H. Metal Frames: set frames true, plumb, level and out of wind. Use a minimum of 4 wire type anchors on each side of the door frame. Anchors should be installed at hinge areas on frame. Anchors should be designed so that wire will be completely encased in the concrete grout and/or mortar joints. Fasten door frame to floor with two pins on each side. Build masonry tight to frames. Solidly fill all voids and grout all jambs and heads including intermediate mullions. Build frames into masonry as work progresses. Pieces shorter than 4 inches are not permitted. Rake all mortar joints at frames  $\pm 1/2$ " deep, for caulked joint specified in other section(s).
- I. Cutting and Chases: avoid cutting of masonry units. Where it cannot be avoided, cut with a masonry saw in neat and regular manner, with all edges true, and no exposed faces chipped/spalled. Cut masonry carefully and accurately to fit and conceal all heating, plumbing and electrical pipes, conduits, and ductwork; and fit neatly around all openings, equipment, and access doors and panels. Coordinate all masonry work with respective trades. Leave chases in walls as required by other trades.
- J. Setting of Lintels: install precast and/or composite steel lintels over all openings. Set lintels in place with joints pointed to match adjacent work. Build in lintels, reinforce and fill with structural concrete grout as work progresses. Refer to Section 04200 / Concrete Masonry.
- K. Placing Grout: Refer to Section 04 20 00 / Concrete Masonry.
- L. MASONRY WALL CONTROL/EXPANSION JOINTS
1. Locate expansion joints to accommodate anticipated expansion at abrupt changes in the structure, where butting up to existing structures, and at least one corner of windows, doors, and other rectangular openings.
  2. The spacing of joints shall be contingent on the material's capacity to sustain expansion without damage to the concrete or masonry (usually based on the

- amount of reinforcing).
3. Structural reinforcing shall be discontinuous across the joint. Terminate reinforcing a minimum of two (2) inches from the faces of the joint.
  4. Smooth reinforcing dowels, properly detailed, shall be provided to prevent movement out of the plane of the vertical surface and to provide for shear transfer (as required).
  5. The minimum expansion joint width shall be 1/4".
  6. Expansion joints shall be sealed. Refer to Section 07 90 00/Joint Protection.
  7. Where applicable, waterstops shall be provided for watertightness.

### 3.03 POINTING AND CLEANING

- A. After jointing and pointing is completed and joints set up hard, clean all exposed concrete masonry surfaces with clear water and stiff fiber brushes. Leave concrete and masonry clean, free of mortar daubs and with tight mortar joints throughout.

### 3.04 MASONRY WALL HEIGHTS

- A. Refer to wall sections, elevations and reflected ceiling plan and other drawings to verify all wall heights. Adequately brace and support walls in place.

### 3.05 JOINTS AT OVERHEAD STRUCTURE

- A. At all joints where non-bearing masonry walls are laid to underside or edge of any structural slab, joist, or beam allow 1/2" wide open unmortared joint for possible deflection. Firmly pack joint with oakum or glass fiber batt insulation material. At fire rated locations use an approved U.L. rated material.

END OF SECTION 04 20 00

## **SECTION 04 22 00 / CONCRETE MASONRY**

### **PART 1 - GENERAL**

#### **1.01 RELATED DOCUMENTS**

- A. Conform to Division 1, Section 04 20 00 and other sections of this division.

#### **1.02 APPLICABLE CODES AND STANDARDS**

- A. Florida Building Code - latest edition adopted in building area.  
Building Code Requirements for Masonry Structures (ACI 530-99 / ASCE 5-99 / TMS 402-99).  
Specification for Masonry Structures (ACI 530.1-99 / ASCE 6-99 / TMS 602-99).

#### **1.03 QUALITY ASSURANCE**

- A. Codes and Standards: Comply with the provisions of the following codes, specifications, and standards, except as otherwise shown or specified.
1. ACI 550-99/ASCE-5-99 Building Code Requirements for Masonry Structures.
  2. ACI 530-1-99/ASCE 6-99 Specifications for Masonry Structures.
  3. NCMA-TEK 70A Concrete Masonry Prism Strength.
  4. NCMA-TEK 132
  5. NCMA-TEK 23A Grouting for Concrete Masonry Walls.
  6. NCMA-TEK 65 Field Inspection of Engineered Concrete Masonry.
  7. ASTM-C140 Standard Methods of Sampling and Testing Concrete Masonry Units.
  8. Comply with ALL NCMA-TEX Standards.
- B. Changes in the source or brand of masonry materials during construction will require resubmission and re-testing at the Contractor's expense.
- C. Fire Performance Characteristic: Where indicated, provide materials and construction identical to those of assemblies whose fire resistance has been determined per ASTM E 119 by testing and inspection organization, by equivalent concrete masonry thickness, or by other means acceptable to authorities having jurisdiction.

#### **1.04 TESTS OF CONCRETE MASONRY PRISMS.**

- A. For grout filled and reinforced or un-reinforced concrete masonry or brick masonry wall construction tests for the compressive strength of prisms as described in ASTM E447.
1. Provide a minimum of one set of 3 masonry prisms for testing per each 5000 square feet of masonry wall construction as required on the Structural Masonry Plan in the Drawings.

- B. Submit written reports for each prism tested. Provide the project identification name and number, date of report, name of Contractor, name of Testing Service, name of material suppliers, specific location where masonry represented by the prism is used, test results, and values specified in the referenced specification. Indicate whether or not tested prism is acceptable for intended use.
- C. If the compressive strength tests fail to meet the minimum requirements specified, the concrete masonry represented by such tests shall be considered deficient in strength.
- D. Deficient masonry construction shall be removed and replaced by the Contractor without additional costs to the Owner. In lieu of removal and replacement, additional cores may be grouted as required and directed by the Architect without additional cost to the Owner.
- E. Make one compression test set of three specimens (per 2.02) for each 20 cubic yards or less of grout placed in one day or a single pour event. Laboratory is to have complete freedom to take and make specimens at any time and place in pour, pick up specimens and make all tests themselves.

Standard age of tests is to be 28 days. Minimum compressive strength of specimen is design compressive strength. Test two cylinders at 28 days and the average value is to be used as test result. Hold 3<sup>rd</sup> cylinder for further testing if instructed by Owner or Architect.

## PART 2 - PRODUCTS

### 2.01 MORTAR MATERIALS

- A. Refer to Section 04 20 00/Masonry, General.

### 2.02 STEEL REINFORCEMENT

- A. Refer to Section 04 20 00/Masonry, General.

### 2.03 MASONRY WALL CLEANERS

- A. Refer to Section 04 20 00/Masonry, General.

### 2.04 MASONRY WALL CONTROL EXPANSION JOINTS

- A. Refer to Section 04 20 00/Masonry, General.

### 2.05 CONCRETE MASONRY UNITS

A. STANDARD WEIGHT CONCRETE MASONRY UNITS

1. Conform to ASTM C90-01a, grade "N", Type II, 8" x 16" modular units, width as indicated on the drawings, minimum 1" face shells. Units 8" or more thick must have minimum 1 1/4" face shells. Aggregate is to be gravel, air-cooled blast furnace slag, or crushed stone. Units are to be acceptable visually, structurally, and free from undesirable defects resulting from either manufacturer or handling, as judged by ARCHITECT.
2. Provide Class D-2 with foam Core-Fill 500 or equivalent for walls that have two or three hour ratings.
3. Sound transmission loss through 4" unpainted unplastered wall, must not measure less than 36 decibels.
4. Linear drying shrinkage must not be greater than 0.04% when tested as prescribed by National Bureau of Standards.
5. Moisture content at time of delivery must not exceed 75% of relative humidity, as measured by approved methods of Portland Cement Association.
6. Units which have not been subjected to an approved method of steam curing must be stored for 30 days prior to use

B. ACCESSORY UNITS

1. 8" x 8" x 16" and 12" x 8" x 16" thick header block at locations indicated.
2. 8" x 16" and 12" x 16" knock out cut-lintel units, thickness as indicated.
3. Furnish regular corner, half, and half corner units; and all lintel and half block units as required by conditions shown on architectural and structural drawings.
4. Provide bullnosed block at all exposed corners except for split rib block.
5. Furnish half and half corner units of Split Rib block.

2.06 GROUT MATERIALS

- A. Refer to Sections 03 00 00/Concrete, General and 03 30 00/Cast-In-Place Concrete.

2.07 MORTAR PREPARATION

- A. Conform to ASTM C270 for procedures. Proportion as Florida Building Code, Type M or S, for concrete masonry.

2.08 PRECAST WINDOW SILLS

- A. See drawings.

2.09 PRECAST LINTELS

- A. High strength precast and pre-stressed concrete lintels designed to be used unfilled or filled to form a composite reinforced concrete beam using concrete masonry units equal to 'Cast-Crete'. Concrete lintels are only allowed at concealed locations.

### PART 3 - EXECUTION

#### 3.01 GENERAL

- A. Refer to Section 04 20 00/Masonry, General.
- B. Conform to referenced codes.
- C. No wetting of concrete masonry units is permitted. All openings in walls to have concrete-filled reinforced lintels, unless otherwise indicated on drawings.
- D. Refer to Section 04 20 00/Masonry, General for sample panel requirement.

#### 3.02 COURSING AND JOINTING

- A. Concrete Masonry - Lay all units plumb and true to line, with uniform 3/8" joints, and in running bond. Joints wider than 3/8" will be rejected.  
Lay to course out at 8 inch centers.
- B. Strike all joints flush, after mortar has partially set, and sack or float walls head joints to give smooth uniform appearance and tool all horizontal joints concave where walls are to be left exposed. At stucco or hard tile locations delete tooling of joints.

#### 3.03 LAYING MASONRY UNITS

- A. For bonding masonry to concrete foundation or floor slabs, concrete to be clean with laitance removed and aggregate exposed.
- B. Lay starting joint with full mortar coverage on the joint; except that areas where grout occurs are to be free of mortar so that grout will contact concrete.
- C. Units shall be laid to preserve vertical continuity of cells to be filled. The vertical alignment shall be sufficient to maintain a clean, unobstructed flue measuring not less than 3"x3". Place no units or cut pieces of masonry less than 4" nominal.
- D. In placing mortar in horizontal joints, completely cover the face shells of each unit with mortar. Solidly fill all head joints to the thickness of the face shell and shove units tightly in place. Solidly bed in mortar all head and cross web bed joints adjacent to cells to be grouted to prevent leakage of mortar.
- E. Lay designated walls in two separate wythes, with insulated cavity as indicated.
- F. Anchor and bond intersecting masonry walls with 50% masonry bond, except as noted otherwise on drawings.
- G. Install precast and/or composite steel lintels over all openings. Set lintels in place with joints pointed to match adjacent work. Build in lintels, reinforce and fill with structural

concrete grout as work progresses.

1. Steel lintels shall be provided with 6" minimum structural bearing each side of openings.
  2. Pre-cast concrete lintels shall be provided with 8" minimum structural bearing each side of openings.
  3. Typical steel and cut masonry lintels, even if not shown on structural or architectural drawings, shall be reinforced with a minimum of 1 #5 bar continuous (extend 12" minimum each end) and grouted solid.
  4. Concrete masonry work shall not proceed beyond the elevation of door and window headers until all vertical reinforced cells and reinforced horizontal lintels have been grouted.
- H. At hard tile locations take extra care in laying units such that wall will be suitable for thinset tile installation directly to wall. Grind any unevenness judged unacceptable by ARCHITECT.
- I. Install wall control/expansion joints at 20 ft. o.c. and/or as shown and detailed on architectural/engineering drawings. Refer to Sections 04 20 00/Masonry, General and 07 90 00/ JOINT PROTECTION.

### 3.04 CUTTING

- A. Do all cutting of block with carborundum or equivalent saw. To facilitate proper coursing, half blocks may be used to reduce amount of cutting. No masonry will be permitted to be used if not cut properly. Masonry broken by "blows" will be replaced, even if after the wall has been completed.

### 3.05 PLACING STEEL REINFORCEMENT

- A. Reinforcing steel to be straight, except for bends around corners and as detailed otherwise on drawings. Lap reinforcing steel 48 bar diameters minimum. Place vertical bars in exact center of cells, or as otherwise indicated, and hold in position at top and bottom and at intervals not to exceed 96 bar diameters. Vertical cavity rebars to be run in maximum possible lengths, 5'-0" minimum, using low lift grouting procedures.
- B. Completely embed joint reinforcement in mortar or grout. Lap splices 6 inches minimum at all locations.
- C. Lap dowels in footings to vertical steel in masonry columns by placing in aligned cells, then grouting cells to obtain bonded lap between wall and footings.
- D. Reinforce and grout all reinforced horizontal block courses as wall is built-up.

### 3.06 PLACING GROUT

- A. Insure all walls are cured minimum of three (3) days, and are solid, or braced against movement, during grouting. No one is to "walk" the walls. Notify ARCHITECT minimum of 24 hours or one full working day before start of each grouting operation.
- B. CONTRACTOR is to use only low-lift grouting procedure unless otherwise authorized by ARCHITECT and OWNER.
  - 1. Grout lifts that exceed 5'-0" must have prior approval of the OWNER. Contractor shall neatly saw-cut cleanout/inspection holes or provide manufactured inspection blocks at the bottom of all reinforced vertical cells for grout lifts greater than 5'-0".
- C. Grouting of reinforced vertical cells shall occur at intervals to allow grouting of all composite steel and/or precast lintels. Concrete masonry shall not be installed above lintels prior to grouting of all lintels.
- D. Consolidate all grout at time of pouring by puddling or vibrating and then reconsolidate by again puddling later before plasticity is lost. Stop grout pour 1 1/2" below top unit to form construction joint for subsequent pours. Neatly sawcut and provide cleanout/inspection hole at the bottom of all cells to be filled with grout when pour, if authorized, exceeds 5'-0" in height.
- E. CONTRACTOR has sole responsibility of completing masonry and grouting operations necessary to construct a sound load-bearing crack-free wall.
- F. Properly cure grout placed in horizontal reinforced precast concrete lintels minimum seven (7) days.

3.07 All masonry walls, if not receiving a formed and poured concrete beam at top and even if not shown on structural or architectural drawings, are to receive as a minimum a top knockout lintel block course, reinforced with 1 #5 bar continuous and filled with concrete grout.

### 3.08 WATERPROOFING

- A. Refer to Division 7 for waterproof coating installed over concrete and masonry surfaces and elsewhere.
- B. Masonry CONTRACTOR is responsible for providing a uniformly regular surface prior to application of coating, with full and tight joints between concrete block units and other embedded items. Remove projecting mortar and fill all joints and voids.

### 3.09 WALL FLASHING

- A. Refer to Section 04 20 00/Masonry, General for installation of wall flashings.

### 3.10 PRECAST WINDOW SILLS

- A. Install in maximum available lengths, set in full mortar bed. Thin sills are prohibited.

### 3.11 POINTING AND CLEANING

- A. Refer to Section 04 20 00/Masonry, General.

END OF SECTION 04200

**SECTION 05 13 00 / MISCELLANEOUS METAL ITEMS**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Conform to Division 1, Section 05 00 00 and other sections of this division.

**PART 2 - PRODUCTS, GENERAL**

**2.01 STEEL AND SUNDRY ITEMS**

- A. Conform to Section 05 00 00.

**2.02 CASTINGS**

- A. Conform to ASTM A-48 for grey iron and A-47 for malleable iron castings.

**2.03 PRIMER PAINT**

- A. Conform to Section 05 00 00.

**2.04 FABRICATION**

- A. Conform to Section 05 00 00.

**2.05 SHOP PAINTING**

- A. Conform to Section 05000. Shop prime all items specified herein unless indicated to be galvanized.

**2.06 HANDLING AND MARKING**

- A. Conform to Section 05 00 00.

**PART 3 - EXECUTION**

**3.01 GENERAL**

- A. Conform to Section 05 00 00.

**3.02 LOOSE LINTEL AND SHELF ANGLES**

- A. Provide as indicated on the drawings, and in the judgement of the ARCHITECT, as required for openings which do not receive precast concrete or masonry lintels. Where loose lintels are indicated to bear onto masonry, size lintels to provide 1 inch of bearing

on each jamb per foot of clear opening, but not less than 6 nor more than 12 inches bearing. Set to course with masonry coursing. Provide bolts and nuts as required. Hot dip galvanize.

### 3.05 ROOF OPENING AND EQUIPMENT SUPPORT FRAMING

- A. Steel angles as detailed. Minimum angle size 3" x 3" x 1/4" with angle provided on all four sides of openings over 6" x 6" size. Weld framing to roof structural members.

### 3.06 BOLLARD POST

- A. 6" dia. standard steel pipe welded assembly, galvanized, set in concrete footings as indicated. Fill with concrete, leaving top rounded and smooth. Painting by Division 9.

END OF SECTION 05 13 00

## **SECTION 06 10 00 / ROUGH CARPENTRY**

### **PART 1 - GENERAL**

#### **1.01 RELATED DOCUMENTS**

- A. Conform to Division 1 and other sections of this division.

### **PART 2 - PRODUCTS**

#### **2.01 FRAMING AND FURRING LUMBER**

- A. Number 2 dimension, conforming to "Grading Rules for Southern Pine Lumber", latest edition, or equivalent grade West Coast Fir or Cedar. Show grade stamps on all lumber. Sizes are shown on drawings.
- B. Pressure treat all wood members which are installed in contact with masonry, concrete or steel with waterborne 0.40 lbs of CCA preservative per cu. ft., as manufactured by Hoover Treated Wood Products, Inc., Chemical Specialties, Inc., or approved equal in accordance with American Wood Preservers Bureau (A.W.P.B.) Standard LP-2.

#### **2.02 PLYWOOD**

- A. DFPA exterior type AC Fir. Use utility grades for all work not exposed to view.
- B. Birch veneer, 2 sides, with matching solid edge trim.

#### **2.04 NAILS AND OTHER FASTENERS**

- A. Nails, bolts, lag screws and other fasteners to be standard products of types and sizes suitable for intended use. Use galvanized fasteners on all exterior work and for framing in toilet and bath areas. Use finishing nails where face nailing is required for all finish work.
  - 1. Use expansion lead shields and screws or "Tapcon" concrete fasteners for wood-to-concrete and wood-to-masonry connections.
  - 2. Use cast-in bolts for wood-to-concrete connections, wherever shown on drawings.
  - 3. Use black iron bolts, nuts, and washers; or lag bolts; for all wood-to-steel connections.
  - 4. Use power driven fasteners sized appropriate to material thickness for certain wood-to-concrete or masonry and wood-to-steel installations where approved by the ARCHITECT and OWNER.

### PART 3 - EXECUTION

#### 3.01 GENERAL

- A. Erect all work plumb and true to line. Securely fasten in place by means of nails, bolts, screws, straps, or other appropriate fasteners. Provide washers under heads of lag screws and under both heads and nuts of bolts where both are in contact with wood. Attach wood to steel by means of bolts with heads and/or nuts countersunk where required. Neatly make joints. Carefully perform workmanship as judged by ARCHITECT. Refer to drawings for location and configuration of work.

#### 3.02 BLOCKING, FRAMING AND FURRING

- A. Install miscellaneous framing lumber, furring, blocking, and grounds for other trades as indicated on drawings, and elsewhere as judged by ARCHITECT. This includes but is not limited to:
1. Blocking for fascia system and roof edge blocking, if required.
  2. Continuous framing for roof penetrations, where required.
  3. Solid wood support framing minimum 2x8 in all framed wall systems for wall-hung millwork, chalkboards/tackboards, wall hung lavatories, water coolers, toilet room accessories, hardware items or other equipment.
  4. Plywood backboard for telephone/data equipment.
  5. P.T. 1x4 furring under roof sheathing.
  6. Solid wood blocking behind door stops in stud walls.

#### 3.03 ROOF CURB CONSTRUCTION

- A. Self-Curbed Roof-Penetrating Items: install pressure treated wood blocking for proper fastening and support of equipment; bolt wood blocking to metal roof frame. See drawings for details and sizes.
- B. Set all roof curb sides plumb and tops level, unless indicated otherwise on the drawings.

END OF SECTION 06 10 00

**SECTION 06 20 00 / FINISH CARPENTRY**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1 and other sections of this division.

PART 2 - PRODUCTS

2.01 FINISH LUMBER

- A. Oak Trim: Clear red oak, sizes as indicated.

2.02 NAILS AND OTHER FASTENERS

- A. Nails, bolts, lag screws and other fasteners to be standard products of types and sizes suitable for intended use. Use galvanized fasteners on all exterior work and for framing in toilet and bath areas. Use finishing nails where face nailing is required for all finish work.

PART 3 - EXECUTION

3.01 GENERAL

- A. Erect all work plumb and true to line. Securely fasten in place by means of nails, bolts, screws, straps, or other appropriate fasteners. Provide washers under heads of lag screws and under both heads and nuts of bolts where both are in contact with wood. Attach wood to steel by means of bolts with heads and/or nuts countersunk where required. Neatly make joints. Carefully perform workmanship as judged by ARCHITECT. Refer to drawings for location and configuration of work.

3.02 MISCELLANEOUS FINISH CARPENTRY

- A. Install shapes and profiles as detailed using galvanized finishing nails or other suitable fastener. Set nail heads, or countersink screws with wood plugs for finish by Division 9.

END OF SECTION 06 20 00

**SECTION 07 00 00 / THERMAL AND MOISTURE PROTECTION, GENERAL**

**PART 1 - GENERAL**

**1.01 CONTRACT PROVISIONS**

- A. Conform to Division 1, General Requirements, which applies to all sections of this Division 7. Provisions of this Section 07 00 00 also apply to all sections of this Division 7. The articles contained in this section may modify, delete or add to the provisions of the conditions of the Contract.

**1.02 FIELD MEASUREMENTS AND COORDINATION**

- A. Verify all field dimensions to insure close fit with work of other trades.
- B. Coordinate and install this division's work in proper sequence, and in cooperation with all other trades. Insure that total work is completed within contract time schedule.

