

PROJECT MANUAL

**RENOVATIONS TO
LIVE OAK LIBRARY**

FOR

JEFFERSON PARISH

PROPOSAL NO. 50-00112628

**125 ACADIA DRIVE
WAGGAMAN, LOUISIANA 70094**

**BURGDahl & GRAVES - A.I.A. ARCHITECTS
CRUMB ENGINEERING, LLC – MECHANICAL ENGINEER
ELLIS ENGINEERING, LLC – ELECTRICAL ENGINEER**

30 JANUARY 2015

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BID DOCUMENTS

ADVERTISEMENT FOR BIDS

BID PROPOSAL NO. 50-00112628

Sealed bids will be received until the hour of **2:00 P.M.**, local time on Tuesday, **APRIL 21, 2015** in the Purchasing Department, Suite 4400, Jefferson Parish General Government Building, located at 200 Derbigny Street, Gretna, Louisiana, 70053, and publicly opened upon completion of administrative tasks for the following: **Renovations To Live Oak Library, 125 Acadia Drive, Waggaman, LA 70094**

The project work consists of interior and exterior renovations of an existing library as described in the Construction Documents.

All bids must be in accordance with the contract documents on file with the Jefferson Parish Purchasing Department, Suite 4400, Jefferson Parish General Government Building, at 200 Derbigny Street, Gretna, Louisiana. All bidders must show the Bid Proposal Number on the outside of their bid envelope and on the bid proposal. **Late bids will not be accepted.**

Each Bid must be accompanied by certified check, cashiers check, or bid bond acceptable to the owner in the amount equal to five percent (5%) of the total amount bid, and payable without condition to the owner. If submitting a bid online, vendors must submit an electronic bid bond through the respective online clearinghouse bond management system(s) as indicated in the electronic bid Solicitation on Central Auction House. No scanned paper copies of any bid bond will be accepted as part of the electronic bid submission.

The drawings and specifications are on file and open for inspection in the Jefferson Parish Purchasing Department, Suite 4400, Jefferson Parish General Government Building, at 200 Derbigny Street, Gretna, Louisiana. A complete set of Contract Documents may be secured from Burqdahl & Graves Architects, 2550 Belle Chasse Hwy., Suite 130, Gretna, LA 70053 (Phone 504-366-4433, FAX 504-366-0102) by licensed contractors upon receipt of \$ **75.00 per set**. Deposit on the first set of documents furnished bona fide prime bidders will be fully refunded upon return of documents in good condition no later than ten (10) days after receipts of bids.

The successful bidder will be required to furnish a performance bond guaranteeing faithful performance of the contract. Companies providing the bonds shall comply with the requirements of LRS-R.S. 38:2218 and R.S. 38:2219 as applicable.

The Jefferson Parish Council reserves the right to reject all bids and to reject bids for just cause, pursuant to the law.

A Pre-Bid Conference will be held at 10:00 AM on Wednesday, April 8, 2015 at Live Oak Library, located at 125 Acadia Drive, Waggaman, LA 70094. All interested parties are invited to attend.

Brenda J. Campos
Director
Purchasing Department

Jenifer Lotz
Chief Buyer
Purchasing Department

ADV: New Orleans Advocate: March 18 & 25, 2015 and April 1, 2015

Bids may also be viewed and submitted online at <http://purchasing.jeffparish.net>

IMPORTANT NOTICE TO ALL BIDDERS – BID REQUIREMENTS

Vendors may submit electronic bids with no fee for submission by using Central Auction House. Vendors may visit www.purchasing.jeffparish.net for further information and for link to Central Auction House or visit them directly at www.jeffparishbids.net. By submitting a bid, vendor agrees to comply with all provisions of Louisiana Law as well as compliance with Jefferson Parish Code of Ordinances, Louisiana Code of Ethics, as published on <http://ethics.la.gov> and applicable Jefferson Parish ethical standards.

As per LA R.S. 38:2212(A)(3)(c)(ii), the bid form shall contain Bid Security or Bid Bond, Acknowledgment of Addenda, Base Bid, Alternates, Signature of Bidder, Name, Title and Address of Bidder, Name of Firm or Joint Venture Corporate Resolution or other appropriate signature authorization, if required, Louisiana Contractors License Number, and on public works projects where unit prices are utilized, a section on the bid form where the unit price utilized in the bid shall be set forth; however, unit prices shall not be utilized for the construction of building projects, unless the unit price is incorporated into the base bid or alternates. Other documentation required shall be furnished by the low bidder within ten calendar days after the bid opening. Such documentation shall be supplied as originals (no copies).

All such required information or documentation not provided with the bid must be provided by the low bidder within 10 calendar days after the bid opening (originals only, no copies). Failure to provide said information and documentation within 10 calendar days after bid opening shall be grounds to declare the bid non-responsive. This information and documentation includes, but is not limited to, the Public Works Bid Affidavit, current W-9 Form and Tax Identification number (if currently not registered as a Parish vendor), and proof of insurance. However, the payment and performance bonds must be supplied by the successful bidder upon contract signing.