**1.03 RELATED WORK IN OTHER DIVISIONS/SECTIONS**

Division 6:	Wood and Plastic Laminates
Division 7:	Thermal and Moisture Protection
Division 8:	Doors and Windows

**1.04 ACCEPTANCE OF SURFACES**

- A. Prior to commencement of work, inspect all surfaces to receive work. Verify that work of other trades which penetrates roof deck or requires men and equipment to traverse roof deck has been completed. Examine surfaces for inadequate anchorage, foreign material, moisture, and unevenness which would prevent the execution and quality of application of roofing system as specified. Do not proceed with application of roofing system until defects are corrected.
- B. Notify ARCHITECT in writing of any conditions which in CONTRACTOR'S judgement prevent installation meeting all requirements of this specification. Beginning of work constitutes CONTRACTOR'S acceptance of surfaces.

**1.05 PREFABRICATION**

- A. Shop fabricate and assemble items to maximum extent possible and practicable; to permit installation with minimum amount of field assembly.

**1.06 ELECTROLYSIS PREVENTION**

- A. Give all portions of metals which come in contact with masonry or concrete two (2) coats of bituminous paint. When two dissimilar light metals come in contact, paint each contact surface with one (1) coat of bituminous paint.

#### 1.07 QUALIFICATIONS

- A. Perform all work specified herein only by recognized firm regularly engaged in performing this type of work.

#### 1.08 SPECIAL MATERIAL DELIVERY AND HANDLING INSTRUCTIONS

- A. Deliver materials in manufacturer's original, unopened containers and rolls with labels intact and legible. Deliver materials requiring fire resistance classification to the job with labels attached and packaged as required by labeling service.
- B. Deliver materials in sufficient quantity to allow continuity of work.
- C. Handle rolled goods so as to prevent damage to edge or ends. Select and operate material handling equipment so as not to damage existing construction or applied roofing.
- D. Store all roofing materials on clean raised platforms with weather protective covering when stored outdoors. Store rolled goods on end. Provide continuous protection of materials against wetting and moisture absorption. Protect materials against damage by construction traffic.
- E. Remove wet materials from project site.
- F. Store emulsions in temperature above 40 deg. F.

#### 1.09 AFFIDAVIT AND GUARANTEE-WARRANTY

- A. Roofing and roof flashing subcontractor(s) jointly furnish OWNER affidavit signed by all parties, then notarized, stating that all products and execution meet standards specified in this division.
- B. Both CONTRACTOR and roofing subcontractor(s) responsible for this division's work; deliver separately and jointly three (3) copies of notarized letters to OWNER guaranteeing maintenance of complete:  
(1) roof and roof flashing; (2) membrane, and; (3) caulking systems against leakage for two (2) years dating from OWNER'S official acceptance of building

END OF SECTION 07 00 00

**SECTION 07 22 00 / THERMAL AND SOUND INSULATION**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Conform to Division 1, Section 07000 and other sections of this division.

**1.02 RELATED WORK IN OTHER DIVISIONS/SECTIONS**

Divisions 9: Finishes

- 1.03 The intent of this specification is that all exterior walls adjacent to ventilated occupied and/or air-conditioned spaces and interior walls separating air conditioned space from non air conditioned space are to receive insulation from the lowest floor level, full height to attic barrier and insulation above.

**PART 2 - PRODUCTS**

**2.01 EXTERIOR WALL INSULATION**

- A. ¾" (unfaced), polyisocyanurate insulation: 16" W and/or 24" W and roll goods, widths as required by maximum lengths available. Wall insulation shall be behind ¾" furring channels. Refer to Paragraph 3.02 this section.  
Nominal ¾" thick - R-5, Class 'A'

**2.02 CEILING INSULATION**

- A. Fiberglass batts (unfaced), 16" & 24"W x 48"L and roll goods, widths as required by maximum lengths available. Refer to Paragraph 3.03 this section.  
Nominal 6" thick - R-19, Class 'A'

**2.03 SOUND ATTENUATION INSULATION**

- A. CertainTeed, Owens-Corning Fiberglass Corp., or as approved, sound attenuation batts for metal framing, 3 1/2" thick x 96" long, width as required, for friction fit. Insulation shall be Class 'A'.

**2.04 MINERAL FIBER SOUND INSULATION**

- A. USG, or as approved, 3" thick, sound rated mineral fiber batts, 2 lb./cu.ft. density.

**2.05 FASTENERS, CLIPS, SUPPORTS, ADHESIVE, ETC.**

- A. Materials suitable for installation conditions to support insulation securely and permanently in place.

### PART 3 - EXECUTION

#### 3.01 GENERAL

- A. Building(s) shall be dried in prior to installation of insulation and insulation shall be kept dry at all times. Insulation which becomes wet shall be removed and replaced with new dry material.

#### 3.02 CEILING (BATT INSULATION)

- A. Install batts in walls, plenum closure studwork and ceilings where indicated on drawings. Securely fasten to ceiling panels with pins to prevent sagging. Batt's are not to be compressed. Size batts to suit framing spacing. Install similar unfaced material packed in voids of metal deck above concrete beams, stud walls and plenum dividers as indicated on drawings. Lay batts over ceiling areas where indicated, shoved tightly into place.
  - 1. R-11 Batt's: Install in nominal 6" metal stud/drywall partitions and metal stud/drywall framed plenum dividers/ barriers as shown on drawings.

#### 3.03 SOUND ATTENUATION BATT'S

- A. Install in all metal stud framed walls unless specifically indicated otherwise. Install 2 1/2" batt's in nominal 4" walls, and 3 1/2" batt's in 6" walls unless noted otherwise.

END OF SECTION 07 22 00

## **SECTION 07 90 00 - JOINT SEALANTS**

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes sealants for the following applications, including those specified by reference to this Section:
- B. This Section includes sealants for the following applications:
  - 1. Exterior joints in the following vertical surfaces and nontraffic horizontal surfaces:
    - a. Control and expansion joints in unit masonry.
    - b. Perimeter joints between materials listed above and frames of doors and windows.
    - c. Other joints as indicated.
  - 2. Exterior joints in the following horizontal traffic surfaces:
    - a. Control, expansion, and isolation joints in cast-in-place concrete slabs.
    - b. Other joints as indicated.
  - 3. Interior joints in the following vertical surfaces and horizontal nontraffic surfaces:
    - a. Control and expansion joints on exposed interior surfaces of exterior walls.
    - b. Perimeter joints of exterior openings where indicated.
    - c. Tile control and expansion joints.
    - d. Vertical control joints on exposed surfaces of interior unit masonry and concrete walls and partitions.
    - e. Perimeter joints between interior wall surfaces and frames of interior doors, windows, and elevator entrances.
    - f. Joints between plumbing fixtures and adjoining walls, floors, and counters.
    - g. Other joints as indicated.

#### 1.3 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

- B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

#### 1.4 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

#### 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose work has resulted in joint-sealant installations with a record of successful in-service performance.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.
- B. Store and handle materials in compliance with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

#### 1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not proceed with installation of joint sealants under the following conditions:
  1. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer.
  2. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 40 deg F.
  3. When joint substrates are wet.
- B. Joint-Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.

- C. Joint-Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

## 1.8 WARRANTY

- A. General Warranty: Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Special Installer's Warranty: Written warranty, signed by Installer agreeing to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
  - 1. Warranty Period: Two years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PRODUCTS AND MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products specified in the sealant schedules at the end of Part 3.

### 2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range for this characteristic.

### 2.3 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealant Standard: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant in the Elastomeric Joint-Sealant Schedule at the end of Part 3, including those referencing ASTM C 920 classifications for type, grade, class, and uses.
- B. Additional Movement Capability: Where additional movement capability is specified in the Elastomeric Joint-Sealant Schedule, provide products with the capability, when tested for adhesion and cohesion under maximum cyclic movement per ASTM C 719, to withstand the specified percentage change in the

joint width existing at the time of installation and remain in compliance with other requirements of ASTM C 920 for uses indicated.

- C. Suitability for Contact with Food: Where elastomeric sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.

## 2.4 LATEX JOINT SEALANTS

- A. Latex Sealant Standard: Comply with ASTM C 834 for each product of this description indicated in the Latex Joint-Sealant Schedule at the end of Part 3.

## 2.5 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, of type indicated below and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
  - 1. Type C: Closed-cell material with a surface skin.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

## 2.6 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from pre-construction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants with joint substrates.
- C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint sealant manufacturer's written instructions and the following requirements:
  - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
  - 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air. Porous joint surfaces include the following:
    - a. Concrete.
    - b. Masonry.
    - c. Unglazed surfaces of ceramic tile.
  - 3. Remove laitance and form-release agents from concrete.
  - 4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
    - a. Metal.
    - b. Glass.
    - c. Porcelain enamel.
    - d. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates. Apply primer to comply with joint sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

### 3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
  - 1. Do not leave gaps between ends of sealant backings.
  - 2. Do not stretch, twist, puncture, or tear sealant backings.
  - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and back of joints.
- E. Install sealants by proven techniques to comply with the following and at the same time backings are installed:
  - 1. Place sealants so they directly contact and fully wet joint substrates.
  - 2. Completely fill recesses provided for each joint configuration.
  - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Non-sag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
  - 1. Remove excess sealants from surfaces adjacent to joint.
  - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  - 3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

### 3.4 CLEANING

- A. Clean off excess sealants or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

### 3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from the original work.

### 3.6 ELASTOMERIC JOINT-SEALANT SCHEDULE

- A. Mildew-Resistant Silicone Sealant: Where joint sealants of this type are indicated, provide products formulated with fungicide that are intended for sealing interior ceramic tile joints and other nonporous substrates that are subject to in-service exposures of high humidity and temperature extremes, and that comply with the following:
  1. Products: Provide one of the following:
    - a. 786 Mildew Resistant; Dow Corning.
    - b. Sanitary 1700; GE Silicones.
    - c. 898 Silicone Sanitary Sealant; Pecora Corporation.
    - d. Tremsil 600 White; Tremco.
  2. Type and Grade: S (single component) and NS (nonsag).
  3. Class: 25.
  4. Use Related to Exposure: NT (nontraffic).
  5. Uses Related to Joint Substrates: G, A, and, as applicable to joint substrates indicated, O.
  6. Applications: Joints between plumbing fixtures and walls , floors, counters, Joints in tile, Joints in kitchens and toilet rooms.
- B. Multicomponent Nonsag Urethane Sealant: Where joint sealants of this type are indicated, provide products complying with the following:
  1. Products: Provide one of the following:
    - a. Vulkem 922; Mameco International.
    - b. Dynatrol II; Pecora Corporation.
    - c. Sikaflex - 2c NS; Sika Corporation.
    - d. DYmeric 511; Tremco.
  2. Type and Grade: M (multicomponent) and NS (nonsag).
  3. Class: 25.
  4. Additional Movement Capability: 50 percent movement in extension and 50 percent in compression for a total of 100 percent movement.
  5. Use Related to Exposure: NT (nontraffic).
    - a. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
  6. Applications: Joints control and expansion joints in unit masonry,, perimeter joints between materials listed above and frames of doors and windows.

- C. Multicomponent Pourable Urethane Sealant: Where joint sealants of this type are indicated, provide products complying with the following:
1. Products: Provide one of the following
    - a. Chem-Calk 550; Bostik Inc.
    - b. Vulkem 255; Mameco International.
    - c. Pourthane; W.R. Meadows, Inc.
    - d. Elasto-Thane 920 Pourable; Pacific Polymers, Inc.
    - e. NR-300 Urexpam, Type M; Pecora Corporation.
    - f. PSI-551/RC-2; Polymeric Systems, Inc.
    - g. Sikaflex - 2c SL; Sika Corporation.
    - h. SL 2; Sonneborn Building Products Div., ChemRex Inc.
    - i. THC-901; Tremco.
  2. Type and Grade: M (multicomponent) and P (pourable).
  3. Class: 25.
  4. Use[s] Related to Exposure: T (traffic)
  5. Uses Related to Joint Substrates: M, A, and, as applicable to joint substrates
  6. Applications: Control, expansion, and isolation joints in cast-in-place concrete slabs.

### 3.7 LATEX JOINT-SEALANT SCHEDULE

- A. Latex Sealant: Where joint sealants of this type are indicated, provide products complying with the following:
1. Products: Provide one of the following:
    - a. Chem-Calk 600; Bostik Inc.
    - b. AC-20; Pecora Corporation.
    - c. PSI-701; Polymeric Systems, Inc.
    - d. Sonolac; Sonneborn Building Products Div., ChemRex, Inc.
    - e. Tremflex 834; Tremco.
    - f. Applications: Control and expansion joints on exposed interior surfaces of exterior walls, perimeter joints of exterior openings where indicated, vertical control joints on exposed surfaces of interior unit masonry and concrete walls and partitions, perimeter joints between interior wall surfaces and frames of interior doors, windows, and elevator entrances.

END OF SECTION 07 9 0 00

**SECTION 08 10 00 / DOORS & WINDOWS, GENERAL/LEGEND**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, General Requirements, which applies to all sections of this Division 8. Provisions of this Section 08000 also apply to all sections of this Division 8. The articles contained in this section may modify, delete or add to the provisions of the conditions of the Contract.

1.02 FIELD MEASUREMENTS AND COORDINATION

- A. Verify all field dimensions to insure close fit with work of other trades.
- B. Coordinate and install this work in proper sequence and cooperation with all other trades, to insure that total work is completed within contract time schedule.
- C. Verify that glazing systems and glass thicknesses conform with producer's recommendations and/or specification.
- D. Coordinate all sections of this division's work to produce complete system, caulked and glazed, meeting this division's specification sections.
- E. Caulking between openings and concrete and masonry surrounding material is specified in Division 7.
- F. Threshold and Floor Finish Door Undercuts:
  - 1. Carefully undercut all doors to meet thresholds and clear floor finishes. Verify exact undercut depth against actual threshold and floor finish heights. Unless otherwise specified no undercut (clear open gap with door closed) is to exceed 3/4".

1.03 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Division 4:	Masonry
Division 6:	Wood and Plastic Laminates
Division 7:	Thermal and Moisture Protection
Division 9:	Finishes
Division 12:	Furnishings

1.04 APPLICABLE CODES AND STANDARDS

- A. Glass: conform to Federal Specification DD-G-451C, Florida Building Code, and CPSC Standards.

- B. Hollow Steel Doors and Frames conform to:  
Steel Door Industry standards SDI-100, recommended "Specifications, Standard Steel Doors and Frames", latest edition and Hollow Metal Manufacturers Association Standards:

HMMA 802 - Manufacturing  
HMMA 810 - Doors  
HMMA 820 - Frames

- Each of the above referenced standards as modified and supplemented herein.
- C. Wood Door Construction: conform to Architectural Woodwork Institute, specification 5, "Flush Doors", latest edition.
- D. Exterior door and window assemblies shall comply with Missile Impact Criteria of SBC/SSTD 12/99.

#### 1.05 STRUCTURAL DESIGN REQUIREMENTS

- A. Fabricate and install all this division's opening systems and assemblies to meet these performance design conditions unless modified by 1.05, B of this section. See architectural drawings.
1. Wind Pressure (shall include positive and negative wind pressure): design system components and assemblies to with-stand applied wind loads as defined in the latest editions adopted by D.O.E. of ASCE-7 and Florida Building Code, Chapter 16. Basic wind speed = 130 MPH x 1.15 importance factor. Deflection shall be limited to 1/175 of clear unsupported span. Every exterior wall/assembly must be capable of withstanding the load, acting either inward or outward.
  2. Thermal Expansion: design system components to provide for expansion and contraction due to 120 deg. F. ambient temperature range without causing any buckling, joint opening, undue stresses on fasteners, or other detrimental effects.
  3. Deflections: vertical or horizontal deflection in any member not to exceed 75% of design clearance dimension between the edge of any glazing panel and its frame.

#### 1.06 SUBMITTALS

- A. Submit in accordance with General, Supplementary and Special Conditions.
- B. Shop drawings shall state that the above criteria is met, include all fastening/installation details, and include a certified statement signed, dated and sealed by a Florida registered structural ENGINEER.

### 1.07 HARDWARE MOUNTING HEIGHTS AND LOCATIONS

- A. Locks, latches, push-pulls ..... 38 to 41 13/16 inches from center line to floor for panic devices, and similar items.
  - Deadlock ..... 48 inches above floor to top of lock (max.)
  - Bottom Hinge ..... to manufacturer's standard but not more than 12" above door bottom.
  - Top Hinge ..... to manufacturer's standard but not more than 8" below door head.
  - Intermediate Hinge ..... centered between top and bottom hinge.
- B. Special heights as indicated on Architectural drawings.

### 1.08 APPROVED PRODUCERS

- A. Producer's products referred to, and materials and performance characteristics specified in this division establish the required quality of performance for this work.

### 1.09 SUPPLEMENTARY PARTS

- A. Provide all supplementary parts to complete, attach, and anchor all items if such parts are necessary for the complete installation and operation of the opening, whether or not indicated on design drawings or specified herein.

### 1.10 METALS PROTECTION

- A. Electrolysis Prevention: paint dissimilar metals, except stainless steel, white, bronze and/or solid zinc, with one heavy brush or spray coat of zinc-chromate primer and one coat of aluminum paint; or paint with one heavy brush coat of alkali-resistant bituminous paint; or separate from aluminum by heavy coat of mastic caulking compound or non-absorptive tape or gasket. Include dissimilar metals used in locations where drainage from them passes over aluminum.
- B. Ferrous Metals Protective Coating: after assembly, clean all surfaces, phosphate coat, and give one coat of rust inhibitive/ preventive baked-on primer. Include all ferrous metal work, particularly pressed steel doors, frames and door louvers.
- C. Products to be used for the foregoing are to be checked for and certified to be compatible with finish paint coats.
- D. Refer to other specific sections in this Division for additional finish and protection requirements.

### 1.11 SPECIAL HANDLING INSTRUCTIONS

- A. Storage and Stacking: store in covered, dry area, in upright position, and minimum of 4 inches above floor or grade. Provide minimum 1/4 inch between units to permit air circulation. Do not permit cardboard wrappers to wet metal work. If cardboard gets wet, remove it immediately. After installation, field prime as soon as surrounding construction permits prime painting, then protect during subsequent construction operations.
- B. Installed Work Protection: carefully protect against disfiguration, contamination, or damage by mechanical abuse or contact with harmful materials. Install protective barriers whenever exposed to damage is deemed critical by ARCHITECT.
- C. Correction of Damaged Work: work which can be corrected so that no visible damage is evident from a 1'-0" distance for interior and a 4'-0" distance for exterior work, may be corrected without replacement. Where this cannot be done, remove damaged work and replace with undamaged work at no additional cost to OWNER.

### 1.12 CLEANING

- A. Clean surfaces of all members, both inside and outside, of all mortar, plaster, dirt, paint and other foreign matters to present a neat appearance and prevent fouling of weathering surfaces, weather-stripping, or operation of hardware. In addition, wash frames with stiff-fiber brush, soap and water and thoroughly rinse with clear water.

## PART 2 - DOOR SCHEDULE LEGEND

### 2.01 CONTRACT PROVISIONS

- A. Conform to Division 1 and Section 08000.
- A. Door abbreviations are referenced in schedule shown on the drawings.

### 2.03 STEEL DOOR INSTITUTE STANDARD NOMENCLATURE

- A. Door types are referenced in Schedule are shown on the drawings.
- B. See Schedule for louver size.
- C. See Glazing Section for types of glass and tint.
- D. For full or partially louvered exterior doors provide interior mounted insect 16 mesh screen set in frame and held in place by means of easily removable clips/fasteners.
- E. **All products installed in the building envelope shall have product approval number indicated on the submittal. Products shall conform to the latest edition of the FBC.**

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END OF SECTION 08 10 00

DOORS & WINDOWS, GENERAL/LEGEND  
08 10 00-5

**SECTION 08 11 00 / HOLLOW STEEL DOORS AND FRAMES**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 08 00 00 and other sections of this division.
- B. See drawings for all frame configurations and locations.
- C. See door schedule for door sizes.

1.02 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Section 04 00 00:	Masonry, General
Section 06 00 00:	Finish Carpentry
Section 08 71 00:	Door Hardware and Schedule
Section 08 81 00:	Glass Products
Section 09 91 00:	Painting

1.03 REFERENCES

- A. Steel Doors and Frames in this section must meet all standards as established by the following listing.
  - 1. Door and Hardware Preparation ANSI 115.
  - 2. Life Safety Codes NFPA-101 (Latest edition).
  - 3. Fire Doors and Windows NFPA-80 (Latest edition).
  - 4. Steel Door Institute ANSI/SDI-100 (Latest edition)
  - 5. UL10C and UBC 7 – 2 Positive Pressure fire testing.

1.04 SUBMITTAL

- A. Coordinate approved shop drawings with all other trades and manufacturers whose products are used in conjunction with the Steel Doors and Frames under section 08100.
- B. Finish hardware supplier is to furnish templates, template reference number and/or physical hardware to the steel door and frame supplier in order to prepare the doors and frames to receive the finish hardware items.
- C. Each floor of the building is to be detailed separately.

- D. The steel door and frame supplier will furnish to the architect (4) complete copies of the proposed steel door and frames schedule and/or shop drawings. Using the same reference number for details and openings as those on the contract drawings. After receipt of the approved door schedule the steel door and frame supplier will make any corrections and resubmit to the architect (6) sets of corrected schedules.
- E. Upon request of the ARCHITECT and OWNER or for any substitution to this specification, (4) copies of the steel door & frame manufacturers catalog cut sheets are to be submitted to the ARCHITECT and OWNER before any material is placed on the job site.

#### 1.05 QUALITY ASSURANCE

- A. Provide Steel Doors and Frames complying with the Steel Door Institute recommended specifications for Standard Steel Doors and Frames ANSI/SDI 100 (Latest edition).
- B. Steel Doors and frames shall be manufactured to high quality standards in manufacturing facilities with annual certified conformance to ISO9001.
- C. Hollow metal doors and frames submittals shall include proof of tested complete assembly including glazed openings and louvers, to resist penetration by wind-borne missiles per section 01100, 2.01

#### 1.06 DELIVERY, STORAGE AND HANDLING

- A. All steel doors and frames being supplied must be properly marked with door opening mark number corresponding with the door schedule.
- B. Deliver all steel doors cartoned and properly stored on planks or dunnage to provide protection during transit and job storage.
- C. Inspect doors and frames for damage upon delivery. Minor damage may be repaired, provided the finish items are equal in all respects to new work and acceptable to the ARCHITECT and OWNER, otherwise remove and replace damaged items as directed.
- D. Store doors and frames at the building site under cover. Place units on at least 4 inch high wood sills or on the floor in a manner that will prevent rust and damage. Avoid the use of non-vented plastic or canvas shelters which could create a humidity chamber. If the cardboard wrapper on the door becomes wet, remove the carton immediately. Provide a minimum 1/4" space between stacked units to promote air circulation.
  - 1. Non-galvanized stock (ref. 2.04, B2) must be stored in a trailer or equivalent.

#### 1.07 WARRANTY

- A. All steel door and frame products shall be warranted from defects in workmanship for a period of one (1) year from date of shipment.

## PART 2 - PRODUCTS

### 2.01 MANUFACTURERS

- A. Subject to meeting the design requirements specified herein, the following manufacturers have prior approval:

Fleming Door  
CECO Door Products  
Steelcraft Manufacturing Company  
Metal Products, Inc.  
Other SDI or NAAMM members that conform to the specific requirements of this specification.

### 2.02 CLEARANCES

- A. Coordinate undercuts at door locations to suit design conditions. Note that typical thresholds are handicapped type, rising only 1/4" above floor which will allow only 3/8" undercut.
1. At door sills where no threshold is used, undercut door 3/4" maximum unless otherwise shown on drawings. Verify undercut on fire rated doors.
  2. At door sills where a threshold is used, 1/4" maximum between door and threshold. Note: Threshold at exterior doors is Pemko #2005 (or equivalent) which is 1/2" maximum height to top of bumper. Threshold base is 1/4" height, therefore bottom of door is to be prepared so that it is approximately 1/8" above base.
- B. Edge clearances shall be as follows: Between doors and frames, at head and jambs - 1/8".
- C. Between meeting edges of pairs of doors 1/8".

### 2.03 MATERIAL

- A. Use prime quality carbon steel; free from scale, pitting and surface defects.
- B. Steel doors and frames shall be fabricated from tension leveled steel to ASTM A924-97 (M-97), galvanized to ASTM A653-97 (M-97), Commercial Steel (CS), Type B, coating designation A40 (ZF120), known commercially as paintable Galvanneal.

### 2.04 FRAME FABRICATION

- A. **No knock-down frames** are to be used unless specifically authorized by the OWNER.
- B. Fabricate from 16 gauge steel sheets, unless otherwise called for, conforming to ASTM

A366. Exterior frames and interior frames to be hot-dip galvanized conforming to ASTM A-526 (A60) with coating weight of not less than 0.30 ounces per S.F., per side. Material to be free from scale, pitting, rust and other surface defects, to producer's standard configurations which most closely match, in ARCHITECT'S judgment, configurations shown on drawings. All doors with closers shall have reinforcement in frame. All doors over 3'-0" shall have top pin reinforcement.

1. Provide concealed hardware reinforcements in accordance with HMMA 820 & 861. Note that certain doors are to receive continuous hinges. Prepare frame appropriately.
  2. Interior frames installed in metal stud walls may delete galvanizing and be provided with full factory prime coat if buildings are dried in prior to frame installation. Refer to 3.02, H this section.
  3. All frames installed in walls 8" or less thick are to be wrap around configuration.
- C. Continuous equal face dimension profile: construct all door frames with corners saw-mitered and full (continuously) welded through the throat per HMMA 820 configuration "A", with all exposed welds ground and finished smooth.
- D. Faces of unequal widths (4" head - 2" verticals and other horizontals): construct frames with 2" faces machine mitered and stops butted with head overlapping jambs and with jamb tabs interlocking slots in head member. Weld miters continuous, with all exposed welds ground and finished smooth. Filler caps, if required, to close end gaps at 4" head member, for all wrap-a-around frame locations are to be neatly sized and positioned and securely fastened in place. Any open joints in faces and returns which will be visible after installation are to be welded, ground and finished smooth, at the shop.
- E. Frames shall be factory prep to receive 3 door silencers on strike side of jamb and one additional silencer for each leaf on heads of double doors.
- F. Provide glazing stops for fixed glazing application. At exterior locations place removable stop on inside of building. At interior locations place removable stop on side of smallest room or as instructed. Removable glazing stops shall be of cold rolled steel, not less than 20 gauge thickness galvanized as 2.04 B, butted at corner joints and secured to the frame with countersunk cadmium-or zinc-plated screws.
- G. Jambs, heads, mullions, sills and center rails shall be straight and uniform throughout their lengths.
- H. Factory assembled frame product shall be square, free of defects, warps or buckles.
- I. Corner joints shall be accurately mitered and tightly fitted with integral door stops mitered or butted when assembled.
- J. Corner joints shall be:
1. Welded on the inside of the profiles, returns and faces for set-up and welded

- frames.
2. Provided with 20 gauge steel reinforcing plates and/or jambs with integral tabs.
- K. Joints at mullions, transom bars, sills or center rails shall be coped accurately, butted and tightly fitted with faces securely welded, matching corner joint faces.
- L. Frames shall be fabricated with integral door stops having a minimum height of 5/8" .
- M. On factory assembled frames, each door opening shall be provided with two (2) temporary steel jamb spreaders welded to the base of the jambs of mullions to maintain proper alignment during shipping and handling. Spreaders shall be removed by the contractor responsible for installation prior to anchoring of frame to floor and wall.

## 2.05 DOOR FABRICATION

- A. All doors to have flush surface configuration upon fabrication completion. All seams to be located on door edges. Face sheets shall be fabricated from 18 gauge steel, unless otherwise called for, welded with internal reinforcement. Use galvanized material conforming to ASTM A-526, coating weight as 2.04 above.
- B. Exterior and Interior door cores shall be as listed below :
1. Fire door cores shall be rigid extruded polystyrene chemically bonded to all interior surfaces, fire retardant, closed cell board, Type 1, Density: 1 to 2 PCF, thermal values: R 6.0 minimum, conforming to ASTM C578.
  2. Exterior insulated door cores shall be rigid foam polyisocyanurate chemically bonded to all interior surfaces, closed cell, faced board, thermal value: R 12.3 minimum, conforming to ASTM C1289.
- C. Door faces of all steel doors shall be fabricated without visible seams, free of scale, pitting, coil rakes, buckles and waves.
- D. Formed edges shall be true and straight with a minimum radius for the thickness of steel used.
- E. Lock and hinge edges shall be beveled 1/8" in 2" unless builders' hardware or door swing dictates otherwise.
- F. Provide shop installed integral flush 16 gauge closing channels on tops and bottoms of all doors, welded to each face sheet at 6" o.c. maximum. Top and bottom closures shall be fully sealed
- G. Louver Style - Zee Type.
1. Provide removable insect screens in aluminum frame on inside faces of all louvers in exterior doors.
- H. Exterior doors shall be provided with factory installed flush PVC top caps. Fire labeled

exterior doors shall be provided with factory installed flush steel top caps.

- I. Exterior doors in building shall meet Large Missile Impact Criteria as provided in SBC/SSTD 12/99. For wind loading criteria, see sheet S1.0 of structural plans.

## 2.06 ANCHORAGE

- A. Frames shall be provided with anchorage appropriate to floor, wall and frame construction in accordance with HMMA 820 & 861.
- B. Each wall anchor shall be located immediately above or below each hinge reinforcement on the hinge jamb and directly opposite on the strike jamb, except as indicated below. Refer to 3.02, F (1) of this section.
- C. Frames installed in unit masonry partitions shall be provided with .156" diameter steel wire anchors, 18 gauge steel adjustable stirrup and strap or "T" type anchors as conditions dictate.
- D. All frames shall be installed with each jamb secured with 16 gauge steel floor anchors. Each anchor shall be provided with two (2) factory prepared holes for mounting to the floor and shall be securely welded to the inside of the jamb profile.
  1. Provide fixed mullion anchors each side of mullion.
- E. Frames installed in steel stud and drywall partitions shall be provided with 20 gauge steel snap-in or "Z" type stud type anchors.
- F. Jambs of frames in previously placed concrete, masonry or structural steel shall be punched and dimpled to accept machine bolt anchors, 1/4" diameter, located not more than 6" from the top and bottom of each jamb. Anchor preparations and guides shall also be located immediately above or below the intermediate hinge reinforcing and directly opposite on the strike jamb. Each preparation shall be provided with 16 gauge anchor bolt guides.
  1. After sufficient tightening of the anchor bolt, the head shall be welded so as to provide a non-removable application. Welded bolt and dimple shall be filled and ground to present a smooth uniform surface by the contractor responsible for installation, prior to finish painting.
- G. All anchor bolts and expansion shields for the above preparations shall be provided by the contractor responsible for installation.

## 2.07 DOOR SILENCERS

- A. GJ-64 or equal, Single Stud rubber/neoprene type. Refer to 2.04,D this section.

## 2.08 HARDWARE PREPARATIONS

- A. Doors shall be factory blanked, reinforced, drilled and tapped for **fully** templated mortised hardware, in accordance with the final approved schedule and templates provided by the hardware supplier.
- B. Doors shall be factory blanked and reinforced for mortised hardware that is **not fully** templated.
- C. Doors shall be factory reinforced for surface mounted hardware.
- D. Templated holes 1/2" diameter and larger shall be factory prepared, except mounting and through bolt holes, which shall be by the contractor responsible for installation on site, at the time of application. Templated holes less than 1/2" diameter shall be factory prepared only when required for the function of the device (for knobs, levers, cylinders, thumb or turn pieces) or when these holes over-lap function holes.
- E. Drilling and tapping for surface mounted hardware or mortised hardware that is not fully templated shall be by the contractor responsible for installation on site, at the time of application.
- F. Hinge and pivot reinforcements shall be 10 gauge steel minimum high frequency type reinforcing.
- G. Doors in excess of 96" rabbet height shall be prepared for 4 1/2" heavy weight hinges minimum.
- H. Hinge reinforcements for acoustic doors shall be 10 gage minimum with each cutout provided with 4 1/2" heavy weight high frequency type reinforcing.
- I. Lock, strike and flush bolt reinforcements shall be 16 gage steel minimum.
- J. Reinforcements for concealed closers and holders shall be 12 gage steel minimum.
- K. For surface mounted hardware, reinforcements shall be 16 gage steel minimum.
- L. All pairs of fire labeled doors shall be provided with 12 gage steel surface mounted flat bar astragal, shipped loose for application on site, by the contractor responsible for installation.

## 2.09 SHOP FINISHING

- A. All tool marks, abrasions and surface blemishes shall be filled and sanded to present smooth uniform surfaces.

- B. Note that frame and door stock is specified in 2.04 and 2.05 above to be hot-dip galvanized conforming to ASTM A-526 & A-653 (A60)(0.60) ounces/SF total wt.). Modifications to this galvanized finish such as welds, end shears and the like are to be fully shop coated with a high quality zinc-rich paint minimum 2.0 mil thickness to insure against rusting while products are left exposed prior to finish painting.
- C. Doors and frames are to be thoroughly cleaned, and chemically treated to insure maximum paint adhesion. All surfaces of the door and frame exposed to view before installation shall receive a factory applied coat of rust inhibiting primer, either air-dried or baked-on. The finish shall meet the requirements for acceptance stated in ANSI A224.1 "Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces". The prime finish is not intended to be the final layer of protection from the outside elements. Field painting shall be performed in accordance with the recommendations of the door and frame manufacturer. For specialty types of finished coatings, the paint supplier should also be consulted.
- D. All surfaces, front and back, are to arrive at the project site fully and durably coated with its appropriate shop finish.

#### 2.10 FRAME GROUT

- A. Standard masonry cement mortar for frames installed in metal studs, concrete or masonry.

#### 2.11 UNDERWRITER LABELED CONSTRUCTION

- A. See Section 08000 / Door Schedule for UL-rated doors and frames. Construct those doors and frames in accord with UL requirements and affix label.

#### 2.12 PRODUCER'S QUALIFICATIONS

- A. Door and frame manufacturer is required to submit evidence that products furnished are in compliance with the most stringent requirements of S.D.I. 100, "Recommended Specifications for Standard Steel Doors and Frames", or National Association of Hollow Metal Manufacturers (NAAMM), as supplemented or modified herein, and further comply with requirements specified which are above and beyond SDI and NAAMM standards. (Examples are: joint assembly method, welding, finish, etc.)

### PART 3 - EXECUTION

#### 3.01 SITE STORAGE AND PROTECTION OF MATERIALS

- A. No frame or door is to be installed with any rust. Prior to installation, any visible rusted areas are to be properly prepared by removing rust and reprimed with an approved primer which will be compatible with finish paint. After installation, doors and frames shall be periodically checked for rust and if found, rework as above.

- B. The contractor responsible for installation shall remove wraps or covers from door and frame product upon delivery at building site.
- C. All materials shall be thoroughly inspected upon receipt and all discrepancies, deficiencies and/or damages shall be immediately reported in writing to the supplier. All damage shall be noted on the carriers' Bill of Lading.
- D. Contractor responsible for installation shall ensure all materials are properly stored on planks or dunnage in a dry location. Product shall be stored in a vertical position, spaced with blocking to permit air circulation between them. Materials shall be covered to protect them from damage from any cause.
- E. Contractor shall notify the supplier in writing of any errors or deficiencies in the product itself before initiating any corrective work.

### 3.02 FRAME INSTALLATION

Frames shall be set in place at locations shown on architectural drawings prior to wall construction. Masonry and frame walls are to be built around pre-installed frames.

- A. Set frames plumb, square, aligned, without twist at correct elevation in accordance with NAAMM-HMMA 840.
- B. Frame Installation Tolerances:
  - 1. Plumbness tolerance, measured through a line from the intersecting corner of vertical members and the head to the floor, shall be 1/16".
  - 2. Squareness tolerance, measured through a line 90° from one jamb at the upper corner of the frame, to the opposite jamb, shall be 1/16".
  - 3. Alignment tolerance, measured on jambs, through a horizontal line parallel to the plane of the wall, shall be 1/16".
  - 4. Twist tolerance, measured at face corners of jambs, on parallel lines perpendicular to the plane of the wall, shall be 1/16".
- C. Fire labeled frame shall be installed in accordance with NFPA-80.
- D. Brace frame rigidly in position while building-in. Remove temporary steel shipping jamb spreaders prior to securing floor anchors. Install wood spreaders at mid-point of frame rabbet height to maintain frame widths. (Spreaders shall not be used as a gauge during construction).
- E. Provide vertical support at center of head for openings exceeding 48" in width.
- F. Secure anchorages and connections to adjacent construction as specified below. (Also refer to 2.06 for frame anchor requirements.)

1. All door and door height glazed frames are to receive minimum 4 anchors each jamb. Less than door height glazed frames are to receive minimum 2 anchors per jamb. Refer to 2.06.
  2. Anchor all frame bottoms to floor with two 1/4" galvanized expansion bolts set into expansion shields or drilled-in "Tapcon" anchors. Install plumb and level insuring that doors when installed will stand open, in any position, without bind.
  3. Provide UL-approved anchors for UL-rated installations.
- G. Frames shall be fully grouted in place as directed below.
1. Perimeter of all interior and exterior door and window frames are to be grouted solid when in contact with concrete/masonry.
  2. Perimeter of all door and window frames are to be grouted solid when in exterior frame walls.
- H. Coat throat (inside of jamb) continuously from bottom of jamb legs up to 18" A.F.F. with bituminous coating **(ALL FRAMES)**.

### 3.03 DOOR INSTALLATION

- A. Install doors in accordance with NAAMM-HMMA 840, maintaining clearances outlined in Section 2.02.
- B. Install builders' hardware in accordance with ANSI A115.IG-1994, manufacturers' templates and instructions.
- C. Install louvers and vents.

### 3.04 FINAL ADJUSTMENTS/CLEAN-UP

- A. Adjust operable parts for correct clearances and function.
- B. Steel surfaces shall be kept free of grout, tar or other bonding materials or sealers.
- C. Any grout or other bonding material shall be cleaned from products immediately following installation.
- D. Prior to site touch-up, exposed surfaces of galvanized steel to be finished with latex paints shall be cleaned with soap and water to remove foreign matter. When alkyd paints are specified, turpentine or paint thinners shall be used. Refer to paint manufactures recommendations for additional information.
- E. Exposed field welds shall be finished to present a smooth uniform surface and shall be

touched-up with a rust inhibitive primer.

- F. Exposed surfaces that have been scratched or otherwise marred during shipment, installation or handling shall be touched-up with a rust inhibitive primer.
- G. Finish paint in accordance with Section 09910.
- H. Install glazing materials and door silencers.

END OF SECTION 08 11 00

## **SECTION 08 31 13 / ACCESS DOORS**

### **PART 1 - GENERAL**

#### **1.01 RELATED DOCUMENTS**

- A. Conform to Division 1, Section 08000 and other sections of this division.

### **PART 2 - PRODUCTS**

#### **2.01 MANUFACTURER**

- A. Products specified herein are those of Milcor or as noted. Equivalent products of Bar-Co, Cesco or J.L. Industries will be acceptable. Submit other manufacturer's data for approval.
1. Gypsum Board Walls and Ceilings (Non-Rated)  
No. 3203 Series, 16" x 16" minimum size, 16 gauge frame, 18 gauge door, both factory prime painted, galvanized steel drywall bead and one (1) flush lock.
    - a. Attic Access: provide 24" x 30" size units for installation into suspended attic closure barrier, installed at locations as directed. Provide units as shown on Architectural Plans.
  2. Masonry Walls  
No. 3202 Series, 16" x 16" minimum size, 16 gauge frame and 18 gauge door, prime painted, flush cam lock.
  3. Fire Rated Type  
No. 3208 Series, 18" x 18" minimum size, 16 gauge frame, 20 gauge door, both factory prime painted, 1 key operated flush latch. Provide with UL 1 1/2 hour B-Label.

### **PART 3 - EXECUTION**

- 3.01 Carefully locate doors to be positioned to allow access to all valves, boxes, devices and service points which will be concealed behind non-accessible walls or ceilings. Size doors greater than minimum specified to provide full access as necessary. Securely attach to perimeter framing, aligned true and set so that door will be flush with wall surface.
- 3.02 Not all required access locations are shown on the plans. It will be the responsibility of each trade to review the requirements and make allowance for access doors.
- 3.03 If not acceptably finished, finish paint doors and frames to match color of field in which placed.

END OF SECTION 08 31 13

**SECTION 08 71 00 - DOOR HARDWARE**

**PART I – GENERAL**

1.01 SUMMARY

A. SECTION INCLUDES

1. The work in this section includes furnishing all items of finish hardware as hereinafter specified or obviously necessary for all swinging, sliding, folding and other doors. Except items, which are specifically excluded from this section of the specification or of unique hardware, specified in the same sections as the doors and frames on which they are installed.

B. RELATED DOCUMENTS

1. Related documents, drawings and general provisions of contract, including General and Supplementary Conditions and Division 1 specification sections apply to this section.

C. RELATED SECTIONS

1. 06200 – Finish Carpentry
2. 08110 – Metal Doors and Frames
3. Division 16 – Access Control

1.02 REFERENCES

A. STANDARDS

1. ANSI A156.1 – Butts and Hinges
2. ANSI A156.2 – Bored Locks and Latches
3. ANSI A156.3 – Exit Devices
4. ANSI A156.4 – Door Controls – Door Closers
5. ANSI A156.5 – Auxiliary Locks and Associated Products
6. ANSI A156.6 – Architectural Door Trim
7. ANSI A156.7 – Template Hinge Dimensions
8. ANSI A156.8 – Door Controls – Overhead Holders
9. ANSI A156.13 – Mortise Locks and Latches
10. ANSI A156.15 – Closer Holder Release Devices
11. ANSI A156.16 – Auxiliary Hardware
12. ANSI A156.18 – Material and Finishes
13. NFPA 80 – Fire Doors and Windows
14. UL10C – Positive Pressure Fire Tests of Door Assemblies
15. AIA A201 1997 – General Conditions of the Contract

B. CODES

1. NFPA 101 – Life Safety Code
2. IBC 2003 – International Building Code

3. ANSI A117.1 – Accessible and Usable Buildings and Facilities
4. ADA – Americans with Disabilities Act

### 1.03 SUBMITTALS

#### A. GENERAL REQUIREMENTS

1. Submit copies of finish hardware schedule in accordance with Division 1, General Requirements.

#### B. SCHEDULES AND PRODUCT DATA

1. Schedules to be in vertical format, listing each door opening, and organized into “hardware sets” indicating complete designations of every item required for each door opening to function as intended. Hardware schedule shall be submitted within two (2) weeks from date the purchase order is received by the finish hardware supplier. Furnish four (4) copies of revised schedules after approval for field and file use. Note any special mounting instructions or requirements with the hardware schedule. Schedules to include the following information:
  - a. Location of each hardware set cross-referenced to indications on drawings, both on floor plans and in door and frame schedule.
  - b. Handing and degree of swing of each door.
  - c. Door and frame sizes and materials.
  - d. Keying information.
  - e. Type, style, function, size, and finish of each hardware item.
  - f. Elevation drawings and operational descriptions for all electronic openings.
  - g. Name and manufacturer of each hardware item.
  - h. Fastenings and other pertinent information.
  - i. Explanation of all abbreviations, symbols and codes contained in schedule
  - j. Mounting locations for hardware when varies from standard.
2. Submit catalog cuts and/or product data sheets for all scheduled finish hardware.
3. Submit separate detailed keying schedule for approval indicating clearly how the owner’s final instructions on keying of locks has been fulfilled.

#### C. SAMPLES

1. Upon request, samples of each type of hardware in finish indicated shall be submitted. Samples are to remain undamaged and in working condition through submittal and review process. Items will be returned to the supplier or incorporated into the work within limitations of keying coordination requirements.

#### D. TEMPLATES

1. Furnish a complete list and suitable templates, together with finish hardware schedule to contractor, for distribution to necessary trades supplying materials to be prepped for finish hardware.