Contractor's Louisiana License shall be in the following category (to be determined and filled in by the department): Building Construction.

Bidder agrees that this bid shall be good and may not be withdrawn for a period of forty-five (45) calendar days after the scheduled closing time for receiving bids. In the event the Owner issues the Letter of Award (copy of adopted resolution awarding bid by Jefferson Parish Council) during this period, the bid accepted shall continue to remain binding until the execution of the Contract.

Attached hereto is the affidavit which must be provided by the low bidder as an original (not copy) within 10 calendar days after bid opening. This affidavit must be completed, signed and notarized. Failure to do so will cause bid to be rejected.

Low Bidder will execute the formal agreement and will deliver a Performance Bond or Bonds for the faithful performance of the Contract.

Bid Security, in the sum of five percent (5%) of the total bid price (Base Bid and any Alternates), is to become the property of the Owner in the event the successful bidder fails or refuses to execute the Contract or fails to produce performance and payment bonds upon contract signing. If submitting a bid online, vendors must submit an electronic bid bond through the respective online clearinghouse bond management system(s) as indicated in electronic bid Solicitation on Central Auction House. No scanned paper copies of any bid bond will be accepted as part of the electronic bid submission.

Further, upon receiving a notice to proceed, the Bidder agrees that all work shall be completed as follows (to be determined and filled in by the department): Award of Base Bid and any Alternate Bids: Substantial Completion within 195 calendar days, such limits commencing upon the date of issuance of Owner's "Order To Proceed". Final Acceptance with 225 calendar days, such time limits commencing upon the date of issuance of Owner's "Order To Proceed". The above calendar days for the completion of work shall include time allocation allowing for 30 days of lost production due to inclement weather.

Further, as per Resolutions 113646 and 113647, the Bidder agrees to pay, as liquidated damages, the sum of (to be determined and filled in by the department): Five Hundred Dollars (\$500.00) as follows for: (1) each consecutive calendar day after the agreed date of completion that the work remains substantially incomplete, or (2) each consecutive calendar day after substantial completion that the work has not been finally completed.

In addition to and not in lieu of the per diem liquidated damages, Owner shall also be entitled to recover from Contractor or Contractor's Surety additional liquidated damages as detailed in Resolutions 113646 and 113647. These additional liquidated damages may include, but are not limited to the following, in the amounts and for each of the items identified in the Supplementary Conditions (to be determined and filled in by the department):

- (1) Extended architectural and/or engineering fees \$ 125.00/ per hour ;
- (2) Extended Resident Project Representative fees \$ 65.00/ per hour ;
- (3) Extended construction management fees \$ Not Applicable ;
- (4) Extended Owner's overhead and personnel expenses \$ To Be Determined (based upon current parish billing rates) ; and
- (5) Owner's other costs directly related to the delay in completion beyond the Contract Times.

In addition to liquidated damages, in accordance with Section 6.02, "Labor; Working Hours," whenever Contractor's work requires inspections in excess of the budgeted amount for inspection, Contractor shall reimburse Owner for the additional costs incurred by the Owner with respect to inspection of the contracted project provided the additional costs for inspections are above the budgeted amount for the contracted project.

For this project, the Project Representative Services, in accordance with the terms of the Engineer's agreement with the Owner, provides that the average hourly rate to be charged for resident inspection for this construction project is \$ 65.00/ per hour and the reasonable budget for such inspections is \$ 101,400.00 (the overtime rates shall be \$ 78.00 per hour). The cost of inspection in excess of this budgeted amount shall be assessed against Contractor's progress payments, all in accordance with LSA R.S. 38:2216(L)(2).

It shall be the duty of every parish officer, employee, department, agency, special district, board, and commission; and the duty of every contractor, subcontractor, and licensee of the parish, and the duty of every applicant for certification of eligibility for a parish contract or program, to cooperate with the inspector general in any investigation, audit, inspection, performance review, or hearing pursuant to this chapter. Every parish contract and every bid, proposal, application or solicitation for a parish contract, and every application for certification of eligibility for a parish contract or program shall contain a statement that the corporation, partnership, or person understands and will abide by all provisions of this chapter.

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: Jefferson Parish
Attn.: Purchasing Department
200 Derbigny St., Suite 4400
Gretna, Louisiana 70053

BID FOR: Renovations To
Live Oak Library
125 Acadia Drive, Waggaman, LA 70094
Proposal No. 50-00112628

(Owner to provide name of project and other identifying information)

The undersigned bidder hereby declares and represents that she/he; a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by: Burgdahl & Graves AIA Architects and dated: January 30, 2015.

(Owner to provide name of entity preparing bidding documents.)

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following ADDENDA: (Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging)

TOTAL BASE BID: For all work required by the Bidding Documents (including any and all unit prices designated "Base Bid" * but not alternates) the sum of:

_____ Dollars (\$ _____)

ALTERNATES: For any and all work required by the Bidding Documents for Alternates including any and all unit prices designated as alternates in the unit price description.