#### E. ELECTRONIC HARDWARE SYSTEMS

1. Provide complete wiring diagrams prepared by an authorized factory employee for each opening requiring electronic hardware, except openings where only magnetic hold-open devices are specified. Provide a copy with each hardware schedule submitted after approval.
2. Provide complete operational descriptions of electronic components listed by opening in the hardware submittals. Operational descriptions to detail how each electrical component functions within the opening incorporating all conditions of ingress and egress. Provide a copy with each hardware schedule submitted for approval.
3. Provide elevation drawings of electronic hardware and systems identifying locations of the system components with respect to their placement in the door opening. Provide a copy with each hardware schedule submitted for approval.
4. Prior to installation of electronic hardware, arrange conference between supplier, installers and related trades to review materials, procedures and coordinating related work.
5. The electrical products contained within this specification represent a complete engineered system. If alternate electrical products are submitted, it is the responsibility of the distributor to bear the cost of providing a complete and working system including re-engineering of electrical diagrams and system layout, as well as power supplies, power transfers and all required electrical components. Coordinate with electrical engineer and electrician to ensure that line voltage and low voltage wiring is coordinated to provide a complete and working system.

#### F. OPERATIONS AND MAINTENANCE MANUALS

1. Upon completion of construction and building turnover, furnish two (2) complete maintenance manuals to the owner. Manuals to include the following items:
  - a. Approved hardware schedule, catalog cuts and keying schedule.
  - b. Hardware installation and adjustment instructions.
  - c. Manufacturer's written warranty information.
  - d. Wiring diagrams, elevation drawings and operational descriptions for all electronic openings.

### 1.04 QUALITY ASSURANCE

#### A. SUBSTITUTIONS

1. All substitution requests must be submitted before bidding and within the procedures and time frame as outlined in Division 1, General Requirements. Approval of products is at the discretion of the architect and his hardware consultant.

#### B. SUPPLIER QUALIFICATIONS

1. A recognized architectural door hardware supplier who has maintained an office and has been furnishing hardware in the project's vicinity for a period of at least two (2) years.
2. Hardware supplier shall have office and warehouse facilities to accommodate this project.

3. Hardware supplier shall have in his employment at least one (1) Architectural Hardware Consultant (AHC) who is available at reasonable times during business hours for consultation about the project's hardware and requirements to the owner, architect and contractor.
4. Hardware supplier must be an authorized factory distributor of all products specified herein.

#### 1.05 FIRE-RATED OPENINGS

1. Provide door hardware for fire-rated openings that comply with NFPA 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed by Underwriter's Laboratories (UL) or Warnock Hersey (WH) for use on types and sizes of doors indicated.
2. Project requires door assemblies and components that are compliant with positive pressure and S-label requirements. Specifications must be cross-referenced and coordinated with door manufacturers to ensure that total opening engineering is compatible with UL10C Standard for Positive Pressure Fire Tests of Door Assemblies.
  - a. Hardware required for fire doors shall be listed with Underwriters Laboratories for ratings specified.
  - b. Certification(s) of compliance shall be made available upon request by the Authority Having Jurisdiction.

#### 1.06 DELIVERY, STORAGE AND HANDLING

##### A. MARKING AND PACKAGING

1. Properly package and mark items according to the approved hardware schedule, complete with necessary screws and accessories, instructions and installation templates for spotting mortising tools. Contractor shall check deliveries against accepted list and provide receipt for them, after which he is responsible for storage and care. Any shortage or damaged good shall be made without cost to the owner.
2. Packaging of door hardware is the responsibility of the supplier. As hardware supplier receives material from various manufacturers, sort and repackage in containers clearly marked with appropriate hardware set and door numbers to match the approved hardware schedule. Two or more identical sets may be packed in same container.

##### B. DELIVERY

1. The supplier shall deliver all hardware to the project site; direct factory shipments are not allowed unless agreed upon beforehand. Hardware supplier shall coordinate delivery times and schedules with the contractor. Inventory door hardware jointly with representatives of hardware supplier and hardware installer/contractor until each is satisfied that count is correct.
2. No keys, other than construction master keys and/or temporary keys are to be packed in boxes with the locks.

3. At time of hardware delivery, door openings supplier in conjunction with the contractor shall check in all hardware and set up a hardware storage room.

#### C. STORAGE

1. Provide secure lock-up for door hardware delivered to the Project, but not yet installed. Control handling and installation of hardware items that are not immediately replaceable so that completion of work will not be delayed by hardware losses both before and after installation.

#### 1.07 WARRANTY

- A. All items, except as noted below, shall be warranted in writing by the manufacturer against failure due to defective materials and workmanship for a minimum period of one (1) year commencing on the date of final completion and acceptance. In the event of product failure, promptly repair or replace item with no additional cost to the owner.
  1. Mortise locksets: Five (5) years
  2. Door closers: Ten (10) years
  3. Securitron (and approved equals) electrified hardware: Unlimited Lifetime

### **PART II – PRODUCTS**

#### 2.01 MANUFACTURERS

- A. Only manufacturers as listed below shall be accepted. Obtain each type of finish hardware (hinges, latch and locksets, exit devices, door closers, etc.) from a single manufacturer.

#### 2.02 MATERIALS

##### A. SCREWS AND FASTENERS

1. All required screws shall be supplied as necessary for securing finish hardware in the appropriate manner. Thru-bolts shall be supplied for exit devices and door closers where required by code and the appropriate blocking or reinforcing is not present in the door to preclude their use.

##### B. HANGING DEVICES

###### 1. HINGES

- a. Hinges shall conform to ANSI A156.1 and have the number of knuckles as specified, oil-impregnated bearings as specified with NRP (non-removable pin) feature, at all exterior reverse bevel doors. Unless otherwise scheduled, supply one (1) hinge for every 30" of door height. Hinges shall be a minimum of 4 1/2" high and 4" wide; heavy weight hinges (.180) shall be supplied at all doors where specified.

- 1) Specified Manufacturer: McKinney

- 2) Approved Substitutes: Bommer, Hager, Stanley

#### C. FLUSH BOLTS AND ACCESSORIES

1. All manual and automatic flush bolts to be furnished as specified.
  - a. Specified Manufacturer: Rockwood
  - b. Approved Substitutes: Quality, McKinney, Trimco

#### D. CYLINDERS AND KEYING

##### 1. CYLINDERS

- a. Cylinders and keys to be purchased from authorized locksmith selected by county.

#### E. LOCKING DEVICES

##### 1. MORTISE LOCKSETS

- a. All locksets shall be ANSI 156.13 Series 1000, Grade 1 Certified. All functions shall be manufactured in a single sized case formed from 12 gauge steel minimum. The lockset shall have a field-adjustable, beveled armored front, with a .125" minimum thickness and shall be reversible without opening the lock body. The lockset shall be 2 3/4" backset with a one-piece 3/4" anti-friction stainless steel latchbolt. The deadbolt shall be a full 1" throw made of stainless steel and have 2 hardened steel roller inserts. All strikes shall be non-handed with a curved lip. To insure proper alignment, all trim, shall be thru-bolted and fully interchangeable between rose and escutcheon designs.

- 1) Specified Manufacturer: Sargent 8200 Series
- 2) Approved Substitutes: Corbin Russwin ML2000 , Yale 8800 Series

##### 2. LOCKSET STRIKES

- a. Strikes shall be non-handed and available with curved lip, full lip or ASA type strikes as required. Provide strikes with lip-length required to accommodate jamb and/or trim detail and projection.

#### F. ELECTRIC STRIKES

##### 1. STANDARD STRIKES

- a. All standard electric strikes shall meet BHMA standard 501, grade 1 and be UL Listed for Burglary Resistance, category 1034. Strikes shall be all stainless steel construction for corrosion resistance, strength and durability. Strikes shall have been tested to withstand a forcing strength of a minimum 2400 lbs. before releasing and perform with a minimum of one million cycles of operation. Strikes shall be 24VDC fail-secure unless otherwise specified.

- 1) Specified Manufacturers: HES 1006 Series

- 2) Approved Substitutes: Folger Adams 742 Series

## G. DOOR CLOSERS

### 1. SURFACE MOUNTED CLOSERS – HEAVY DUTY

- a. All door closers shall be ANSI 156.4, Grade 1 Certified. All closers shall have aluminum alloy bodies, forged steel arms, and separate valves for adjusting backcheck, closing and latching cycles and adjustable spring to provide up to 50% increase in spring power. Closers shall be furnished with parallel arms mounting on all doors opening into corridors or other public spaces and shall be mounted to permit 180 degrees door swing wherever wall conditions permit. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.

- 1) Specified Manufacturer: Sargent 351 Series
- 2) Approved Substitutes: Corbin Russwin DC6000, Norton 7500 Series, Yale 4400 Series

## H. DOOR TRIM AND PROTECTIVE PLATES

1. Kick plates shall be .050 gauges and two (2) inches less full width of door, or as specified. Push plates, pull plates, door pulls and miscellaneous door trim shall be as shown in the hardware schedule.
  - a. Specified Manufacturer: Rockwood
  - b. Approved Substitutes: Quality, McKinney, Trimco

## I. DOOR STOPS AND HOLDERS

### 1. WALL MOUNTED DOOR STOPS

- a. Where a door is indicated on the plans to strike flush against a wall, wall bumpers shall be provided. Provide convex or concave design as indicated.
  - 1) Specified Manufacturers: Rockwood
  - 2) Approved Substitutes: Quality, McKinney, Trimco

### 2. OVERHEAD STOPS/HOLDERS

- a. Where specified, overhead stops/holders as shown in the hardware sets are to be provided. Track, slide, arm and jamb bracket shall be constructed of extruded bronze and shock absorber spring shall be of heavy tempered steel. Overhead stops shall be of non-handed design.
  - 1) Specified Manufacturers: Sargent 690 / 1540 Series
  - 2) Approved Substitutes: Rixson

**J. GASKETING AND THRESHOLDS**

1. Provide continuous weatherseal on exterior doors and smoke, light, or sound seals on interior doors where indicated or scheduled. Provide intumescent seals as required to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies. Provide only those units where resilient or flexible seal strip is easily replaceable and readily available from stocks maintained by manufacturer.
2. Provide threshold units not less than 4" wide, formed to accommodate change in floor elevation where indicated, fabricated to accommodate door hardware and to fit door frames. All threshold units shall comply with the Americans with Disabilities Act (ADA).
  - a. Specified Manufacturers: Pemko
  - b. Approved Substitutes: McKinney, Reese, Zero

**K. SILENCERS**

1. Furnish rubber door silencers all hollow metal frames; two (2) per pair and three (3) per single door frame.

**2.03 FINISHES**

- A. The designations used in schedules and elsewhere to indicate hardware finishes are those listed in ANSI/BHMA A156.18 or traditional U.S. finishes shown by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.
- C. Where specified hardware shall have an antimicrobial coating which permanently suppresses the growth of bacteria, algae, fungus, mold and mildew applied. The finish shall control the spread and growth of bacteria, mold and mildew and shall be FDA listed for use in medical and food preparation equipment.

**PART III – EXECUTION**

**3.01 EXAMINATION**

- A. Contractor shall ensure that the building is secured and free from weather elements prior to installing interior door hardware. Examine hardware before installation to ensure it is free of defects.

**3.02 INSTALLATION**

- A. Mount hardware units at heights indicated in the following applicable publications, except as specifically indicated or required to comply with the governing regulations.

1. "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute (DHI.)
  2. NWWDA Industry Standard I.S.1.7, "Hardware Locations for Wood Flush Doors."
- B. All hardware shall be applied and installed in accordance with best trade practice by an experienced hardware installer. Care shall be exercised not to mar or damage adjacent work.
- C. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation or application of surface protection with finishing work specified in the Division 9 Sections. Do not install surface-mounted items until finishes have been completed on the substrates involved.
- D. Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

### 3.03 FIELD QUALITY CONTROL

- A. The Contractor shall comply with AIA A201 1997 section 3.3.1 which reads as follows: "The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the contract Documents give other specific instructions concerning these matters."
- B. The hardware supplier shall do a final inspection prior to building completion to ensure that all hardware was correctly installed and is in proper working order.

### 3.04 ADJUSTING, CLEANING, AND DEMONSTRATING

- A. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate freely and smoothly or as intended for the application made.
- B. Where door hardware is installed more than one month prior to acceptance or occupancy of a space or area, return to the installation during the week prior to acceptance or occupancy and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore to proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.
- C. Instruct owner's personnel in the proper adjustment and maintenance of door hardware and hardware finishes and usage of any electronic devices.

### 3.05 PROTECTION

- A. Contractor shall protect all hardware, as it is stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

3.06 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 heading, provide door or item with hardware same as required for similar purposes. Hardware supplier is responsible for handing and sizing all products as listed in the hardware heading. Quantities listed are for each pair of doors, or for each single door.

B. Manufacturer's Abbreviations:

- |                  |                    |
|------------------|--------------------|
| 1. AA – ASSA     | 7. SN - Securitron |
| 2. HS – HES      |                    |
| 3. MC – McKinney |                    |
| 4. PE - Pemko    |                    |
| 5. RO – Rockwood |                    |
| 6. SA – Sargent  |                    |

**Hardware Sets**

**SET #01 - MAIN ENTRY**

Doors: 101

3 Hinges	T4A3386 4 1/2 X 4 1/2 NRP	32D	MC
1 Lockset (Storeroom DB)	8224 LNL	26D	SA
1 Mortise Cylinder	Verify Cylinder and Keying	26D	AS
1 Electric Strike	1006	630	HS
1 Closer	351 P10	EN	SA
1 Weatherstrip	303 AV 1 x 36" 2 x 84" TEK SCREWS		PE
1 Raindrip	346 C 40"		PE
1 Threshold	2005 AT 36"		PE

NOTE: Card reader, door position switch, REX and power supply by security integrator.  
 Exterior openings to meet Florida windstorm requirements.

**SET #02 - EXTERIOR SALLYPORT**

Doors: 106

3 Hinges	T4A3386 4 1/2 X 4 1/2 NRP	32D	MC
1 Lockset (Asylum x AV)	AV 8217 LNL	26D	SA
2 Mortise Cylinder	Verify Cylinder and Keying	26D	AS
1 Electric Strike	1006	630	HS
1 Closer	351 P10	EN	SA
1 Base Stop	474	US26D	RO
1 Weatherstrip	303 AV 1 x 36" 2 x 84" TEK SCREWS		PE
1 Raindrip	346 C 40"		PE
1 Threshold	2005 AT 36"		PE

NOTE: Card reader(s), door position switch, REX and power supply by security integrator.  
Exterior openings to meet Florida windstorm requirements.

**SET #03 - EXTERIOR FROM HOLDING AREA**

Doors: 113A

3 Hinges	T4A3386 4 1/2 X 4 1/2 NRP	32D	MC
1 Lockset (Storeroom)	8235 LNL	26D	SA
NOTE: Interior secure side. No exterior trim.			
1 Mortise Cylinder	Verify Cylinder and Keying	26D	AS
1 Closer	351 CPS	EN	SA
1 Weatherstrip	303 AV 1 x 36" 2 x 84" TEK SCREWS		PE
1 Raindrip	346 C 40"		PE
1 Threshold	2005 AT 36"		PE

NOTE: Door position switch by security integrator.  
Exterior openings to meet Florida windstorm requirements.

**SET #04 - INTERIOR ACCESS CONTROLLED (KP / KP)**

Doors: 104, 107

3 Hinges	TA2714 4 1/2 X 4 1/2 NRP	26D	MC
1 Lockset (Asylum)	8217 LNL	26D	SA
2 Mortise Cylinder	Verify Cylinder and Keying	26D	AS
1 Electric Strike	1006	630	HS
1 Closer	351 P10	EN	SA
1 Wall Bumper	409	US32D	RO
3 Door Silencers	608	GREY	RO

NOTE: Card reader(s), door position switch, REX and power supply by security integrator.

**SET #05 - INTERIOR ACCESS CONTROLLED (KP / KP PB)**

Doors: 113

3 Hinges	TA2714 4 1/2 X 4 1/2 NRP	26D	MC
1 Lockset (Asylum)	8217 LNL	26D	SA
2 Mortise Cylinder	Verify Cylinder and Keying	26D	AS
1 Electric Strike	1006	630	HS
1 Closer	351 P10	EN	SA
1 Wall Bumper	409	US32D	RO
1 Push Button	PB	US32D	SN
NOTE: Locate Push Button Release at Control Station.			
3 Door Silencers	608	GREY	RO

NOTE: Card reader(s), door position switch, REX and power supply by security integrator.

**SET #06 - MECHANICAL / JANITOR / IT**

Doors: 103, 104A, 105

3 Hinges	TA2714 4 1/2 X 4 1/2 NRP	26D	MC
1 Lockset (Storeroom)	8204 LNL	26D	SA
1 Mortise Cylinder	Verify Cylinder and Keying	26D	AS
1 Overhead Stop	1548S	26D	SA
1 Wall Bumper	409	US32D	RO
NOTE: Door: 103.			
3 Door Silencers	608	GREY	RO

**SET #07 - CELL / JUVENILE TOILET**

Doors: 114, 115, 116, 117, 118, 119

3 Hinges	T4A3786 4 1/2 x 4 1/2 NRP	26D	SA
1 Lockset (Asylum)	8217 LNL	26D	SA
NOTE: Less Lever inside.			
2 Mortise Cylinder	Verify Cylinder and Keying	26D	AS
1 Flush Cup Pull	D89	US26D	RO
NOTE: Locate inside Cell / Toilet.			
1 Overhead Stop	698S	26D	SA
3 Door Silencers	608	GREY	RO

**SET #08 - PUBLIC / STAFF TOILET**

Doors: 102, 111

3 Hinges	TA2714 4 1/2 X 4 1/2 NRP	26D	MC
1 Privacy Set	8265 LNL	26D	SA
1 Wall Bumper	409	US32D	RO
1 Coat Hook	802	US26D	RO
3 Door Silencers	608	GREY	RO

**SET #09 - OFFICE**

Doors: 108, 109, 110

3 Hinges	TA2714 4 1/2 X 4 1/2	26D	MC
1 Passage Set	8215 LNL	26D	SA
1 Wall Bumper	409	US32D	RO
1 Coat Hook	802	US26D	RO
3 Door Silencers	608	GREY	RO

## **SECTION 08 80 00 / GLAZING**

### 1.00 GENERAL

#### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Coordinate this section's work with Sections 08100/Hollow Steel Doors and Frames. Conform to the Latest Editions adopted of the Florida Building Code for Wind Loading, "Safety Standard for Architectural Glazing Materials", U.S. Consumer Product Safety Commission and Florida law.

#### 1.02 WORK INCLUDED

- A. Manufacture, handle, deliver and install glazing systems as shown on the Architectural drawings or as otherwise specified and in accordance with the requirements of the contract documents.

#### 1.03 DESIGN REQUIREMENTS

- A. Provide glazing systems capable of withstanding normal thermal movements, wind loading, and impact loading, without failure including loss due to defective manufacture, fabrication, and installation, deterioration of glazing materials and other defects in construction.
- B. Provide glass lites in the thickness and strengths (annealed or heat-treated) to meet or exceed the following criteria based on analysis of Project loads and in-service conditions.
  - 1. Minimum glass thickness of lites composed of annealed or heat-treated glass are selected so the worst-case probability of failure does not exceed the following:
    - a. 8 lites per 1000 for lites set vertically or not over 15 degrees off vertical and under wind action.
    - b. 1 lite per 1000 for lites set over 15 degrees off vertical and under action of wind or snow.

C. Wind Loads: Determine loads based on the following minimum design wind pressures:

- a. Components and Cladding Design Wind Pressure (as indicated on Drawing S0.01-General Notes and S0.02 Wind Load Plan).
  - 1) Basic Wind Speed 130 mph.
  - 2) Building Category III
  - 3) Exposure – B
  - 4) Importance Factor 1.15

D. Windborne-Debris-Impact-Resistance Performance: Pass missile-impact and cyclic-pressure tests when tested according to ASTM E 1886 and testing information in ASTM E 1996 for Basic Wind Speed 130 mph.

- 1. Large-Missile Test: For glazed openings located within 30 feet of grade.

2. Small-Missile Test: For glazed openings located more than 30 feet above grade.

#### 1.04 SUBMITTALS

- A. Submit 12-inch square samples of each type of glass indicated except for clear monolithic glass products, and 12-inch long samples of each color required (except black) for each type of sealant or gasket exposed to view.
- B. Glazing contractor to obtain compatibility and adhesion test reports from sealant manufacturer indicating that glazing materials were tested for compatibility and adhesion with glazing sealants and other glazing materials including insulating units.
- C. Shop drawings shall state that the above criteria is met, include all Fastening/installations, and include a certified statement signed, dated and sealed by a Florida \ Registered structural ENGINEER.

#### 1.05 QUALITY ASSURANCE

- A. Comply with published recommendations of glass product manufacturers and organizations below, except where more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this section or in referenced standards.
  1. GANA Publications
    - a. Tempering Division – Engineering Standards Manual
    - b. Laminating Division – Laminated Glass Design Guide
  2. LSGA Publications
  3. SIGMA Publications -- TM3000-Recommended Practices for Vertical and Basic Field Glazing of Organically Sealed Insulating Glass Units.
- B. Safety glass products are to comply with ANSI Z97.1 and testing requirements of 16 CFR Part 1201 for Category II materials.
  1. Subject to compliance with requirements, provide safety glass permanently marked with certification label of Safety Glazing Certification Council (SGCC) or other certification agency acceptable to authorities having jurisdiction.
- C. Single Source fabrication responsibility: All fabrication processes, including Low E and reflective coatings, insulating, laminating, silkscreen, and tempering, shall be fabricated by a single Fabricator.
- D. Glass fabricator to have 10 years of experience and meet ANSI / ASQC Q9002 1994.

#### 1.06 WARRANTY

- A. Provide a written 10-year warranty from date of manufacture for Solarscreen coated glass. Warranty covers deterioration due to normal conditions of use and not to handling, installing, and cleaning practices contrary to the glass manufacturer's published instructions.
- B. Provide a written 5-year warranty from date of manufacture for laminated glass. Warranty covers deterioration due to normal conditions of use and not to handling, installing, and cleaning practices contrary to the glass manufacturer's published instructions.

- C. Provide a written 5-year warranty from date of manufacture for Viraspan ceramic frit. Warranty covers deterioration due to normal conditions of use and not to handling, installing, and cleaning practices contrary to the glass manufacturer's published instructions.

## 2.00 PRODUCTS

### 2.01 GLASS PRODUCTS

- A. Flat Glass
  - 1. ASTM C 1036, Type 1, Class 1 (clear) or Class 2 (tinted, heat-absorbing, and light-reducing), and Quality q3.
  - 2. ASTM C 1048 Heat Treated Flat Glass, Type 1, Class 1 (clear) or Class 2 (tinted, heat-absorbing, and light-reducing), and Quality q3.
    - a. Kind HS
    - b. Kind FT
  - 3. Heat Treated Flat Glass to be by horizontal (roller hearth) process with inherent rollerwave distortion parallel to the bottom edge of the glass as installed.
    - a. Maximum peak to valley roll wave .003" at center of glass
- B. Solarscreen Coated Glass
  - 1. ASTM C1376 Standard Specification for Pyrolitic and Vacuum Deposition Coatings on Glass
    - a. Coated glass products to be magnetically sputtered vacuum deposition (MSVD).
- C. Laminated Glass
  - 1. ASTM C1172 -- Laminated Architectural Safety Glass
  - 2. Laminated Glass Products to be by fabricated free of foreign substances and air or glass pockets in autoclave with heat plus pressure.
  - 3. Interlayer Material: Polyvinyl butyral sheets
- D. Security Glazing, Polycarbonate Glazing: Use materials and fabrication techniques identical to those used in samples tested to WMFL or H.P. White physical assault standards as published for model specified. Provide products as schedule for specified thickness.
  - 1. Monolithic Polycarbonate
    - a. Acceptable Products: subject to compliance with specified requirements:
      - 1). General Electric Co; Lexan MR10.
      - 2). Sheffield Plastics, Inc.; Makrolon AR.
    - b. Characteristics: U.V. stabilized, clear, polycarbonate sheet glazing; coated on both faces with high mar-resistant surface treatment.
      - 1). Abrasion resistance measured per ASTM D 1044 with CS 10F wheels Loaded at 500 grams for 500 cycles and with 7% max. change in haze.
      - 2). Comply with model building code requirements for approved light Transmitting plastics and with min. CC-1 flammability performance Level pr ASTM D 635.
  - 2. Laminated Polycarbonate:
    - a. Acceptable Products: Subject to compliance with specified requirements:
      - 1. Custom Glass Corp., Impedio

2. GE Polymershapes / Insulgard Corp., Lexgard.
  3. Global Security Glazing, PowR-Lite LP
  4. Oldcastle Glass, ArmorProtect Max.
  5. Sheffield Plastics, Inc., Makrolo Hygard
  6. Sully North American, Inc. Saint-Gobain Co., D-FenceLite.
- b. Characteristics: Laminated clear monolithic polycarbonate sheets.
- 1). Provide with high mar-resistant surface treatment at exposed Surfaces only.
  - 2). Flexural strength for laminated polycarbonate shall be min. 13,500 PSI (93 MPa) when tested in accord with ASTM D-790 at 180 degrees Fahrenheit (82 degrees C) allowable continuous service temperature.
  - 3). Plastic Interlayer: Provide Manufacture's standard interlayer for Laminating polycarbonate, with a proven record of showing no Tendency to bubble, discolor or lose physical or mechanical properties after laminating and installation.
  - 4) Laminating Process: Fabricate using processes producing units free From foreign substances and air pockets.

## 2.02 GLAZING PRODUCTS

- A. Select glazing sealants, tapes, gaskets and other glazing materials of proven compatibility with other materials they will contact, including glass products, seals of insulating glass units and glazing channel substrates, under conditions of installation and service, as demonstrated by testing and field experience.

## 3.00 EXECUTION

### 3.01 EXAMINATION

- A. Verify prepared openings for glazing are correctly sized and within tolerance.
- B. Verify the a functioning weep system is present.
- C. Verify that the minimum required face and edge clearances are being followed.
- D. Do not proceed with glazing until unsatisfactory conditions have been corrected.

### 3.02 GLAZING

- A. Install products using the recommendations of manufacturers of glass, sealants, gaskets, and other glazing materials except where more stringent requirements are indicated, including those in "GANA Glazing Manual".
- B. Protect glass from edge damage during the handing and installation.
- C. Protect glass from contact with contaminating substances resulting from construction operations including weld splatter.
- D. Remove and replace glass that is broken, chipped, cracked or damaged in any way.

### 3.03 CLEANING

- A. Clean excess sealant or compound from glass and framing members immediately after application, using solvents or cleaners recommended by manufacturers.

## 4.00 GLASS PRODUCTS

### 4.01 SOLARSCREEN LOW-E LAMINATED VISION GLASS UNIT

- A. Glass Requirements
1. Exterior Ply—1/4" Clear Heat Strengthened (HS)  
ASTM C 1036 Type 1, Class 1 Clear, Quality q3

- ASTM C 1048 Condition A, Kind HS
- ASTM C 1172 laminated glass
- 2. Interior Ply— 1/4" Tint Heat Strengthened (HS)  
ASTM C 1036 Type 1, Class 1 Clear, Quality q3  
ASTM C 1048 Condition A, Kind HS  
ASTM C 1172 laminated glass
- B. Unit Makeup
  - 1. 9/16" VH11-75 laminated glass unit (as manufactured by Viracon)
    - a. 1/4" Clear with VH-75 (low-e) coating on the #2 surface HS
    - b. Select autoclaved interlayer thickness as required to meet F.B.C. 2004 wind-borne debris protection
    - c. 1/4" Clear HS
    - d. For spandrel applications, add Viracon V-933 Warm Gray ceramic # 4
- C. Unit Performance Requirements
  - 1. Visible Light Transmission (VLT) of 81%
  - 2. Exterior Reflection of 9%
  - 3. Winter Nighttime U-Value of .97 BTU/(hr\*ft2\*°F)
  - 4. Summer Daytime U-Value of .88 BTU/(hr\*ft2\*°F)
  - 5. Shading Coefficient (SC) of .67
  - 6. Solar Heat Gain Coefficient (SHGC) of .58
  - 7. Light to Solar Heat Gain 1.40

#### 4.02. SECURITY GLAZING:

- A. Type S6: 3/8" (10 mm) nominal thickness, Monolithic Polycarbonate.
  - 1. GE Lexan MR10.
  - 2. Sheffield Makrolon AR.

#### 4/03 INTERIOR/ EXTERIOR DOOR GLAZING.

- A. All exterior doors and windows shall be a hurricane rated assembly.
- B. All interior glazed lights in doors and fixed frames shall be type S6 glass.

END OF SECTION 08 80 00

**SECTION 08 91 00 / LOUVERS**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENTS**

A. Conform to Division 1, Section 10000 and other sections of this division.

**1.02 Related work in other divisions/sections**

Division 3:	Concrete
Division 4:	Masonry
Division 9 :	Painting

**1.03 STRUCTURAL DESIGN REQUIREMENTS**

A. Design, engineer, fabricate and install units capable of withstanding the effects of loads and stresses from wind and normal thermal movement without evidencing permanent deformation of components, metal fatigue or noise from louver blade rattle or flutter, and permanent damage to fasteners or anchors.

1. Wind Load: Uniform pressure of 35# per sq. ft., acting inwards and outwards.
2. Normal thermal movement from ambient temperature changes (range) of 100 deg. F. (55.5 deg. C) and its effect on metal surfaces due to both solar heat gain and night time sky heat loss.

B. Structural design of systems will be the responsibility of the manufacturer and is to be designed to comply with the Florida Building Code along with additional wind loading as follows:

1. Code Conformance: Design of system shall comply with the requirements of ASCE-7, latest edition adopted by D.O.E. Design wind velocity shall be 130 mph x 1.15 importance factor, except as modified by 1.03, C of this section.

**1.04 FIELD MEASUREMENTS**

A. Verify size, location and placement of louver units prior to fabrication.

**1.05 PREASSEMBLY**

A. All units shall be preassembled in shop to greatest extent possible.

**1.06 SUBMITTALS**

A. Submit in accordance with General, Supplementary and Special Conditions.

B. In addition to manufacturer's product data, submit the following:

1. Shop drawings for all assemblies.
2. Samples of each type of metal finish.
3. Certified statement relative to free area of louvers.

## PART 2 - PRODUCTS

### 2.01 MANUFACTURER

A. Basis of design is Greenheck Co., Model ESS-501D High performance sightproof stationary louver. Subject to compliance with design and free area requirements, products of the following are acceptable:

Airolite Co., Model K638

Airstream Products Div., Penn Ventilator Co., Inc., Model SA4

B. See mechanical drawings and specifications.

### 2.02 MATERIALS

Extruded aluminum 6063, .081" minimum thickness.

### 2.03 FABRICATION, GENERAL

A. Fabricate louvers and accessories to comply with requirements indicated for design (blade angle, blade profile, blade spacing), metal type and form, sizes, depth, arrangement, and metal thicknesses indicated or required for performance and use intended.

1. Fabricate frames, including sills, to suit adjacent construction, with mullions at spacing indicated but not further apart than recommended by manufacturer.
2. Join frame members to one another and to blades with fillet welds, concealed from view.
3. Provide vertical mullion matching batten plates each end.

### 2.04 FINISH

A. Clear anodized aluminum finish. All flashings to match.

### 2.05 SCREENS

A. Provide removable screens on back sides of all louvers with galvanized 1/4" mesh bird fabric, set in galvanized frame.

### 2.06 SILL FLASHING PANS

At all exterior exposures provide 0.050 inch aluminum sill flashing pan to direct any

wind driven moisture to exterior. Finish to match louver.

### PART 3 - EXECUTION

- 3.01 Install screens in a removable fashion for maintenance and replacement.
- 3.02 Repair finishes damaged by cutting, welding, soldering, and grinding operations required for fitting and jointing. Restore finishes so there is no evidence of corrective work. Return items which cannot be refinished in field, to shop, make required alterations and refinish entire unit, or provide new units.
- 3.03 Protect dissimilar metal surfaces from corrosion or galvanic action by application of a heavy coating of bituminous paint on surfaces which will be in contact with concrete, masonry, or dissimilar metals.
- 3.04 INSTALLATION
  - A. Locate and place louver units plumb, level, and in proper alignment with adjacent work.
  - B. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.
  - C. Form closely fitted joints with exposed connections accurately located and secured.
  - D. Install louvers with interior clip angles at 16" maximum centers secured to both louver and framing.
  - E. Caulk continuous perimeter of each louver behind exterior flange.

END OF SECTION 08 91 00

**SECTION 09 00 00 / FINISHES**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, General Requirements, which applies to all sections of this Division 9. Provisions of this Section 09000 also apply to all sections of this Division 9. The articles contained in this section may modify, delete or add to the provisions of the conditions of the Contract.

1.02 FIELD COORDINATION

- A. Verify all field dimensions to insure close fit with work of adjoining trades.
- B. Coordinate and install this section's work in proper sequence and cooperation with all other trades, to insure that total work is completed within contract time schedule.

1.03 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Division 3:	Concrete
Division 4:	Masonry
Division 5:	Metals
Division 6:	Wood and Plastic Laminates
Division 7:	Thermal and Moisture Protection
Division 8:	Doors and Windows
Division 10:	Specialties
Division 12:	Furnishings

1.04 SINGLE SOURCE OF FINISH MATERIALS

- A. Furnish for each trade, all materials visible after completion of work, from single producing source.

1.05 OTHER APPROVED PRODUCERS

- A. Products referred to and materials and performance characteristics specified herein, establish the required quality of performance for this work. Other products which in CONTRACTOR'S experienced judgment offer equivalent quality, may be submitted for approval as per Division 1.

#### 1.06 SPECIAL MATERIAL DELIVERY AND HANDLING INSTRUCTIONS

- A. Deliver all materials to jobsite in undamaged original containers with manufacturer's labels thereon. Keep dry and soil free. Store above grade in clean dry place. Take care to prevent damage during storage and handling. Insure temperature of storage areas stays within 45 deg. F. to 85 deg. F. temperature range at all times.
- B. Protect all ferrous materials from rusting.
- C. Carefully stack all sheet goods to insure they do not deform during storage.

#### 1.07 INFLAMMABLE MATERIAL

- A. Take extra ordinary care to prevent fire. Open inflammable material only as needed. Keep rubbing cloths and oily rags in tightly closed metal containers, or remove from building at close of each day's work. Where inflammable materials are used and building's ventilation is inadequate, provide safety spark-proof fans, and prohibit smoking.

#### 1.08 CLIMATE PRIOR TO INSTALLATION

- A. Exterior "Wet-Trades" Work: all work shall cease when weather drops below 45 deg. F. or during periods of rainfall.
- B. Exterior "Dry-Trades" Work: all work shall cease during damp weather or below 50 deg. F. or until surfaces have thoroughly dried from effect of such weather. Do not commence work when excessive dust or insects are present.
- C. Interior "Wet-Trades" Work: all work shall cease when interior building temperature drops below 45 deg. F.
- D. Interior "Dry-Trades" Work: do not begin installation work until all "wet-trades" work is completed, and building is dried out and completely enclosed. Insure that minimum room temperature is 60 deg. F. Provide sufficient ventilation to remove excess moisture.
- E. Atmospheric and moisture conditions shall also be in conformance with guidelines established by manufacturer of each finish product.

#### 1.09 ACCEPTANCE OF SURFACES

- A. Prior to commencement of work, inspect all surfaces to receive work. Notify ARCHITECT in writing of any conditions, which in CONTRACTOR'S judgment prevent installations meeting all conditions of this specification. Beginning of work constitutes CONTRACTOR'S acceptance of sub-surfaces. This includes assurance that exterior and interior walls are complete, roofs are properly dried in and otherwise building

components are thoroughly dry prior to exterior and/or interior finish wall work.

#### 1.10 CLEANING OF INSTALLED AND SURROUNDING WORK

- A. Each Trade's Own Work: following erection, clean all work and leave free of defects. Refinish all surfaces judged damaged or defective by ARCHITECT, to match adjacent approved finishes. Remove units which are damaged or improperly applied, and replace as directed by ARCHITECT. Remove all debris and surplus materials promptly from site as work progresses.
- B. Other Trade's Work: at completion of work, remove all materials spilled, splashed, splattered, sprayed, smeared or spotted on all surfaces, including glass, light fixtures, other finished and unfinished surfaces, furniture, equipment, fittings, hardware, etc. Promptly and completely repair all damage done. Remove all scaffolding, rags, debris and containers from site. Satisfactorily repair and/or replace damage done to other trade's work through lack of adequate protection, accident or carelessness incidental to painting work, as directed by ARCHITECT.

#### 1.11 PROTECTION

- A. Each trade is to protect existing and newly finished surfaces from damage during its work. Cover with a non-staining Kraft paper or polyethylene sheet, etc. Maintain protection in place during work. Remove when work is completed. Correct any damage to existing and/or newly finished surfaces of other trades, caused as result of each working trades' work.
- B. Protect all floors from traffic until floor finish has set up.
- C. Then protect all finish work from soil and damage until OWNER accepts building for beneficial occupancy.

#### 1.12 EXTRA MATERIALS

- A. Upon completion of work, deliver any useable broken cartons of finish materials to OWNER. Refer to specific sections for required excess material to be furnished.

### PART 2 - FINISH SCHEDULE LEGEND

#### 2.01 GENERAL NOTES

- A. "Exposed Concrete" listed in Finish Schedule means integrally hardened concrete, cured and sealed in accord with specifications Section 03000. Excluded from this note are all exterior concrete walks listed in Schedule as numbered spaces. Refer to Division 2 for requirements.
- B. "Exposed Concrete With Sealer" shall mean the application of a pigmented

sealer in accordance with Specification Section 09910.

PART 3 - EXTERIOR FINISH NOTES

- 3.01 Aluminum Windows: no field applied finish required, unless noted otherwise.
- 3.02 Site Area Light Poles & Bases: painted color as selected, if not factory finished.
- 3.03 Cement Stucco: painted, color as selected unless integrally colored.
- 3.04 Roof Mounted Equipment: mfg. prefinished items, no field finishing required, touch-up damaged surfaces to match existing. Manufactured items not finish painted in shop will require field finish painting. Roof curbs to be painted.
- 3.05 Exposed Ferrous Metal Items: painted, color as selected.
- 3.06 Wall/Ceiling Louvers/Access Panels: paint to blend with adjacent surface or color as selected, if not suitably factory finished.
- 3.07 Metal Protection Posts: painted, color as selected.
- 3.08 Metal Fencing: no field applied finish required, unless noted otherwise.
- 3.09 Hollow Steel Doors, Frames: painted, color as selected.

END OF SECTION 09 00 00

**SECTION 09 24 00 / PORTLAND CEMENT PLASTER/METAL LATHING AND FURRING**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 09000 and other sections of this division.
- B. See drawings to determine conditions where material is applied to masonry, and/or to metal lathing and furring systems.
- C. Conform to "Specification for Metal Lathing and Furring" published by the Metal Lath Association.

PART 2 - PRODUCTS

2.01 STANDARD CEMENT PLASTER

A. MATERIALS

Portland Cement: ASTM C150-59, Type I, domestically produced.

Hydrated Lime: ASTM C206-49, Type S ( $\pm$  92% hydrated).

Sand: ASTM C35-57T.

Water: clean and fit to drink.

B. PROPORTIONING (by volume)

1 part Portland Cement

3 parts Sand

10% to 20% lime putty per bag of cement.

C. MIXING

Mix no lumpy, caked, or partially set materials. Mix stucco ingredients to smooth even mixture. Use only machine mixers, hand mixing not permitted. Mix only amount that can be applied within one (1) hour of mixing. Dump entire batch at one time. Immediately clean mixer and all tools thoroughly when not in continuous use.

2.02 EXECUTION

A. THICKNESS

1. Finished stucco work on metal lath totals 3/4" thickness (minimum).

2. Work applied to exterior standard concrete/masonry totals 1/2" thickness (minimum).

B. ALL BASE COATS ON METAL LATH

Apply in two operations, totaling  $\pm$  5/8" thick. Apply scratch coat in full coat with sufficient pressure to force it through and completely embed metal lath. Double back

and apply brown coat with sufficient pressure to form a good bond, rodged level and left rough, using broom, if necessary. After set, moisture cure for proper period of time before applying finish coat.

C. **BASE COAT ON MASONRY RECEIVING PORTLAND CEMENT PLASTERED FINISH**  
Apply in one operation, 3/8" thick, as brown coat specified in paragraph 2.02 A, hereinbefore.

D. **EXTERIOR FINISH COAT**  
Do not apply finish until brown coat has seasoned properly. Just before application of finish coat, wet brown coat evenly with fog spray. Evenly apply to uniform 1/8" thickness. Use carpet float finish for all work from approved field sample panel. "Cut-in" joint around all metal frames occurring in finished surface. Insure finish coat is free of hair cracks, checks or other imperfections.

E. **INTERIOR FINISH COAT**  
Apply as paragraph 2.02 D, hereinbefore, except use smooth trowel finish.

F. **ACCEPTANCE AND PATCHING**

1. Plaster containing cracks, blisters, pits, checks or discoloration is not acceptable. Remove and replace such plaster with approved plaster. Patching of defective work will be permitted only when approved by ARCHITECT and must match accepted work.
2. Keep control joints clean of stucco for caulking by others.

G. **FIRE RATED CEILINGS**  
Provide assembly adequate to meet U.L. rating(s) indicated.

### PART 3 - METAL LATHING AND FURRING

#### 3.01 PRODUCTS

A. **GENERAL FRAMING**

**Runner Channels:** 2" x 17/32", 16 gauge, galvanized, cold rolled.

**Furring Channels:** 3/4" x 1/2", 16 gauge, galvanized, cold rolled.

**Galvanized Studs:** 3 5/8" & 6", 18 & 20 gauge with matching runner.

**Furring Channel:** DWC-20 hat shape

**Resilient Channel:** RC-1

B. **LATH AND ACCESSORIES**

**Lath, Metal:** paper backed, galvanized lath, expanded metal, weighing minimum of 3.4 lbs./sq.yd. Furnish with corner lath and strip lath pieces. Use self furring lath over solid substrates.

**Resilient Furring Channel:** RC-1

**Casing Bead:** as Unimast 1/2" and 3/4" square nose galvanized with expanded wings, sized appropriate to material thickness. At specified locations furnish similar unit without expansion wing.

**Corner Bead:** as Unimast No. 1-A expanded corner bead, galvanized.

**Inside Corners:** Cornerite, 3" x 3".

**Suspension Wire, Tie Wire and Clips:** use galvanized #8 gauge wire, to support channels, and #16 gauge wire for all lath assemblies. Use case-hardened steel nails for nailing into masonry.

**Control Joints:** Unimast Double V expansion joint sized to material thickness (1/2" and 3/4")

**Screw Fasteners:** Type "S", bugle head, pan head or other selected for type of installation, lengths as required, all galvanized.

**Bullnose Corner Beads:** (3/4" R.) with expanded wings.

C. ACCESS DOORS  
Specified in Section 08310.

D. EXTERIOR PRIMING  
Shop coat all exterior-use furring and lathing materials with galvanized dip-coat, applied after lath fabrication.

### 3.02 EXECUTION

A. GENERAL  
Conform with all lathing procedures of referenced specification, applicable to jobsite conditions, as judged by ARCHITECT.

#### B. SUSPENDED SYSTEMS (PLASTER)

1. Install main runner channel at 4'-0" centers at right angles to framing above, for horizontal areas, and vertical at 4'-0" centers for vertical areas. Support main channels at maximum 5'-0" centers with #8 suspension wires supported from structure above.
2. Install 3/4" furring channels at 16" o.c. at right angles to main channels and fastened with wire ties and screws.
3. Run lath at right angles to furring channels. Tie securely with #16 gauge galvanized wire, lap lath according to good practices, to prevent plaster cracking.
4. Reinforce all inside corners with strip lath or corner lath.
5. Set casing beads along perimeter of plaster panels adjoining other materials or changes in direction. This includes perimeter of all ceiling areas, regardless of intersecting wall type.
6. Install control joints as shown on drawings but never greater than 10'-0" apart.
7. Set corner beads along all outside edges where change of plane occurs, unless detailed otherwise with casing beads.