Alternate No. 1 (Owner to provide description of alternate and state whether add or deduct) for the lump sum of:

N/A _____ Dollars (\$ _____)

Alternate No. 2 (Owner to provide description of alternate and state whether add or deduct) for the lump sum of:

N/A _____ Dollars (\$ _____)

Alternate No. 3 (Owner to provide description of alternate and state whether add or deduct) for the lump sum of:

N/A _____ Dollars (\$ _____)

NAME OF BIDDER: _____

ADDRESS OF BIDDER: _____

LOUISIANA CONTRACTOR'S LICENSE NUMBER: _____

NAME OF AUTHORIZED SIGNATORY OF BIDDER: _____

TITLE OF AUTHORIZED SIGNATORY OF BIDDER: _____

SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER **: _____

DATE: _____

* The Unit Price Form shall be used if the contract includes unit prices. Otherwise it is not required and need not be included with the form. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

** If someone other than a corporate officer signs for the Bidder/Contractor, a copy of a corporate resolution or other signature authorization shall be required for submission of bid. Failure to include a copy of the appropriate signature authorization, if required, may result in the rejection of the bid unless bidder has complied with La. R.S. 38:2212(A)(1)(c) or RS 38:2212(O) .

BID SECURITY in the form of a bid bond, certified check or cashier's check as prescribed by LA RS 38:2218.A is attached to and made a part of this bid.

**LOUISIANA UNIFORM PUBLIC WORK BID FORM
UNIT PRICE FORM**

TO: Jefferson Parish
Attn.: Purchasing Department
200 Derbigny St., Suite 4400
Gretna, Louisiana 70053

BID FOR: Renovations To
Live Oak Library
125 Acadia Drive, Waggaman, LA 70094
Proposal No. 50-00112628

(Owner to provide name of project and other identifying information)

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
N/A				

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
N/A				

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
N/A				

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
N/A				

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
N/A				

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
N/A				

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
N/A				

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
N/A				

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
N/A				

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ____			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (<i>Quantity times Unit Price</i>)
N/A				

Wording for "DESCRIPTION" is to be provided by the Owner.
All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner

BID BOND

KNOW ALL MEN BY THESE PRESENTS that we, the undersigned,

as PRINCIPAL, AND

as SURETY, are held and firmly bound unto the Jefferson Parish Council, Jefferson Parish, Louisiana, as OWNER in the penal sum of:

_____ DOLLARS (\$ _____)
for the payment of which, well and truly to be made, we hereby jointly and severally bid ourselves, successors and assigns.

The condition of the above obligation is such that whereas the Principal has submitted to the Parish of Jefferson, Louisiana a certain Bid, attached hereto and hereby made a part hereof to enter into a contract in writing, for the

in Jefferson Parish, Project No. _____, Proposal No. _____

NOW, THEREFORE,

- (a) If said Bid shall be rejected, or in the alternate,
- (b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a bond for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid,

then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount for this obligation as herein stated.

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

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

BID BOND (Continued)

In Presence of:

(Individual Principal)

(Business Address, including Zip Code)

(Partnership) _____
(SEAL)

ATTEST: _____ BY: _____

(Corporate Principal)

(Business Address, including Zip Code)

BY: _____
AFFIX CORPORATE SEAL

ATTEST: _____

(Corporate Surety)

(Business Address, including Zip Code)

BY: _____
AFFIX CORPORATE SEAL

Countersigned:

BY: _____
Attorney-in-Fact

STATE OF _____

Public Works Bid Affidavit Instructions

- **Affidavit is supplied as a courtesy to Affiants, but it is the responsibility of the affiant to insure the affidavit they submit to Jefferson Parish complies, in both form and content, with federal, state and parish laws.**
- **Affidavit must be signed by an authorized representative of the entity or the affidavit will not be accepted.**
- **Affidavit must be notarized or the affidavit will not be accepted.**
- **Notary must sign name, print name, and include bar/notary number, or the affidavit will not be accepted.**
- **Affiant MUST select either A or B when required or the affidavit will not be accepted.**
- **Affiants who select choice A must include an attachment or the affidavit will not be accepted.**
- **If both choice A and B are selected, the affidavit will not be accepted.**
- **Affidavit marked N/A will not be accepted.**
- **It is the responsibility of the Affiant to submit a new affidavit if any additional campaign contributions are made after the affidavit is executed but prior to the time the council acts on the matter.**

Instruction sheet may be omitted when submitting the affidavit

Public Works Bid

AFFIDAVIT

STATE OF _____

PARISH/COUNTY OF _____

BEFORE ME, the undersigned authority, personally came and appeared: _____, (Affiant) who after being by me duly sworn, deposed and said that he/she is the fully authorized _____ of _____ (Entity), the party who submitted a bid in response to Bid Number _____, to the Parish of Jefferson.