8. Use galvanized self-tapping screws to fasten all casing stops, control joints and corner reinforcing to framing.
9. Insure complete installation is secure, true, plumb, level, and ready for stucco application.

C. SUSPENDED SYSTEM (GYPSUM BOARD)(NON-RATED)

1. Install main runner channel at 4'-0" centers at right angles to framing above, for horizontal areas, and vertical at 4'-0" centers for vertical areas. Support main channels at maximum 5'-0" centers with #8 suspension wires supported from structure above.
2. Install hat shape furring channels at 24" o.c. at right angles to main channels and tie at each intersection with double 18 gauge wire. Lap splices 12".
3. Screw attach to perimeter wall framing at maximum 4'-0" o.c.

D. FASCIA AND SOFFIT FRAMING

1. Install galvanized metal studs vertically and horizontally at spacing indicated. Secure to support framing and adjacent receiver channels with galvanized sheet metal screws in sufficient quantity and size to support loading conditions. Provide diagonal braces as indicated and clip to walls where adjacent to reduce unsupported lengths to 8'-0" maximum.
2. Install furring channels as indicated by screw fastening each flange to each main framing member.
3. Prepare openings for access doors and other penetrations with continuous solid framing around perimeter of opening.

END OF SECTION 09220

**SECTION 09 29 00 / GYPSUM DRYWALL**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 09000 and other sections of this division.

1.02 RELATED WORK IN OTHER DIVISIONS/SECTIONS

Section 09 29 10: Interior Wall Framing / Ceiling Framing  
Section 09 91 00: Painting

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's specifications and installation instructions with Project conditions and materials clearly identified or detailed for each required system.

1.04 SYSTEM REQUIREMENTS

- A. Performance Requirements: Fabricate and install systems as indicated but not less than that required to comply with ASTM C754 under the following conditions:
1. Gypsum board partitions
    - a. Standard systems: Maximum deflection of 1/240 of partition height.
    - b. Systems to receive water resistant gypsum board or backer board: Maximum deflection of 1/360 of partition height.
    - c. Interior suspended ceilings and soffits: Maximum deflection of 1/360 of distance between supports.
- B. Fire Resistance Ratings: Where fire resistance classifications are indicated, provide materials and application procedures identical to those listed by UL or tested according to ASTM E119 for type of construction shown.
- C. Acoustical Ratings: Where sound ratings are indicated, provide materials and application procedures identical to those tested by manufacturer to achieve Sound Transmission Class (STC) scheduled or indicated in accordance with ASTM E90.
- 1.05 QUALITY ASSURANCE
- A. Reference Standards
1. Applicable requirements of ASTM C754 for installation of steel framing.
  2. Install gypsum board in accordance with applicable requirements and recommendations of Gypsum Association GA 216, "Recommended

Specifications for the Application and Finishing of Gypsum Board", except

for more stringent requirements of manufacturer.

3. Apply acoustical sealant in accordance with applicable requirements of ASTM C919.

#### 1.06 DELIVERY, STORAGE AND HANDLING

##### A. Delivery

1. Deliver material to site promptly without undue exposure to weather.
2. Deliver in manufacturer's unopened containers or bundles, fully identified with name, brand, type and grade.

##### B. Storage

1. Store above ground in dry, ventilated space.
2. Protect materials from soiling, rusting and damage.
3. Store board to be directly applied to masonry walls at 70°F for 24 hours prior to installation.

#### 1.07 PROJECT CONDITIONS

##### A. Environmental Requirements

1. Do not install gypsum board when ambient temperature is below 40°F.
2. For adhesive attachment of gypsum board if approved by OWNER, and for finishing of gypsum board, maintain ambient temperature above 55°F from one week prior to attachment or joint treatment, and until joint treatment is complete and dry.

### PART 2 - PRODUCTS

#### 2.01 PRODUCTS AND MANUFACTURERS

- A. Panels specified herein refer to U.S. Gypsum Products. Equivalent systems produced by Kaiser, National Gypsum, or other nationally recognized producer will be approved by ARCHITECT. Reference systems is SA 923, USG Steel Framed Drywall System.
- B. Gypsum Board and Accessories: Listed products establish standard of quality and are manufactured by United States Gypsum Company (USG), Chicago, IL.
- C. Steel Framing and Furring: Company acceptable to Owner and Installer.
- D. Drywall Grid Suspension Assemblies: Listed products establish standard of quality and are manufactured by United States Gypsum Company (USG), Chicago, IL..

## 2.02 BOARD MATERIALS

- A. Moisture Resistant Panels: Minimum size 48" x 5/8" thick sheetrock (MR) panels with tapered edge joints, lengths as required for work to be performed.
- B. Fire Rated Panels: Minimum size 48" x 5/8" thick, Type "X", sheetrock panels with tapered edge joints, lengths as required for work to be performed.
- C. Abuse Resistant Panels: Minimum size 48" x 5/8" thick Fiberock brand panels, VHI Abuse-Resistant or approved equal.
- D. Cement Backer Board: Aggregated portland cement board with woven glass fiber mesh facing complying with ANSI A118.9, 5/8 inch thickness equal to Durock Cement Board by USG.

## 2.03 CORNER AND CASING BEADS/CONTROL JOINTS

### A. Metal Trim for Gypsum Board

- 1. USG Dur-A-Bead corner bead No. 103 (1 1/4" x 1 1/4")
- 2. USG Dur-A-Bead 200A and 200B metal trim.
- 3. USG #093 control joints.

### B. Paper-Faced Metal Trim for Gypsum Board

- 1. USG Paper Faced Metal Outside Corner No. B2XW.EL
- 2. USG Paper Faced Metal "J" Trim No. B9J and "L" Trim No. B4

## 2.04 FASTENERS

1" Minimum Type "S" bugle head screws to metal studs and wood blocking.  
1 1/4" Minimum Type "S" bugle head screws for attachment of panels to ceiling furring.

## 2.05 JOINT REINFORCEMENT

- A. Cross-fibered paper roll tape equal to USG Sheetrock Joint Tape. 1 31/32" minimum width.

## 2.06 JOINT COMPOUND

- A. One-material bedding and joint compound, powdered or premixed.

1. Abuse Resistant Panels: Use USG Setting-Type Joint Compound (Durabond) for the embedment of joint tape. Standard ready-mixed compounds (non-lightweight) can be used for the balance of the finishing.

## 2.07 ADHESIVE

- A. USG Durabond per manufacturer's recommendations for each application or as approved.

## 2.08 ACOUSTICAL SEALANT

- A. USG Sheetrock Acoustical Sealant, or as approved.

## 2.09 ACCESS DOORS

- A. As specified in Section 08 31 13/Access Doors.

## PART 3 – APPLICATION

### 3.01 BOARD INSTALLATION

#### A. Single Layer Gypsum Board on Metal Studs:

1. Apply gypsum board with long dimension at right angles to framing and/or furring channel.
2. Stagger joints on opposite sides of partitions.
3. Cut openings in gypsum board to fit electrical outlets, plumbing, light fixtures and piping snugly and small enough to be covered by plates and escutcheons. Cut both face and back paper.
4. Screw board in place securely with screws spaced according to manufacturer's instructions and/or code requirements.

#### B. Single Layer Gypsum Board on Furring:

1. Apply gypsum board with long dimension at right angles to framing and/or furring channel.
2. Center end joints over channel web; stagger end joints from those in adjacent rows of board.
3. Fasten boards to framing with screws spaced according to manufacturer's instructions and/or code requirements.

#### C. Double Layer Gypsum Board

1. Fasten base layer to studs or furring with screws, and attach face layer using laminating adhesive and screws, applied according to manufacturer's instructions and/or code requirements.
2. Offset face-layer joints at least 10 inches from parallel base-layer joints.
3. Screw both layers to metal supports at double layer ceiling applications and where required for fire-rated construction.

D. Water-Resistant Gypsum Board

1. Fasten boards to framing with screws spaced according to manufacturer's instructions and/or code requirements.
2. Complete plumbing rough-in before gypsum board panels are erected.
3. Separate gypsum panels from rough-in and fixtures by 1/4 inch space.
4. Make necessary cut-outs and seal cut or exposed panel edges with thinned-down ceramic tile adhesive or with waterproof flexible sealant, as recommended by gypsum board manufacturer.
5. Install water-resistant board horizontally.
6. Do not place water-resistant board directly over vapor retarder.
7. Prior to tile application, fill openings around pipes, fittings, fixtures, interior angles and other penetrations with waterproof flexible sealant, as recommended by gypsum board manufacturer. Do not fill 1/4 inch gap at bottom of panels.

E. Abuse Resistant Board (All Cells, Open Area, and Security Vestibule)

1. Apply gypsum fiber board vertically whenever possible. For horizontal panel application, panels must be gapped 1/16" of an inch. End joints should be loosely fit. Install panels a minimum of 3/8" above the floor. Minimize end joints.
2. Stagger joints on opposite sides of partitions.
3. Cut openings in gypsum board to fit electrical outlets, plumbing, light fixtures and piping snugly and small enough to be covered by plates and escutcheons.
4. Screw board in place securely with screws spaced according to manufacturer's instructions and/or code requirements.

F Ceilings

1. Install gypsum base sheets with long direction at right angles to framing and/or furring channels with end joints occurring over channels.
2. Stagger end joints.
3. Install ceiling boards prior to adjoining partition boards where feasible.
4. Apply wallboard with its long dimension at right angles to the Furring Channels. Locate wallboard butt joints over the center of furring channels. Attach wallboard with 1" self-drilling drywall screws 12" o.c. in the field of the board and 8" or 12" o.c. at butt joints, located not less than 3/8" or more than 1/2" from edges.
5. Double layer applications:
  - a. Apply base layer prior to base layer application on adjoining partitions; apply face layers in same sequence.
  - b. Apply gypsum base layer and face layer with long dimension parallel to supports. Offset joints of face layer at least 16 inches from base layer joints.
  - c. Fasten both base and face layers separately to supports.

- d. Stagger and space fasteners in accordance with gypsum base manufacturer's instructions and/or code requirements.

### 3.02 CORNER AND CASING BEADS

A. Install at all outside corners and joints with other materials.

1. Control Joints: install drywall control joints at all through-wall control joints in exterior walls.

Bed edges in drywall compound, keeping "V" clean.

Caulk "V" joint before painting or installing wall covering.

2. Refer to details for treatment of intersections at masonry walls to develop reveal locations.

### 3.03 ACCESSORY INSTALLATION

A. Trim

1. Use same fasteners to anchor trim accessory flanges as required to fasten gypsum board to supports, unless otherwise recommended by trim manufacturer.
2. Install metal or paper-faced metal corner beads at external corners.
3. Install metal or paper-faced metal casing bead trim whenever edge of gypsum board would otherwise be exposed or semi-exposed.

B. Control Joints

1. Install control joints at junction of gypsum board partitions with walls or partitions of other finish material.
2. Install control joints within long runs of partitions, ceilings or soffits at approximately 30'-0" on center or as indicated.
3. Where gypsum board is vertically continuous, as at stairwells, provide horizontal control joints at each floor level.

C. Special Trim: Install as indicated on Drawings and in accordance with manufacturer's instructions.

### 3.04 DOOR FRAMES

A. Refer to details and follow manufacturer's instructions.

### 3.05 JOINTS

A. Joint compound may need a slight amount of mixing before use, and in any case should be lightly mixed before any water is added. Mixing may be done with a potato-masher-type tool or by use of a low-speed drill. Use directly from the

container for treating fasteners and corner beads or for taping and finishing joints. Care should be taken when water is added to thin to a desired consistency.

- B. A uniformly thin layer of joint compound should be applied over the joint approximately 4" wide. The tape is then centered over the joint and embedded into the compound, leaving sufficient joint compound under the tape to provide proper bond. A thin coat of compound should cover the tape to minimize wrinkling or curling. Ceiling, wall angles and inside corner angles are reinforced with the tape folded to conform to the angle and embedded into the compound.
- C. After the compound is thoroughly dry (approximately 24 hours) the tape is covered with a coat of all-purpose or topping compound spread over the tape approximately 3" on each edge. After this coat is thoroughly dry, another coat of all-purpose or topping compound is applied with a slight, uniform crown over the joint. This coat should be smooth and the edges feathered approximately 3" beyond the preceding coat.
- D. Where gloss, semi-gloss enamel or nontextured flat paints are specified or where severe lighting conditions occur, a thin skim coat of joint compound, or a material manufactured especially for this purpose, shall be applied to the entire surface. The surface shall be smooth and free of tool marks and ridges.
  - 1. Note: It is recommended that the prepared surface be coated with a drywall primer prior to the application of finish paint. See painting specification.
- E. All inside corners are coated with at least two coats of compound with the edges feathered out.
- F. All nail or screw head dimples should receive three coats. These coats may be applied as each coat is applied to the joints.
- G. Finishing: sand entire bedding surfaces to smooth uniform finish, except that plenum barriers and attic barrier above ceiling do not need sanding.
- H. Textured Finish: for all painted gypsum board walls and ceilings, after sanding and finishing procedure, overspray and provide a flat smooth texture finish.
- I. Joints for non-fire rated plenum barriers and attic barrier to have joints bedded and taped, but no other finishing is required.

### 3.06 CLEANING AND PROTECTION

- A. Clean finished application of all soil, protect finish surfaces from damage and leave ready for Section 09000/Finishes, General/Legend applied finish.

- A. Support fixtures from primary framing or blocking.

### 3.08 BASE AND CEILING TRIM

- A. Install base and ceiling trim over all wall panels, after this section's work is complete.

## PART 4 - EXECUTION

- 4.01 Use producer's printed instructions for application to metal studs and furring. Assure blocking or studs fall at all edges of panels. Follow spacing requirements of screws for rated vs. non-rated partitions.

- A. Loosely butt gypsum board joints together and neatly fit.

- B. Do not place butt ends against tapered edges.

- C. Maximum allowable gap at end joints: 1/8 inch.

- D. Apply ceiling boards first where gypsum board ceilings and wall occur.

- 4.02 Wallboard shall be cut to allow 1/8" minimum to 1/4" maximum clearance between board and floor to prevent potential wicking.

- 4.03 Locations of differing installations over metal stud framing: (Refer to wall sections, details, finish schedule and ceiling plans for varying installations and finish schedule for applicable finish.) Panels shall be installed horizontally on walls – all finished surfaces.

- I. Toilet Rooms (Single) - 1 layers 5/8" MR gypsum board up to ceiling on Toilet Room side of wall.

- 1. 1 layers 5/8" tile backer board at tile locations.

- 4.04 Caulk perimeter intersections. Penetrations in fire rated walls/dividers shall be sealed appropriately to maintain rating. (Ductwork to receive fire dampers.)

END OF SECTION 09 29 00

**SECTION 09 29 10 / INTERIOR WALL FRAMING / CEILING FRAMING / PLENUM DIVIDERS****PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

A. Conform to Division 1, Section 09000 and other sections of this division.

**1.02 RELATED WORK IN OTHER DIVISIONS/SECTIONS**

Division 8:	Doors and Windows
Section 09 29 00	Gypsum Drywall
Division 10:	Specialties
Division 12:	Furnishings

1.03 Refer to drawings for locations and extent of all stud/drywall work and for specific location of rated partitions. Refer to reflected ceiling plans for heights thereof and for partitions penetrating ceiling and plenum divider locations.

**PART 2 - PRODUCTS****2.01 GENERAL**

A. Metal stud system herein is U.S. Gypsum's USG Steel Framed Drywall System SA-923 with framing spaced typically 16" o.c. except as noted otherwise. Equivalent systems produced by Kaiser, National Gypsum, or other nationally recognized producer will be approved by ARCHITECT.

**2.02 FRAMING AND MATERIALS**

A. Studs: galvanized steel, standard "C" studs, 3 5/8" and 6" width, 22 gauge minimum (typical unless otherwise shown on drawings or specified herein). Follow manufacturer's data for limiting wall heights for each assembly, and increase material gauge to suit height conditions.

B. Metal Stud Runners: matched to stud width, galvanized, minimum 1 1/4" flange for floor and ceiling runners.

C. Metal Stud Fasteners: 3/8" USG brand screws, pan head Type S for typical work. Use 1/2" Type S-12 pan head screws for steel studs to door frame anchors.

D. Jamb Anchor Clips: standard USG galvanized units sized to stud width.

- E. Furring Channel: DWC-20, hat shape, 7/8" & 1 1/2".
- F. Resilient Channel: RC-1.
- G. Suspension Wire / Tie Wire: No. 8 & 18 gauge, galvanized.

#### 2.03 TOP-OF-STUD BRACES

- A. Refer to paragraph 2.02, Framing and Materials.

#### 2.04 ACCESS DOORS

- A. Refer to Section 08310.

### PART 3 - EXECUTION

#### 3.01 STUD SYSTEM ERECTION

- A. Attach metal runners at floor (& ceiling if called for) each end and typically 16" o.c. For typical walls position studs vertically at 16" o.c., engaging floor and ceiling runners. When necessary, splice studs with 8" nested lap and one positive attachment per stud flange. Place studs in direct contact with all frame jambs, abutting partitions, partition corners and existing construction elements. Anchor all studs for shelf/cabinet-walls and those adjacent to door and window frames, partition intersections, and corners to ceiling and floor runner flanges with USG metal lock fastener tool. Securely anchor studs to jamb and head anchor clips of door or borrowed-light frames by bolt or screw attachment. Over interior metal door and borrowed-light frames, not exceeding 5'-0" in width, place horizontally a cut-to-length section of runner, with a web-flange bend at each end, and secure with one positive attachment per flange. Position a cut-to-length stud (extending to ceiling runner) at vertical panel joints over door frame header.
- B. Install a continuous double stud each side of all door openings with or without borrowed lites from floor to top of wall. Stitch studs together at 16" o.c. maximum. Install a double member header across such openings that exceed 5'-0" in width.
- C. Refer to reflected ceiling plans for walls and plenum dividers extending thru ceiling. Position top runner minimum 1 1/2" above ceiling finish plane, except as otherwise indicated to extend higher.
- D. Where shown on reflected ceiling plan, extend wall framing to underside of overhead structure/deck. Refer to details for allowance for roof framing movement. Where possible run studs full length. Install 16 gauge stabilizing clips at 3'-0" o.c. maximum spacing secured to metal deck or structure but not to stud wall. Fire rated closures above ceilings are to extend to close gaps between deck and framing as tightly as

possible, allowing for structural movement. If fire rated closures occur under a steel beam or joist, framing shall be offset (but continuous) to the side of beam or joist up to the deck.

- E. Comply with Florida Building Code, latest edition and local ordinances to provide fire stops in wall assemblies. Generally this includes fire stops at floors, ceilings and roofs.
- F. Where framed walls terminate at underside of attic barrier, cut studs so that top track is set 1" to 1 1/2" maximum below suspended system hat channels. Attach wall track to suspension system at 4'-0" o.c. maximum after wall at underside of attic has been installed. Fill void between top of wall and barrier with insulation as a noise stop.
- G. Where metal studs are used for soffit or ceiling support, space studs no greater than 24" o.c. (U.L. rated ceilings spaced 16" o.c.). Provide back-to-back double studs as called for and securely screw fasten stud work to building structure and each other to comply with the most stringent code(s), ASCE-7, SREF, latest edition adopted by and the Florida Building Code for wind loading.
- H. Chases for Vertically & Horizontally Traversing Services: Coordinate with other trades such as mechanical, plumbing and electrical and provide stud space to accommodate such services, whether or not specifically indicated on drawings. Provide space by increasing stud width, double stud wall and/or widened offset chases at services if approved by ARCHITECT.

### 3.02 FIRE RATED BARRIERS

- A. Location(s) as shown on Architectural Drawings.
- B. Closures are to be complete fully to roof deck, ceilings, walls, building exterior walls to establish required one hour rating to full extent of space/volume each side of fire rated barrier. Work around structural elements and other building features as necessary to maintain rating integrity.

### 3.03 TOP OF WALL BRACES

- A. Set braces at 10 foot centers (maximum) along top of all walls, and also one centered over each door jamb framing stud. Attach to top runner with screw fasteners, extend at  $\pm 45$  deg. upward to structure and secure there with appropriate fasteners.
- B. These braces may be deleted as authorized by ARCHITECT where top of walls are connected to suspended attic barrier system.

### 3.04 WALL-HUNG SUPPORT AND OTHER BLOCKING

- A. Install 2x solid blocking (Division 6) in stud space for securely mounting wall hung/ supported items. Provide other special blocking as required by millwork and casework configurations and other equipment supports as required or otherwise called for.

### 3.05 DOOR AND GLAZED VIEW FRAMES

- A. Coordinate framing with scheduled sizes of doors and glazed frames. Follow manufacturer's instructions for securing frame anchors to studs.

### 3.06 ACCESS DOORS

- A. Provide as required for access to concealed equipment and valves, etc.

END OF SECTION 09 29 10

**SECTION 09 51 00 / SUSPENDED CEILING SYSTEM**

**PART 1 - GENERAL**

1.01 RELATED DOCUMENTS

A. Conform to Division 1, Section 09 00 00 and other sections of this division.

1.02 Do not begin work until all painting or wall coating work is completed.

1.03 Prior to start of work verify with ARCHITECT that he has viewed and approved all above ceiling installations.

1.04 This section includes typical suspended ceilings and an additional suspended grid to support attic insulation barrier.

**PART 2 - PRODUCTS**

2.01 SUSPENSION SYSTEM

A. Acceptable Systems:

Armstrong	-	"Prelude XL"
Chicago Metallic Corp.	-	200 System
USG	-	Donn Brand DX
BPB Celotex	-	Classic Tab System

Main Tees: (1 1/2" depth minimum)

Armstrong	-	#7300
Donn/USG	-	DX 24
CMC	-	211
BPB Celotex	-	C12-12-15

4'-0" Cross Tees: (1 1/2" depth minimum)

Armstrong	-	# XL7340
Donn/USG	-	DX 424
CMC	-	214
BPB Celotex	-	CS4-12-15

2'-0" Cross Tees: (1" depth minimum)

Armstrong	-	# XL7128
Donn/USG	-	DX 216
CMC	-	229
BPB Celotex	-	CS2-12-08

B. Wall Mould: Matching angle shape with 1" exposed face.

C. Hanger Wire

1. Secondary Attic Insulation Barrier: AWG steel wire, #9.
  2. Suspended Finish Ceiling Grid: AWG steel wire, #12.
- D. Fasteners: Self tapping sheet metal screws and masonry nails.
- E. Clips: Hold down clips for acoustical panels, fabricated by suspension system manufacturer.

#### 2.02 ACOUSTICAL PANELS: (ALL CLASS A FLAME SPREAD RATING)

- A. Regular Panels: (Acoustical 1) Armstrong World Industries, Inc., No. 1728, (Celotex Vantage 10, USG Interiors, Radar, No. 2110 24" x 24" x 5/8" lay-in. CAC allowable range 35-39, light reflectance value not less than 82%, NRC minimum absorption of .50 and maximum of .60 sabins per square foot at 500 CPS, flame spread 0-25, and white vinyl latex paint finish, fine fissured texture, non-directional, mineral fiber, .70 lb./SF.
- B. Wall Mould Caulking: gun grade polymerized non-staining caulking compound formulated to minimum requirements of Federal Specification TT-C-598B; A.C. Horn "Volcatex" or as approved.

### PART 3 - EXECUTION

#### 3.01 GENERAL

- A. Install acoustical materials only by authorized applicators of materials used. Do all work in strict accord with manufacturer's printed instruction covering handling, care, and installation of his products.

#### 3.02 SUSPENSION SYSTEMS

##### A. Ceiling System

1. Lay out each room to conform to reflected ceiling plans. Also see drawings for coordination with Division 15 and 16 work.
2. Attach hanger wires to the additional insulation barrier grid (at the hanger wire not grid) or roof structure. Hangers shall have a minimum spacing of 4 feet each way. Securely loop and twist to each fastener and main tee. Standard clips for fastening hanger wires to metal deck and/or bar joists are permitted. Insure each main hanger track piece has a minimum of two (2) hanger wires. Suspension wires shall not exceed 1:6 out of plumb unless counter sloping wires or horizontal bracing is provided. Suspension wires shall be arranged such that ducts, pipes, etc. do not press against wires.
3. Main tee members shall be one piece without seams/joints of any kind in rooms/spaces 12 feet or less. Main tee members shall be a minimum of 6 feet in length regardless of room/space dimension. Deviations to these instructions shall have the approval of the OWNER/ARCHITECT prior to installation.
4. Insure that all HVAC and electrical fixtures (including all lights, exit lights,

speakers, exhaust grills, A/C diffusers, etc.) in ceiling system are supported on two main tee members, and that each item penetrating ceiling support is supported with two hanger wires, one at each diagonal corner of each fixture. Frame around all HVAC and electrical fixtures occurring in ceiling system, tied/from structure above, not grid support. Comply with National Electric Code, Article 410, for additional light fixture attachment. Wire slopes as above.

5. Install all cross tees to true lines to accommodate ceiling tile panels, at spacing as indicated
6. Install all wall moulds with continuous caulking bead applied to wall mould prior to erection. Also continuously caulk crack between wall and wall mould after mould is installed. Erect to wall, true and level with nails or screws at 2'-0" centers, minimum 3/4" long.
7. Install special ceiling closures to cover all vertical changes in ceiling planes and/or where shown on drawings.

### 3.03 CLEANING AND PROTECTION

- A. Following erection, clean all dirty or discolored tile and leave free of defects. Use clips to hang finish grid from sub-grid. Remove units which are damaged along edge or in panel, or improperly applied and replaced as directed by ARCHITECT.
- B. At the Punch List Inspection, the Sarasota County School Board Building Inspector shall mark any defective, damaged, broken, etc. ceiling tile with a permanent marker and these shall be replaced at the CONTRACTOR'S expense.

END OF SECTION 09 51 00

**SECTION 09 65 00 / RESILIENT FLOORING AND BASE**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 09 00 00 and other sections of this division.
- B. Manufacturer of flooring products shall provide a certificate stating that flooring meets Class I or II minimum requirements.
- C. Colors will be selected from manufacturer's full standard color line (multiple colors for each floor material with no limitation on quantities of each color) upon approval of submittals during construction period. Asbestos bearing materials will not be approved.

PART 2 - PRODUCTS

2.01 VINYL COMPOSITION TILE (Composition 1 / Class 2) (12" x 12" x 1/8")

- A. Manufacturer and color selection shall be limited to the following:
  - 1. Armstrong - Standard Excelon
  - 2. Azrock - Standard
  - 3. Other manufactures approved by Architect.
- B. Feature Strips: 1" x 24", 1/8" thick, solid color.

2.02 BASE

- A. Johnsonite, Inc. Solid rubber cove base – 1/8". Color to be selected from manufacturer's full standard product line.

2.03 SEALERS, CLEANERS AND WAXES

- A. As recommended by manufacturer of tile furnished, or as approved by Servicemaster.

2.04 EXCESS MATERIALS

- A. All useable scraps of materials supplied shall be stored and left for use by the OWNER, as well as the following quantities of uncut goods for each color used:
  - 1. Vinyl Composition Tile: 10 full boxes.
  - 2. Cove Base: minimum 40 lineal feet.
- B. All materials shall be bundled and labeled per color and pattern, ready for storage. In the event multiple colors are selected, ARCHITECT will designate which color(s) to provide.

### PART 3 - EXECUTION

#### 3.01 GENERAL

- A. Start no work in areas until work of other trades, including painting, glazed wall coatings and work which goes through resilient flooring has been completed. Broom clean and well ventilate areas being worked. Use methods of installation as recommended by manufacturer of material. Perform only by qualified installers approved by resilient floor manufacturer. Where solvent-based adhesives are used and building ventilation is inadequate, provide safety sparkproof fans, and prohibit smoking.
1. Flooring material is not required under fixed millwork, casework or equipment with full base closure.

#### 3.02 SUB-FLOOR PREPARATION

- A. Completely cure and dry concrete sub-floor. Clean it free from paint, oil, grease, curing compounds not approved by adhesive manufacturer, and other foreign materials. Fill rough spots, cracks, surfaces varying more than 1/8" per 10 feet and/or 1/16" per running foot, and other surface defects with approved rubber latex filler material and sand smooth. Include sawn or other slab control joints.

#### 3.03 ADHESIVE APPLICATION

- A. Follow adhesive manufacturer's directions for mixing and applying adhesive. Cover surface evenly with adhesive. Do not exceed maximum working areas recommended by manufacturer for area covered by one application of adhesive. Install flooring within time limits recommended by manufacturer. If adhesives "film over" or dries, remove it and recoat areas.

#### 3.04 VINYL COMPOSITION TILE

- A. Acclimate vinyl composition tile to suggested manufacturer methods. Condition room to a temperature of 72°-76° for 24 hours.
- B. Layout all rooms so that field centers on room and so that cut tiles at walls are no less than 1/2 tile width. Neatly trim tile around perimeters of rooms and fixed millwork and equipment items, such that base cover will fully cover tile edge.
1. Feature Strips: Install 1" strip centered under door at all locations where two adjoining rooms receive vinyl composition tile.
  2. Let flooring under all metal thresholds.
  3. Neatly fit and glue around metal cleanout and electrical outlets cover plates. Factory finished covers are to be set with top aligned with top of floor finish.
  4. Neatly trim and fit to door frames and the like and then caulk such joints.

### 3.06 BASE INSTALLATION

- A. Firmly cement base to dried wall. Fit to pre-formed external corners. Scribe base accurately to trim and plinths. Include base around all millwork and casework units and shelving cabinets secured to wall and floor, as well as free standing units. Brace corners as required until adhesive has firmly set. Install no base piece less than 12" long. Do not make any joint within 12" of a corner. Include base along metal frames at doorways.

### 3.07 CLEANUP

- A. Remove all debris and surplus materials promptly from site as work progresses. After completion and before acceptance of work, clean all installed surfaces of adhesive, dirt, and all other foreign materials.

### 3.08 FINISHING

- A. Provide finishing of newly installed vinyl composition tile as described below. Any deviation between this specification and the tile manufacturer's standard finishing recommendations shall have in writing that manufacturer's prior approval.
  - 1. Scrub floor with a neutral detergent solution and a scrubbing pad (3M blue or green or equal) or equivalent brush.
  - 2. Thoroughly rinse floor and allow to dry.
  - 3. Apply one (1) coat floor sealer and four (4) coats floor finish. Contractor is to use same products (sealer and finish) used by the Manatee County (OWNER). Allow sufficient drying time (approximately 45 minutes – 1 hour) between each coat of sealer and finish.

### 3.09 PROTECTION

- A. Protect all resilient flooring from all damage until building is accepted by OWNER. Replace all damaged work prior to acceptance of building by OWNER.

END OF SECTION 09 65 00

**SECTION 09 68 00 - CARPET**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:

1. Tufted carpet.

- B. Related Sections include the following:

1. Division 2 Section for removing existing floor coverings.

2. Division 9 Section for resilient wall base and accessories installed with carpet.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include manufacturer's written data on physical characteristics, durability, and fade resistance. Include installation recommendations for each type of substrate required.

1. Indoor Air Quality Test Reports- Submit CRI Green Label Plus certification for specified products (carpet, adhesives, and sealants) indicating that the test results do not exceed the stated emission criteria of the CRI Indoor Air Quality Carpet Testing Program.
2. Sustainability Commitment: Carpet manufacturer must practice environmental responsibility through programs of raw material reduction, recycling, reuse, and energy and natural resource conservation. Manufacturer shall submit overview of their company's environmental program and research & development toward sustainable design.

- B. Samples: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.

1. Carpet: 12-inch- (300-mm-) square Sample.

2. Exposed Edge Stripping and Accessory: 12-inch- (300-mm-) long Samples.

3. Carpet Cushion: 6-inch- (150-mm-) square Sample.

4. Carpet Seam: 6-inch (150-mm) Sample.

5. Mitered Carpet Border Seam: 12-inch- (300-mm-) square Sample. Show carpet pattern alignment.

- C. Product Schedule: Use same room and product designations indicated on Drawings and in schedules.
- D. Maintenance Data: For carpet to include in maintenance manuals specified in Division 1. Include the following:
  - 1. Methods for maintaining carpet, including cleaning and stain-removal products and procedures and manufacturer's recommended maintenance schedule.
  - 2. Precautions for cleaning materials and methods that could be detrimental to carpet.

#### 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who is certified by the Floor Covering Installation Board or who can demonstrate compliance with its certification program requirements.
- B. Fire-Test-Response Characteristics: Provide products with the critical radiant flux classification indicated in Part 2, as determined by testing identical products per ASTM E 648 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
- C. Product Options: Products and manufacturers named in Part 2 establish requirements for product quality in terms of appearance, construction, and performance. Other manufacturers' products comparable in quality to named products and complying with requirements may be considered. Refer to Division 1 Section "Substitutions."
- D. Mockups: Before installing carpet, install mockups for each type of carpet installation required to demonstrate aesthetic effects and qualities of materials and execution. Install mockups to comply with the following requirements, using materials indicated for the completed Work:
  - 1. Install mockups in the location and of the size indicated or, if not indicated, as directed by Architect.
  - 2. Notify Architect seven days in advance of dates and times when mockups will be installed.
  - 3. Demonstrate the proposed range of aesthetic effects and workmanship.
  - 4. Obtain Architect's approval of mockups before starting work.
  - 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
  - 6. Remove mockups when directed.
  - 7. Approved mockups may become part of the completed Work if undamaged at time of Substantial Completion.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. General: Comply with CRI 104, Section 5, "Storage and Handling."

## 1.6 PROJECT CONDITIONS

- A. General: Comply with CRI 104, Section 6.1, "Site Conditions; Temperature and Humidity."
- B. Environmental Limitations: Do not install carpet until wet work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
- C. Do not install carpet over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive and concrete slabs have pH range recommended by carpet manufacturer.
- D. Where demountable partitions or other items are indicated for installation on top of carpet, install carpet before installing these items.

## 1.7 WARRANTY

- A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Special Carpet Warranty: Written warranty, signed by carpet manufacturer agreeing to replace carpet that does not comply with requirements or that fails within specified warranty period. Warranty does not include deterioration or failure of carpet due to unusual traffic, failure of substrate, vandalism, or abuse. Failures include, but are not limited to, more than 10 percent loss of face fiber, edge raveling, snags, runs, and delamination.
  - 1. Warranty Period: Lifetime High Performance
    - No Delamination
    - No more than 10% face fiber loss
    - No Edge Ravel
    - Moisture Management
    - Pattern Match Ability
    - Lifetime Stain
    - 10 Year Colorfastness to Light
    - 5 Year Colorfastness to Atmospheric Contaminants

## 1.8 EXTRA MATERIAL

- A. Furnish extra materials described below, before installation begins, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Carpet: Full-width rolls equal to 5 percent of amount installed for each type indicated, but not less than 10 sq. yd. (8.3 sq. M).

## 1.9 RECYCLING AND ENVIRONMENTAL

- A. Manufacturer must have a collection and recovery system in place and fully functional for the

reclamation and recycling of existing carpet product regardless of manufacturer and provides a written guarantee that no part of the product will be landfilled.

B. Manufacturer must have a collection and recovery system in place and fully functional for the reclamation and recycling of installed product and provide a written guarantee that no part of the product will be landfilled.

C. Manufacturer must currently possess the technology and capability to include post consumer and post industrial recycled content in any product it manufactures.

## PART 2 - PRODUCTS

### 2.1 CARPET : **THINK BIG, ECOWORX PERFORMANCE BL BACKING**

A. Subject to compliance with requirements, provide the following:

Style Think Big, Ecoworx Performance BL backing - Shaw Contract div of Shaw Industries

1) For Pricing: Debbie Giaconia, Institutional Representative

2) Cell Phone: 727-743-7280

B. Fiber Content: Eco SolutionQ Premium Branded Nylon

Must be trilobal shaped for color clarity

C. Fiber Type: BCF Nylon Type 6

D. Dye Method: 88% solution dyed, 12% yarn dyed

E. Protective Treatments: SSP Shaw Soil Protection

F. Antimicrobial: Must meet GSA Protocol AATCC-174, Part 1 or 2 AND Part 3

G. Face Construction: Multi-Level Pattern Loop

H Gauge: 1/12 inch

I. Stitches: 10.0

J. Finished Pile Thickness: .108 inch

K. Production Weight: 24 oz./sq. yd.

L. Density: 8000 oz/ sq.yd.

M. Primary Backing: Synthetic

N. Secondary Backing: Ecoworx Performance BL Backing

Must pass the British Spill Test independent of adhesive system

Must resist moisture degradation

Must install with B3600 Adhesive

Must mechanically weld the seams using CRI Green Label Certified, Shaw B8300 Moisture Impervious Seam Sealer (Sarasota SD mandate)

Must be able to double roll cut

Must contain a secondary soft backing /fleece to protect wall and trim

Backing must have ability to be fully recycled Cradle to Cradle.

O. Width: Broadloom 12'

P. Pattern Repeat: None, random match

Q. Performance Characteristics: As follows:

Carpet must be CRI Green Label Certified

Critical Radiant Flux Classification: Class 1.

Backing must not delaminate even when wet as tested under ASTM D3936

Backing must pass British Spill Test independent of adhesive.

Must pass the 10,000 cycle Impact Test

Optical Density of Smoke (flaming) not more than 300 per ASTM E662.

Electrostatic Propensity no greater than 3.0 as per AATCC 134.

Colorfastness to Crocking: Not less than 4, wet and dry, per AATCC-165.

Colorfastness to Light: Not less than 4 after 40 AFU (AATCC fading units) per ATCC-16.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet performance. Verify that substrates and conditions are satisfactory for carpet installation and comply with requirements specified.
- B. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:
  - 1. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by the following:
    - a. Carpet manufacturer.

- b. Carpet cushion manufacturer.
- 2. Subfloor finishes comply with requirements specified in Division 3 Section "Cast-in-Place Concrete" for slabs receiving carpet.
- 3. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. General: Comply with CRI 104, Section 6.2, "Site Conditions; Floor Preparation," and carpet manufacturer's written installation instructions for preparing substrates indicated to receive carpet installation.
- B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, and depressions in substrates.
- C. Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by the following:
  - 1. Carpet manufacturer.
  - 2. Carpet cushion manufacturer.
- D. Broom and vacuum clean substrates to be covered immediately before installing carpet. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.3 INSTALLATION

- A. Direct-Glue-Down Installation: Comply with CRI 104, Section 8, "Direct Glue-Down Installation."
- B. Comply with carpet manufacturer's written recommendations for seam locations and direction of carpet; maintain uniformity of carpet direction and lay of pile. At doorways, center seams under the door in closed position.
  - 1. Bevel adjoining border edges at seams with hand shears.
  - 2. Level adjoining border edges.
  - 3. Must install with B3600 Adhesive.
  - 4. \*Seams to be sealed using CRI Green Label Certified, Shaw B8300 Moisture Impervious Seam Sealer\* (Sarasota SD mandate)
- C. Do not bridge building expansion joints with carpet.

- D. Cut and fit carpet to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet manufacturer.
- E. Extend carpet into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on finish flooring as marked on subfloor. Use nonpermanent, nonstaining marking device.
- G. Install pattern parallel to walls and borders.

#### 3.4 CLEANING AND PROTECTION

- A. Perform the following operations immediately after installing carpet:
  - 1. Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet manufacturer.
  - 2. Remove yarns that protrude from carpet surface.
  - 3. Vacuum carpet using commercial machine with face-beater element.
- B. Protect installed carpet to comply with CRI 104, Section 15, "Protection of Indoor Installations."
- C. Protect carpet against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet manufacturer.

END OF SECTION 09 68 20

SECTION 09900 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. This Section includes surface preparation and field painting of the following:
  - 1. Exposed exterior items and surfaces.
  - 2. Exposed interior items and surfaces.
  - 3. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.
- C. Paint exposed surfaces, except where the paint schedules indicate that a surface or material is not to be painted or is to remain natural. If the paint schedules do not specifically mention an item or a surface, paint the item or surface the same as similar adjacent materials or surfaces whether or not schedules indicate colors. If the schedules do not indicate color or finish, the Architect will select from standard colors and finishes available.
  - 1. Painting includes field painting of exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron work, and primed metal surfaces of mechanical and electrical equipment.
- D. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.
  - 1. Prefinished items include the following factory-finished components:
    - a. Architectural woodwork and casework.
    - b. Acoustical wall panels.
    - c. Metal toilet enclosures.
    - d. Metal lockers.
    - e. Unit kitchens.
    - f. Elevator entrance doors and frames.
    - g. Elevator equipment.
    - h. Finished mechanical and electrical equipment.
    - i. Light fixtures.
    - j. Distribution cabinets.
  - 2. Concealed surfaces include walls or ceilings in the following generally inaccessible spaces:
    - a. Foundation spaces.
    - b. Furred areas.
    - c. Ceiling plenums.
    - d. Utility tunnels.
    - e. Pipe spaces.
    - f. Duct shafts.
    - g. Elevator shafts.
  - 3. Finished metal surfaces include the following:
    - a. Anodized aluminum.
    - b. Stainless steel.

- c. Chromium plate.
- d. Copper.
- e. Bronze and brass.
4. Operating parts include moving parts of operating equipment and the following:
  - a. Valve and damper operators.
  - b. Linkages.
  - c. Sensing devices.
  - d. Motor and fan shafts.
5. Labels: Do not paint over Underwriters Laboratories (UL), Factory Mutual (FM), or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

## 1.2 DEFINITIONS

- A. General: Standard coating terms defined in ASTM D 16 apply to this Section.
  1. Eggshell refers to low-sheen finish with a gloss range between 5 and 20 when measured at a 60-degree meter.
  2. Satin refers to low-sheen finish with a gloss range between 15 and 35 when measured at a 60-degree meter.
  3. Semigloss refers to medium-sheen finish with a gloss range between 30 and 65 when measured at a 60-degree meter.
  4. Full gloss refers to high-sheen finish with a gloss range more than 65 when measured at a 60-degree meter.

## 1.3 SUBMITTALS

- A. Product Data: For each paint system specified. Include block fillers and primers.
  1. Material List: Provide an inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
  2. Manufacturer's Information: Provide manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material proposed for use.
- B. Samples for Verification: Of each color and material to be applied, with texture to simulate actual conditions, on representative Samples of the actual substrate.
  1. Provide stepped Samples, defining each separate coat, including block fillers and primers. Use representative colors when preparing Samples for review. Re-submit until required sheen, color, and texture are achieved.
  2. Provide a list of materials and applications for each coat of each sample. Label each sample for location and application.
  3. Submit Samples on the following substrates for the Architect's review of color and texture only:
    - a. Concrete: Provide two 4-inch- square samples for each color and finish.
    - b. Concrete Masonry: Provide two 4-by-8-inch samples of masonry, with mortar joint in the center, for each finish and color.
    - c. Painted Wood: Provide two 12-inch- square samples of each color and material on hardboard.
    - d. Ferrous Metal: Provide two 4-inch- square samples of flat metal and two 8-inch- long samples of solid metal for each color and finish.

#### 1.4 QUALITY ASSURANCE

- A. Applicator Qualifications: Engage an experienced applicator who has completed painting system applications similar in material and extent to that indicated for this Project with a record of successful in-service performance.
- B. Source Limitations: Obtain block fillers, primers, and undercoat materials for each coating system from the same manufacturer as the finish coats.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the Project Site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:
  - 1. Product name or title of material.
  - 2. Product description (generic classification or binder type).
  - 3. Manufacturer's stock number and date of manufacture.
  - 4. Contents by volume, for pigment and vehicle constituents.
  - 5. Thinning instructions.
  - 6. Application instructions.
  - 7. Color name and number.
  - 8. VOC content.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.
  - 1. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

#### 1.6 PROJECT CONDITIONS

- A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 and 90 deg F.
- B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 and 95 deg F.
- C. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
  - 1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

#### 1.7 EXTRA MATERIALS

- A. Furnish extra paint materials from the same production run as the materials applied in the quantities described below. Package paint materials in unopened, factory-sealed containers for storage and identify with labels describing contents. Deliver extra materials to the Owner.