Affiant further said:

Campaign Contribution Disclosures

(Choose A or B, if option A is indicated please include the required attachment):

Choice A _____ Attached hereto is a list of all campaign contributions, including the date and amount of each contribution, made to current or former elected officials of the Parish of Jefferson by Entity, Affiant, and/or officers, directors and owners, including employees, owning 25% or more of the Entity during the two-year period immediately preceding the date of this affidavit or the current term of the elected official, whichever is greater. Further, Entity, Affiant, and/or Entity Owners have not made any contributions to or in support of current or former members of the Jefferson Parish Council or the Jefferson Parish President through or in the name of another person or legal entity, either directly or indirectly.

Choice B _____ There are **NO** campaign contributions made which would require disclosure under Choice A of this section.

Affiant further said:

Debt Disclosures

(Choose A or B, if option A is indicated please include the required attachment):

Choice A _____ Attached hereto is a list of all debts owed by the affiant to any elected or appointed official of the Parish of Jefferson, and any and all debts owed by any elected or appointed official of the parish to the Affiant.

Choice B _____ There are **NO** debts which would require disclosure under Choice A of this section.

Affiant further said:

That Affiant has employed no person, corporation, firm, association, or other organization, either directly or indirectly, to secure the public contract under which he received payment, other than persons regularly employed by the Affiant whose services in connection with the construction, alteration or demolition of the public building or project or in securing the public contract were in the regular course of their duties for Affiant; and

That no part of the contract price received by Affiant was paid or will be paid to any person, corporation, firm, association, or other organization for soliciting the contract, other than the payment of their normal compensation to persons regularly employed by the Affiant whose services in connection with the construction, alteration or demolition of the public building or project were in the regular course of their duties for Affiant.

Affiant further said:

Affiant personally has not been convicted of, nor has he/she entered into a plea of guilty or nolo contendere to any of the crimes or equivalent federal crimes listed below. No individual partner, incorporator, director, manager, officer, organizer, or member, who has a minimum of a ten percent ownership in the Bidding Entity, has been convicted of, or has entered a plea of guilty or nolo contendere to any of the crimes or equivalent federal crimes listed below. A conviction of or plea of guilty or nolo contendere to the following state crimes or equivalent federal crimes shall permanently bar any person or the bidding entity from bidding on public projects:

- (a) Public bribery (R.S. 14:118)
- (b) Corrupt influencing (R.S. 14:120)
- (c) Extortion (R.S. 14:66)
- (d) Money laundering (R.S. 14:230)

A conviction of or plea of guilty or nolo contendere to the following state crimes or equivalent federal crimes shall bar any person or the bidding entity from bidding on public projects for a period of five years from the date of conviction or from the date of the entrance of the plea of guilty or nolo contendere:

- (a) Theft (R.S. 14:67)
- (b) Identity Theft (R.S. 14:67, 16)
- (c) Theft of a business record (R.S. 14:67.20)
- (d) False accounting (R.S. 14:70)
- (e) Issuing worthless checks (R.S. 14:71)
- (f) Bank fraud (R.S. 14:71.1)
- (g) Forgery (R.S. 14:72)
- (h) Contractors; misapplication of payments (R.S. 14:202)
- (i) Malfeasance in office (R.S. 14:134)

The five-year prohibition provided for in this section shall apply only if the crime was committed during the solicitation or execution of a contract or bid awarded pursuant to these provisions. If evidence is submitted substantiating that a false attestation has been made and the project must be readvertised or the contract cancelled, the awarded entity making the false attestation shall be responsible to the public entity for the costs of rebidding, additional costs due to increased costs of bids and any and all delay costs due to the rebid or cancellation of this project.

[The remainder of this page is intentionally left blank.]

Affiant further said:

(1) Entity is registered and participates in a status verification system to verify that all employees in the State of Louisiana are legal citizens of the United States or are legal aliens.

(2) Entity shall continue, during the term of the contract, to utilize a status verification system to verify the legal status of all new employees in the State of Louisiana.

(3) Entity shall require all subcontractors to submit to the Entity a sworn affidavit verifying compliance with statements (1) and (2).

Signature of Affiant

Printed Name of Affiant

SWORN AND SUBSCRIBED TO BEFORE ME
ON THE _____ DAY OF _____, 20__.

Notary Public

Printed Name of Notary

Notary/Bar Roll Number

My commission expires _____.

CORPORATE RESOLUTION

EXCERPT FROM MINUTES OF MEETING OF THE BOARD OF DIRECTORS OF

INCORPORATED.

AT THE MEETING OF DIRECTORS OF _____
INCORPORATED, DULY NOTICED AND HELD ON _____,
A QUORUM BEING THERE PRESENT, ON MOTION DULY MADE AND SECONDED. IT WAS:

RESOLVED. THAT _____, BE AND IS HEREBY
APPOINTED, CONSTITUTED AND DESIGNATED AS AGENT AND ATTORNEY-IN-FACT OF
THE CORPORATION WITH FULL POWER AND AUTHORITY TO ACT ON BEHALF OF THIS
CORPORATION IN ALL NEGOTIATIONS, BIDDING, CONCERNS AND TRANSACTIONS WITH
THE PARISH OF JEFFERSON OR ANY OF ITS AGENCIES, DEPARTMENTS, EMPLOYEES OR
AGENTS, INCLUDING BUT NOT LIMITED TO, THE EXECUTION OF ALL BIDS, PAPERS,
DOCUMENTS, AFFIDAVITS, BONDS, SURETIES, CONTRACTS AND ACTS AND TO RECEIVE
ALL PURCHASE ORDERS AND NOTICES ISSUED PURSUANT TO THE PROVISIONS OF ANY
SUCH BID OR CONTRACT, THIS CORPORATION HEREBY RATIFYING, APPROVING,
CONFIRMING, AND ACCEPTING EACH AND EVERY SUCH ACT PERFORMED BY SAID
AGENT AND ATTORNEY-IN-FACT.

I HEREBY CERTIFY THE FOREGOING TO
BE A TRUE AND CORRECT COPY OF AN
EXCERPT OF THE MINUTES OF THE
ABOVE DATED MEETING OF THE
BOARD OF DIRECTORS OF SAID
CORPORATION, AND THE SAME HAS
NOT BEEN REVOKED OR RESCINDED.

SECRETARY-TREASURER

DATE

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____,
(Name of Contractor)

a _____,
hereinafter (Corporation, Partnership, etc.)

called "Principal", and _____
(Surety)

duly authorized to transact business in the State of Louisiana, hereinafter called "Surety", are held and firmly bound unto Jefferson Parish Council , hereinafter called "Owner", in the amount of

_____ Dollars (\$_____)
in lawful money of United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain Agreement with the Owner, dated the _____ day of _____, 20___, a copy of which is hereto attached and the Agreement along with all Contract Documents are specifically made a part hereof by reference as if fully stated herein, for the construction of:

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said Agreement and Contract Documents during the term thereof, and any extensions thereof which may be granted by the Owner, with or without notice to the Surety, and if he shall satisfy all claims and demands incurred under such Agreement and Contract Documents, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default in connection with the construction of such work, including, but not limited to attorney fees and litigation expenses, and all insurance premiums on said work, whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

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

PROVIDED, FURTHER, that this bond shall insure solely to the benefit of the OWNER and its successors or assigns, and no other person shall have any right of action based hereon.

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

(SEAL)

(Principal)

By:

(Signature)

(Witness to Principal)

(Title)

(Address)

(Address)

(SEAL)

(Surety)

By:

(Signature)

(Witness to Surety)

(Address)

(Address)

NOTE: Date of Bond must not be prior to date of contract.

1. Correct name of Contractor
2. A Corporation, A Partnership, or an Individual
3. Correct Name of Surety
4. Authorization to Sign Must be Attached.

LABOR AND MATERIALS PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____,
(Name of Contractor)

a _____,
(Corporation, Partnership, etc.)

called "Principal, and _____,
(Surety)

fully authorized to transact business in the State of Louisiana, hereinafter called "Surety", are held and firmly bound unto Jefferson Parish Council, hereinafter called "Owner", in the amount of _____ Dollars (\$ _____) in lawful money of United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

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

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

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

PROVIDED, FURTHER, it is expressly understood and agreed that this Bond is given in accordance with and limited to claims and claimants expressly covered by LSA-R.S. 38:241 to 2248 inclusive. Final settlement between Owner and the Contractor shall not abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in three counterparts, each of which shall be deemed an original, this _____ day of _____, 20 ____.

(SEAL)

_____	_____
(Witness to Principal)	(Principal)
_____	By: _____
(Address)	(Signature)
_____	_____
(Address)	(Title)
_____	_____
(Address)	(Address)

(SEAL)

_____	_____
(Witness to Surety)	(Surety)
_____	By: _____
(Address)	(Signature)
_____	_____
(Address)	(Title)
_____	_____
(Address)	(Address)

- NOTE: DATE OF BOND must not be prior to date of Contract:
1. Correct Name of Contractor.
 2. A Corporation, A Partnership, or an Individual.
 3. Correct Name of Surety.
 4. Authorization to Sign Must be Attached.

RESOLUTION NO. 113646
**GENERAL CONDITIONS AND AGREEMENT FOR THE PURCHASES OF MATERIALS,
SUPPLIES OR SERVICES AND PUBLIC WORKS PROJECTS**

I. INSTRUCTIONS TO BIDDERS

SECTION 1. BID FORM

A. General

(1) Sealed bids will be received in the office of the Department of Purchasing, 200 Derbigny Street, Suite 4400, General Government Building, Gretna, Louisiana 70053, until the date and hour specified on Page 1 of the bid proposal, at which time they will be publicly opened. LATE BIDS WILL NOT BE ACCEPTED.