1. Quantity: Furnish the Owner with extra paint materials in the quantities indicated below:
  - a. Exterior, Flat Acrylic Finish: 1 case of each color applied.
  - b. Exterior, Low-LusterAcrylic Finish: 1 case of each color applied.
  - c. Exterior, Full-Gloss Alkyd Enamel: 1 case of each color applied.
  - d. Interior, Low-Luster Acrylic Finish: 1 case of each color applied.
  - e. Interior, Semigloss Acrylic Enamel: 1 case of each color applied.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in the paint schedules.
- B. Manufacturers Names: The following manufacturers are referred to in the paint schedules by use of shortened versions of their names, which are shown in parentheses:
  1. PPG Industries, Inc..
  2. Sherwin-Williams Co..
  3. Scott Paint Co., Sarasota FL

### 2.2 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide block fillers, primers, undercoats, and finish-coat materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
  1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.
- C. Colors: Provide custom colors of the finished paint systems to match the Architect's samples.
- D. Colors: Provide color selections made by the Architect.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with the Applicator present, under which painting will be performed for compliance with paint application requirements.
  1. Do not begin to apply paint until unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.

2. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.
- B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
1. Notify the Architect about anticipated problems using the materials specified over substrates primed by others.
- C. Inspect and thoroughly examine all surfaces to be painted prior to the commencement of any work. All work shall be scheduled and coordinated in such a manner that one phase of operation shall not interfere with another. Notify the project manager in writing of conditions that will adversely affect the satisfactory execution of the work including the presence of all dust, dirt and other foreign materials and immediately correct such condition at no charge if the defect was, or would have been, reasonable apparent during pre-bid inspections.

### 3.2 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of the size or weight of the item, provide surface-applied protection before surface preparation and painting.
1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
- B. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease before cleaning.
1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
  2. Note: Adhesion tests (ASTM-D 3359) will be conducted. Failure of adhesion of paints and or primers applied over gypsum board that has not been appropriately prepared will indicate the necessity of removal of non-adhering coatings, cleaning the gypsum surface and re-painting per this specification.
- C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
1. Provide barrier coats over incompatible primers or remove and reprime.
  2. Cementitious Materials: Prepare concrete, concrete masonry block, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
    - a. Use abrasive blast-cleaning methods if recommended by paint manufacturer.
    - b. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not paint sur-

- faces where moisture content exceeds that permitted in manufacturer's written instructions.
- c. Clean concrete floors to be painted with a 5 percent solution of muriatic acid or other etching cleaner. Flush the floor with clean water to remove acid, neutralize with ammonia, rinse, allow to dry, and vacuum before painting.
3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
    - a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
    - b. Prime, stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and backsides of wood, including cabinets, counters, cases, and paneling.
    - c. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on backside.
    - d. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.
  4. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with the Steel Structures Painting Council's (SSPC) recommendations.
    - a. Blast steel surfaces clean as recommended by paint system manufacturer and according to requirements of SSPC-SP 10.
    - b. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
    - c. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by paint manufacturer, and touch up with the same primer as the shop coat.
  5. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.
- D. Materials Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
  2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
  3. Use only thinners approved by paint manufacturer and only within recommended limits.
- E. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of the same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

### 3.3 APPLICATION

- A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
1. Paint colors, surface treatments, and finishes are indicated in the schedules.
  2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
  3. Provide finish coats that are compatible with primers used.
  4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convactor covers, covers for finned-tube radiation, grilles, and similar components are in place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.
  5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before the final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
  6. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
  7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
  8. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
  9. Sand lightly between each succeeding enamel or varnish coat.
- B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. The number of coats and the film thickness required are the same regardless of application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
  2. Omit primer on metal surfaces that have been shop primed and touchup painted.
  3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
  4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.
- C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
1. Brushes: Use brushes best suited for the type of material applied. Use brush of appropriate size for the surface or item being painted.
  2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.
  3. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.
- D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.

- E. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and in occupied spaces.
- F. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.
- G. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn through or other defects due to insufficient sealing.
- H. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
- I. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.
  - 1. Provide satin finish for final coats.
- J. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.
- K. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

#### 3.4 FIELD QUALITY CONTROL

- A. The Owner's representative will inspect each phase of preparation and painting. Surface preparation and each coat shall be inspected and approved prior to the application of any additional coat at no charge to the Owner. Forty-eight hours advance notice shall be given prior to the required inspection.
- B. The Owner reserves the right to invoke the following test procedure at any time and as often as the Owner deems necessary during the period when paint is being applied:
  - 1. The Owner will engage the services of an independent testing agency to sample the paint material being used. Samples of material delivered to the Project will be taken, identified, sealed, and certified in the presence of the Contractor.
  - 2. The testing agency will perform appropriate tests for the following characteristics as required by the Owner:
    - a. Quantitative material analysis.
    - b. Abrasion resistance.
    - c. Apparent reflectivity.
    - d. Flexibility.
    - e. Washability.
    - f. Absorption.
    - g. Accelerated weathering.
    - h. Dry opacity.

- i. Accelerated yellowness.
  - j. Recoating.
  - k. Skinning.
  - l. Color retention.
  - m. Alkali and mildew resistance.
3. The Owner may direct the Contractor to stop painting if test results show material being used does not comply with specified requirements. The Contractor shall remove noncomplying paint from the site, pay for testing, and repaint surfaces previously coated with the rejected paint. If necessary, the Contractor may be required to remove rejected paint from previously painted surfaces if, on repainting with specified paint, the 2 coatings are incompatible.

C. Minimum Coating Thickness Per Coat: Apply material at not less than the manufacturer's recommended spread rate nor less than the following DFT:

- |  |                |
|--|----------------|
| 1. Masonry Primer Coating                    | 1.0 mils, dry  |
| 2. Acrylic Coating                           | 2.0 mils, dry  |
| 3. Waterproofing Coating to Saturation point |                |
| 4. Elastomeric Coating                       | 8.0 mils, dry  |
| 5. Wood Primer                               | 2.0 mils, dry  |
| 6. Metal Primer                              | 2.0 mils, dry  |
| 7. Enamels                                   | 2.0 mils, dry  |
| 8. Coat Tar Coating                          | 20.0 mils, dry |

### 3.5 CLEANING

- A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from the site.
1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

### 3.6 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.
- B. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.

1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

### 3.7 EXTERIOR PAINT SCHEDULE

- A. Concrete, stucco and cement plaster: Provide the following finish systems over exterior concrete, stucco, and brick masonry surfaces:

1. System Code E-1 – Acrylic Finish: 1 finish coats over a primer.
  - a. 1st Coat: Scott # 692 Aquaseal Latex surface conditioner (white.)
  - b. 2<sup>nd</sup> Coat: Scott #420 Acrylic Velvet SupercoatThis system shall be mildew, fade and sulfide stain resistant and shall carry a minimum 5-year labor and material warranty. (BASE BID)
2. Alternate #2: Provide Sherwin Williams Loxon 2-coat exterior paint system.
  - a. 1 st Coat: Loxon Acrylic Primer A24W300
  - b. 2<sup>nd</sup> Coat: Loxon Waterproofing System A24 Series.

- B. Concrete Masonry Exterior Apply to all exterior masonry whether scheduled or unscheduled:

1. System Code E-2 – Acrylic Finish: Two finish coats over a block filler.
  - a. Primer: Scott #402 Ultra 100% Acrylic Latex Block Filler, squeegee to assure filling of all voids, and apply second coat immediately.
  - b. 2nd Coat: Scott #420 Acrylic Velvet Supercoat
  - c. 3<sup>rd</sup> Coat: Scott #420 Acrylic Velvet Supercoat
2. Alternate #2: Provide Sherwin Williams Loxon 2-coat exterior paint system.
  - a. 1 st Coat: Loxon Acrylic Primer A24W300
  - b. 2<sup>nd</sup> Coat: Loxon Waterproofing System A24 Series.

- C. Ferrous Metal: Provide the following finish systems over exterior ferrous metal. Primer is not required on shop-primed items Apply to exposed exterior faces and edges of shop primed steel doors, door frames, structural and miscellaneous steel, and similar items. Apply to metal louvers, vents, fan housings and similar items scheduled or indicated to be field painted.

System Code E-3 – Acrylic – Enamel Finish: 2 finish coats over a rust-inhibitive primer.

- a. Scott #941 Rust-Blok Alkyd Metal Primer Touch-Up existing primer with matching primer or prime unprimed metal
- b. 2nd Coat: Scott #430 Ultra 100% Acrylic Semi-Gloss Supercoat
- c. 3rd Coat: Scott # 430 Ultra 100% Acrylic Semi-Gloss Supercoat

- D. Zinc-Coated Metal and non ferrous: Provide then following finish systems over exterior zinc-coated (galvanized) and non-ferrous metal surfaces:
1. System Code E-4 – Acrylic-Enamel Finish: 2 coats finish coats over a galvanized metal primer.
    - a. 1st Coat: Scott #692 Aquaseal latex Surface Conditioner, White.
    - b. 2nd Coat: Scott #430 Ultra 100% Acrylic Semi-Gloss Supercoat
    - c. 3rd Coat: Scott #430 Ultra 100% Acrylic Semi-Gloss Supercoat
- E. PVC: Provide the following system over PVC:
1. System E-5
    - 1<sup>st</sup> Coat: Scott #692 Aquaseal Latex Surface Conditioner.
    - 2<sup>nd</sup> Coat: Scott #Z-70 Green DOT Super Hide 100% Acrylic Satin Stucco Paint.

### 3.8 INTERIOR PAINT SCHEDULE

- A. Masonry: Provide the following paint systems over interior concrete masonry surfaces scheduled to receive epoxy paint:
1. System Code: I-1
    - a. Primer: Scott #402 Ultra 100% Acrylic Block-Filler - sequeegee to assure filling of all voids, and apply second coat immediately.
    - b. 2nd Coat: Scott #921 Acry-Poxy Acrylic Epoxy Enamel Semi-Gloss
    - c. 3rd Coat: Scott #921 Acry-Poxy Acrylic Epoxy Enamel Semi-Gloss
- B. Masonry: Provide the following paint systems over interior concrete masonry surfaces scheduled to receive semi-gloss:
1. System Code: I-2
    - a. Primer: Scott #402 Ultra 100% Acrylic Block-Filler - sequeegee to assure filling of all voids, and apply second coat immediately.
    - b. 2nd Coat: Scott #435 100% Allgrip Acrylic Semi-gloss
    - c. 3rd Coat: Scott #435 100% Allgrip Acrylic Semi-Gloss
- C. Concrete: Provide the following paint systems over interior concrete floor surfaces schedule to be sealed.
1. System Code: I-3
    - a. 1 st coat Scott #700-709 Silicone Acrylic Concrete Stain, reduced 25% with xylene.
    - b. 2nd Coat: Scott #700-709 Silicone Acrylic concrete stain, full strength.
    - c. 3rd Coat: Scott #700-709 Silicone Acrylic concrete stain, full strength.

Broadcast fine carborundum between first and second coat – apply at rate of 10 pounds per 100 square feet.
- D. Gypsum Board: Provide the following finish systems over interior gypsum board surfaces in toilet rooms:
1. System Code: I-4
    - a. 1st Coat: Scott #120 Scrubmaster Latex Drywall Primer.
    - b. 2nd Coat: Scott #921 Acry-Poxy Acrylic Epoxy Enamel

- c. 3rd Coat: Scott #921 Acry-Poxy Acrylic Epoxy Enamel
  
- E. Gypsum Board: Provide the following finish systems over interior gypsum board surfaces:
  - 1. System Code: I-5
    - a. 1st Coat: Scott #692 Aquaseal, white.
    - b. 2nd Coat: Scott #435 Allgrip Acrylic Semi-Gloss
    - c. 3rd Coat: Scott #435 Allgrip Acrylic Semi-Gloss
  
- F. Plaster: Provide the following finish systems over new, interior plaster surfaces Scheduled to receive epoxy finish:
  - 1. System Code I-6
    - a. 1st Coat: Scott # 400 Ultra 100% Acrylic Supercoat Primer
    - b. 2nd Coat: Scott #921 Acry-Poxy Acrylic Epoxy Enamel
    - c. 3rd Coat: Scott #921 Acry-Poxy Acrylic Epoxy Enamel
  
- G. Plaster: Provide the following finish systems over new, interior plaster surfaces Scheduled to receive semi-gloss acrylic finish:
  - 1. System Code I-7
    - a. 1st Coat: Scott #692 Aquaseal, white.
    - b. 2nd Coat: Scott #435 Allgrip Acrylic Semi-Gloss
    - c. 3rd Coat: Scott #435 Allgrip Acrylic Semi-Gloss
  
- H. Ferrous Metal: Provide the following finish systems over primed ferrous metal:
  - 1. System Code I-8
    - a. Touch-Up: Scott #941 Rust-Blok Alkyd Metal Primer
    - b. 1<sup>st</sup> Coat: Scott # 692 Aquaseal Latex surface conditioner (white)
    - c. 2<sup>nd</sup> Coat: Scott #435 Allgrip Acrylic Semi-gloss
    - d. 3<sup>rd</sup> Coat: Scott #435 Allgrip Acrylic Semi-gloss
  
- I. Zinc-Coated Metal: Provide the following finish systems over zinc-coated metal:
  - 1. System Code I-9
    - a. 1<sup>st</sup> Coat: Scott # 692 Aquaseal Latex surface conditioner (white)
    - b. 2<sup>nd</sup> Coat: Scott #435 Allgrip Acrylic Semi-gloss
    - c. 3<sup>rd</sup> Coat: Scott #435 Allgrip Acrylic Semi-gloss
  
- J. Wood, Satin Transparent Finish Apply to interior wood handrails and other exposed unfinished wood surfaces indicated in finish schedules or drawings to receive transparent finish:
  - 1. System Code I-10
    - a. 1st Coat: Bruning #505-13 Polyurethane Satin Coating
    - b. 2nd Coat: Bruning #505-13 Polyurethane Satin Coating
    - c. 3rd Coat: Bruning #505-13 Polyurethane Satin Coating

Sand lightly between first and second coats.

**SECTION 10 00 00 / SPECIALTIES, GENERAL**

**PART 1 - GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Conform to Division 1, General Requirements, which applies to all sections of this Division 10. Provisions of this Section 10 00 00 also apply to all sections of this Division 10. The articles contained in this section may modify, delete or add to the provisions of the conditions of the Contract.

**1.02 FIELD MEASUREMENTS AND COORDINATION**

- A. Verify all field dimensions to insure close fit with work of other trades. Coordinate and install this section's work in proper sequence and cooperation with all other trades, to insure that total work is completed within contract time schedule.

**1.03 FINISHES**

- A. Unless specified otherwise, all items receive manufacturer's standard finish.

**1.04 OTHER APPROVED MANUFACTURERS**

- A. Manufacturer's products referred to and material and performance characteristics specified herein, establish the required quality of performance for this work. Other products which in CONTRACTOR'S experienced judgement offer equivalent quality may be submitted for approval as per Division 1.

**1.05 LOCATIONS**

- A. As described herein and/or keyed on drawings.

END OF SECTION 10 00 00

**SECTION 10 28 00 / TOILET ROOM AND RELATED ACCESSORIES**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 10000 and other sections of this division.
- B. All items refer to Bradley. Equivalent items of A & J Washroom Accessories, Miami Carey, McKinney Parker and Bobrick are approved.

PART 2 - PRODUCTS

2.01 SOAP DISPENSER

- A. GOJO Industries # 9721-12 micrell antibacterial lotion installed in each single toilet restroom and as shown on drawings.

2.02 TISSUE DISPENSER

- A. Kimberly-Clark "Insight" #09612 jumbo roll tissue dispenser – smoke grey.

2.03 MIRROR

- A. Bradley Mirror: #781-1836-4 18"W x 36"H stainless steel framed, bright annealed 20 gauge stainless steel.

2.04 GRAB BARS FOR ACCESSIBLE LOCATIONS

- A. Grab bars shall comply with the latest edition of The Department of Community Affairs and the latest edition of The Florida Building Code.
- B. Bars shall be 1 1/2" outside diameter, satin finish, concealed mounting with set screws.  
Provide configurations as follows and as indicated on drawings.
  - 1. Bradley #852-36 - 36" long grab bar.
  - 2. Bradley #852-42 – 42" long grab bar.
  - 3. Bradley #HN 250 – two wall grab bar.

2.05 FEMININE NAPKIN DISPOSAL

- A Bradley #4722-15, single compartment, surface mounted in Women's Restrooms.

## 2.06 PAPER TOWEL DISPENSER

- A. Kimberly Clark "Insight" #09706 -263 surface mounted, 400 towel capacity, single fold; Type 304 stainless steel finish. Provide one in each single user toilet room not equipped with electric dryer, one at each hand sink in Kitchen area, and one at each counter mounted sink throughout project.

## 2.12 MOP RACK

- A. Bradley: Mop Rack #9934 – 44 " long with 5 hooks and 4 holders. Provide one in each custodial closet. Locate as indicated on plans, 60" to top.

## PART 3 - EXECUTION

### 3.01 GENERAL

Verify all mounting heights and locations with ARCHITECT prior to making provisions for installations. Note that many items require special handicapped positioning.

### 3.02 ALL SURFACE-MOUNTED ITEMS

Secure all wall mounted items with screws into wood blocking or other fasteners into concrete masonry wall. Install all items to withstand 250 pound pull.

END OF SECTION 10 28 00

## **Section 10 44 00 / FIRE PROTECTION SPECIALTIES**

### Part 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

- A. Conform to Division 1, Section 10000 and other sections of this division.

#### 1.02 SUMMARY

- A. This Section includes the following:
  - 1. Fire protection cabinets for the following:
    - a. Portable fire extinguishers.

#### 1.03 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for fire protection specialties.
  - 1. Fire Extinguishers: Include rating and classification.
  - 2. Cabinets: Include roughing-in dimensions, details showing mounting methods, relationships of box and trim to surrounding construction, door hardware, cabinet type, trim style, and panel style.

#### 1.04 QUALITY ASSURANCE

- A. Source Limitations: Obtain fire extinguishers and cabinets through one source from a single manufacturer.
- B. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Standard for Portable Fire Extinguishers."
- C. Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.
  - 1. Provide extinguishers listed and labeled by FM.

#### 1.05 COORDINATION

- A. Coordinate size of cabinets to ensure that type and capacity of fire extinguishers indicated and provided by OWNER under separate Contract are accommodated.

## PART 2 – FIRE EXTINGUISHERS

## 2.01 MANUFACTURERS

- A. 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:
1. Portable Fire Extinguishers:
    - a. Ansul Incorporated
    - b. Badger; Div. of Figgie Fire Protection Systems
    - c. General Fire Extinguisher Corporation
    - d. J.L. Industries, Inc.
    - e. Larsen's Manufacturing Company
    - f. Modern Metal Products; Div. of Technico
    - g. Pem All; Div. of Pem Systems, Inc.
    - h. Potter-Roemer; Div. of Smith industries, Inc.
    - i. Watrous; Div. of American Specialties, Inc.
  2. Fire Protection Cabinets:
    - a. Filtrine Manufacturing Company
    - b. J.L. Industries, Inc.
    - c. Larsen's Manufacturing Company
    - d. Potter-Roemer; Div. of Smith industries, Inc.
    - e. Watrous; Div. of American Specialties, Inc.

## 2.02 PORTABLE FIRE EXTINGUISHERS

- A. Provide extinguishers and cabinets as indicated on "Life Safety Plan" or other drawings.
- B. Provide nominal 6 pound dry chemical type, rated 3A-40BC to stop Class A, B & C Fires. Mount at 4'-0" maximum above floor to top, or as instructed. Provide typical surface mounting clips, except where in cabinet.
- C. All fire extinguishers shall be furnished with dated certification tag showing extinguishers being valid for 12 full months after substantial completion date.

## 2.03 FIRE PROTECTION CABINETS

- A. Fire Extinguisher Cabinet shall be equal to Larsen Manufacture Company
1. AL-2409-6R semi-recessed with rolled edge trim
  2. Door: Vertical Duo with tempered glass, clear anodized aluminum finish.
  3. Mount with top at 4'-0" AFF.

### PART 3 – EXECUTION

#### 3.01 EXAMINATION

- A. Examine walls and partitions for suitable framing depth and blocking where recessed and semi-recessed cabinets are to be installed.
- B. Examine fire extinguishers for proper charging and tagging.
  - 1. Remove and replace damaged, defective, or undercharged units.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.02 INSTALLATION

- A. Comply with manufacturer's written instructions for installing fire protection specialties.
- B. Install in locations and at mounting heights indicated or, if not indicated, at heights acceptable to authorities having jurisdiction.
  - 1. Prepare recesses for cabinets as required by type and size of cabinet and trim style.
  - 2. Fasten cabinets to structure, square and plumb.

#### 3.03 ADJUSTING, CLEANING AND PROTECTION

- A. Adjust cabinet doors that do not swing or operate freely.
- B. Refinish or replace cabinets or doors damaged during installation.
- C. Provide final protection and maintain conditions that ensure that cabinets and doors are without damage or deterioration at the time of Substantial Completion.

END OF SECTION 10 44 00

**SECTION 12 00 00 / FURNISHINGS, GENERAL**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Conform to Division 1, General Requirements, which applies to all sections of this Division 12. Provisions of this Section 12 00 00 also apply to all sections of this Division 12. The articles contained in this section may modify, delete or add to the provisions of the conditions of the Contract.

1.02 FIELD MEASUREMENTS AND COORDINATION

- A. Verify all field dimensions to insure close fit with work of other trades. Coordinate and install this section's work in proper sequence and cooperation with all other trades, to insure that total work is completed within contract time schedule.

1.03 FINISHES

- A. Unless specified otherwise, all items receive manufacturer's standard finish.

1.04 OTHER APPROVED MANUFACTURERS

- A. Manufacturer's products referred to and material and performance characteristics specified herein, establish the required quality of performance for this work. Other products which in CONTRACTOR'S experienced judgment offer equivalent quality may be submitted for approval as per Division 1.

1.05 LOCATIONS

- A. As described herein and/or keyed on drawings.

END OF SECTION 12 00 00