(2) All bids submitted are subject to these instructions and general conditions and any special conditions and specifications contained herein, all of which are made part of this bid proposal.

(3) Jefferson Parish reserves the right to reject any and all bids in whole or in part and to waive any and all informalities, to the extent permitted by law, in the best interest of Jefferson Parish.

(4) ONLY BIDS WRITTEN IN INK OR TYPE WRITTEN AND PROPERLY SIGNED BY A MEMBER OF THE FIRM OR AUTHORIZED REPRESENTATIVE, WILL BE ACCEPTED. PENCIL AND/OR PHOTOSTATIC FIGURES OR SIGNATURES WILL DISQUALIFY BID. HOWEVER, ELECTRONIC SIGNATURES AS DEFINED IN LSA – R.S. 9:2602(8) ARE ACCEPTABLE.

(5) For submission of bids, the only form used shall be the bid form provided by the Parish. Necessary copies of this form will be furnished for Bidding.

(a) All papers bound with or attached to the Bid Form are considered a part thereof and must not be altered.

(b) The plans, specifications, and other documents designated in the bid form will be considered a part of the bid whether attached or not.

(c) Illegibility or ambiguity in any bid may constitute justification for rejection of the bid.

(d) Resolution No. 113646 will be considered a part of the bid whether attached or not. A copy may be obtained from the Office of the Council Clerk, 200 Derbigny Street, Suite 6700, General Government Building, Gretna, Louisiana 70053.

(6) The purpose and intention of this invitation to bid is to afford all suppliers/contractors an equal opportunity to bid on construction, maintenance, repair, operating, services, supplies and/or equipment listed in this bid proposal. Jefferson Parish will accept one bid only from each vendor. Items bid on must meet or exceed specifications.

(7) USE OF BRAND NAMES AND STOCK NUMBERS. Where brand names, make, manufacturer or stock numbers are specified, it is for the purpose of establishing certain minimum standards of quality. Bids may be submitted for products of equal quality, style, type

and character provided brand names and stock numbers are specified. Complete product data may be required prior to award.

(8) The Parish, its engineers, architects or anyone distributing plans and specifications for Parish public works projects, equal to or over the contract limit as defined in LSA-R.S. 38:2212A(1)(d), shall furnish all prime bidders who request bid documents and who are properly licensed by the Louisiana State Licensing Board for Contractors with at least one set of complete bid documents. A deposit or fee may be charged on the documents as authorized by LSA-R.S. 38:2212A(1)(e).

(a) Plans and specifications shall be available to bidders on the day of the first advertisement and shall be available until twenty-four (24) hours before the bid opening date, LSA-R.S. 38:2212 A(3)(c). Bid proposal documents will not be issued within the twenty-four- hour period prior to bid opening.

(b) Addenda may be issued, as authorized by LSA-R.S. 38:2212C, by any of the following means:

(1) Certified mail, return receipt requested, sent to the address given by the bidder upon obtaining the bidding documents, the transmission of which shall be conclusive evidence of receipt of such notice by the bidder to whom it is addressed;

(2) First-class mail with a United States Postal Service Certificate of Mailing, sent to the address given by the bidder upon obtaining the bidding documents, the transmission of which shall be conclusive evidence of receipt of such notice by the bidder to whom it is addressed;

(3) Express mail sent to the address given by the bidder upon obtaining the bidding documents. Delivery of the addenda by express mail shall be conclusive evidence of receipt of the addenda by the bidder to whom it is addressed;

(4) Facsimile or telecopier transmission sent to the telecopier number given by the bidder upon obtaining the bidding documents, the transmission of which shall be conclusive evidence of receipt of such notice by the bidder to whom it is transmitted; or

(5) Electronic transmission sent to the e-mail address given by the bidder upon obtaining the bidding documents. Transmission of the addenda by e-mail shall be conclusive evidence of receipt of the addenda by the bidder to whom it was sent.

(6) Hand delivery to the address given by the bidder upon obtaining the bidding documents or if the bidder prefers to receive delivery at the Department of Purchasing, 200 Derbigny Street, Suite 4400, General Government Building.

(9) Each bidder shall comply with all rules and regulations of the Louisiana State Licensing Board for Contractors in accordance with existing state laws.

(10) Each bid must be submitted in a sealed envelope bearing on the outside: the name of the Bidder, his address, and the name of the project for which the bid is submitted; and, if the bid is in an amount exceeding the threshold levels established in the State Contractor's

Licensing Law, LSA-R.S. 37:2150, et seq., the state license number of the Bidder, unless otherwise excepted by law.

(11) Further, the Parish of Jefferson reserves the right to cancel this contract at anytime and for any reason by issuing a thirty (30) day written notice to contractor.

B. Price

(1) The price quoted for the work shall be stated in figures. In the event there is a difference in unit prices and totals the unit prices shall prevail. In the event there is a difference in unit prices, written unit prices shall prevail over numerical unit prices.

(2)The price quoted in Proposals to supply labor and materials to Jefferson Parish for a public work project shall include all costs necessary for the complete performance of the work in full conformity with the conditions of the Contract Documents, and shall include all licenses and permit fees and all applicable Federal, State, County or Parish, Municipal, or other taxes due by the contractor. If the Contractor is to act as the Parish's Purchasing Agent for tax exempt purposes, the Parish shall specifically state so within the bid specification.

(3) The quantities listed on the bid form are prepared for comparison of bids and may be approximate. Payment to the contractor will be made in accordance with measurement and payment requirements for bid items and other requirements of the project specifications. Bid item quantities may be increased, decreased, or omitted as provided in the specifications.

(4) SALES TAXES FOR PURCHASES. Jefferson Parish is exempt from paying sales taxes under LSA-R.S. 47:301(8)(c). All prices for purchases of supplies and materials by Jefferson Parish shall be quoted in the unit of measure specified and unless otherwise specified, shall be exclusive of State and Parish taxes. All quotations shall be based on F.O.B. Agency warehouse, or job site, anywhere within Jefferson Parish, as designated by the Purchasing Department. The provisions of this section B.(4) do not apply to public work projects.

(5) DISCOUNTS. Unless otherwise specified, our regular terms are 2%, 10 days from date of delivery. Time shall be counted from date of delivery at destination, or from date correct invoice is received from contractor, if later date is later than date of delivery.

C. Signing

The name and post office address of the bidder must be legibly shown. The Proposal shall be properly signed with ink by the Bidder, unless submitted electronically. If a firm, partnership, or other legal entity is submitting the bid, and if someone other than a corporate officer signs for the Bidder/Contractor, a copy of a corporate resolution or other signature authorization shall be required for submission of the bid. Failure to include a copy of the appropriate signature authorization, if required, may result in the rejection of the bid unless bidder has complied with LSA- R.S. 38:2212(A)(1)(c) or LSA- R.S. 38:2212(O) .

D. Insurance

Certificate of insurance shall be supplied within ten (10) calendar days after receipt of notice of award of the Contract by the Owner.

E. Bid Guarantee

(1) When required, a Bid Guarantee in the proper amount and in the proper form must accompany the proposal. No bid will be considered unless it is so guaranteed. Cashier's check, certified check or money order must be made payable to the order of the Owner. Cash deposits will not be accepted. The Owner reserves the right to cash or deposit the cashier's

check, certified check or money order.

(2) The amount of the bid guarantee shall be not less than five (5%) percent of the amount of the bid, including any alternates, and at the option of the bidder may be a cashier's check, certified check, money order or a satisfactory bid bond attached to the bid form, unless, a project, funded in whole or in part by State and/or Federal Funds, is governed by State and/or Federal Regulations or Laws which require a bid guarantee in a different amount, in which event the State and/or Federal Regulations or Laws shall take precedence.

(3) Bid Guarantees of the three lowest bidders will be retained by the Owner until the Contract is executed or until final disposition is made of the bids submitted. Bid Guarantees of all other bidders will be returned within ten (10) days after the canvass of bids.

(4) Bids shall remain binding for at least forty-five (45) days after the date set for Bid Opening. In the event the Owner issues the Letter of Award during this period, the bid accepted shall continue to remain binding until the Execution of Contract. Jefferson Parish and the lowest responsible bidder, by mutual written consent, may agree to extend the deadline for award by one or more extensions of thirty (30) calendar days.

(5) The successful bidder, upon his failure or refusal to execute Contract with Owner and deliver performance and payment bonds and any other required submittal within a period of ten (10) calendar days after original date of Owner's Letter of Award, as defined in the General Specifications, shall forfeit to Owner, as liquidated damages for such failure or refusal, the security deposited with his bid.

(6) To the extent permitted by law, the Bond requirements as set forth herein are waived insofar as Community Development housing rehabilitation construction contracts are concerned for single family, owner-occupied dwellings. The Parish Attorney's office will omit the requirements in connection with Community Development housing rehabilitation construction contracts for single family, owner-occupied dwellings.

(7) **Maintenance, Repair and Supply Contracts Only** - In the event that the successful bidder cannot furnish a specific item or material and labor in the required time, Jefferson Parish may purchase on an emergency basis from the next lowest bidder, or available source, until such time the successful bidder has notified Jefferson Parish in writing that his stock or labor capability has been replenished. The difference in price will be charged against the successful bidder of this contract, and evidence of purchases and prices will be provided. **Contractor by bidding this proposal acknowledges and agrees to these provisions.**

F. Licensing Requirements (Ordinance No. 13574 as Amended)

(1) No person shall undertake, attempt, or submit a bid or offer to construct, supervise, superintend, oversee, direct, or in any manner assume charge of the construction, alteration, repair, improvement, movement, demolition, putting up, tearing down, or furnishing labor, material or equipment and installing same for any building, highway, road, railroad, sewer, grading, excavation, pipeline or public utility structure, project, development, improvement or any other undertaking within the jurisdiction of this parish where the cost of same exceeds the threshold levels established in the State Contractor's Licensing Law, LSA-R.S. 37:2150, et seq., unless such person shall first have acquired a valid contractor's license from the state when required by LSA- R.S. 37:2150-37:2163.

(2) These provisions shall not apply to a residence to be occupied by not more than four families, provided however, that the definition shall include a four-family residence when the

cost of construction exceeds \$75,000.00; provided, further, that the definition shall not include architects duly licensed by the State Board of Architects and Examiners or engineers duly licensed by the State Board of Registration for Professional Engineers and Land Surveyors whose only financial interest in the project shall be the professional fee for preparing plans and specifications, supervision, and normal and ordinary engineering services (that is, usual architectural and/or engineering services), and that they shall not be liable for any other fees, licenses, or assessments than those provided by the laws of the State of Louisiana, or an architect or engineer who receives an additional fee for employment and direction of labor, purchase of materials, and sub-letting parts of the undertaking.

(3) There are excepted from the provisions of this article any person acting as a contractor, submitting bids or proposals to construct highways, highway bridges, overpasses or any other project incidental to the construction of highways or any other project, building, structure or public work when such projects are federal aid projects, are financed with federal funds and the provisions of this article shall not apply to any public utility subject to regulation by the state public service commission, nor to any work performed by or for such public utility in furnishing its authorized service; provided, however, that any successful bidder on any such project, or projects, shall comply with provisions of LSA- R.S. 37:2150-2163.

(4) No building permit shall be issued to any owner or contractor for work within the parish on any project which requires a licensed contractor for all or any part of such work, within the definition and requirements of this article and the provisions of LSA- R.S. 37:2150-2163 unless and until the permit applicant furnishes to the permit official of the parish, the license number of all such contractors required to be licensed hereunder.

SECTION 2. WITHDRAWAL OR REVISION OF BIDS

A. A bid may be withdrawn at any time prior to the scheduled closing time for receipt of bids, provided a request in writing, executed by the Bidder or his duly authorized representative, is filed with the Owner prior to that time. When such a request is received, the bid will be returned to the Bidder unopened.

B. Written communications, over the signature of the Bidder, to modify bids will be accepted and the bids corrected in accordance therewith if received by the Owner prior to the scheduled closing time for receipt of bids. Oral, telephonic, telegraphic modifications will not be considered.

C. No bid can be modified or corrected after the hour set for opening such bids.

D. No bid can be withdrawn after the hour set for opening such bid except as provided in LSA-R.S. 38:2214C, i.e. bids containing patently obvious, unintentional, and substantial mechanical, clerical, or mathematical errors, or errors of unintentional omission of a substantial quantity of work, labor, material, or services made directly in the compilation of the bid, may be withdrawn by the contractor if clear and convincing sworn, written evidence of such errors is furnished to the Department of Purchasing, 200 Derbigny Street, Suite 4400, General Government Building, Gretna, Louisiana 70053 within forty-eight (48) hours of the bid opening excluding Saturdays, Sundays, and legal holidays. Such errors must be clearly shown by objective evidence drawn from inspection of the original work papers, documents, or material used in the preparation of the bid sought to be withdrawn. If the Parish of Jefferson determines that the error is a patently obvious mechanical, clerical, or mathematical error, or unintentional omission of a substantial quantity of work, labor, material, or service, as opposed to a judgment error, and that the bid was submitted in good faith it shall accept the withdrawal and return the

bid security to the contractor. A contractor who attempts to withdraw a bid under these provisions shall not be allowed to resubmit a bid on the project (LSA-R.S. 38:2214D).

SECTION 3. INTERPRETATION OF CONTRACT DOCUMENTS

A. No oral interpretation will be made to any Bidder as to the meaning of the drawings, specifications, or contract documents. Every request for such interpretation shall be made in writing and addressed and forwarded to the Engineer, Architect or person distributing plans and specifications. No inquiry received within five (5) days prior to the day fixed for opening of the bids will be given consideration. Every interpretation made to the Bidder shall be in the form of an addendum to the Specifications and shall be issued as set forth above in Section 1A(8)(b). All such addenda shall become a part of the Contract Documents. Failure of any Bidder to receive any such interpretation shall not relieve any Bidder from any obligation under his Bid as submitted without modification.

B. The specifications and plans are complementary of each other and all work called for or reasonably implied by either shall be performed as if called for by both. In case of conflict between the requirements of the specifications and plans, the specifications shall take precedence. Figured dimensions shall take precedence over scale dimensions, and larger scale details shall take precedence over smaller scale details in the general work drawings.

SECTION 4. REJECTION OF BIDS

A. The Owner reserves the right to reject any or all Bids, to waive informalities, and to make award as it may elect, to the maximum extent which may be allowed under state law. Incomplete, informal, or unbalanced Bids may be rejected. Reasonable grounds for belief that any one Bidder is concerned, directly or indirectly, with more than one Bid will cause rejections of all Bids wherein such Bidder is concerned. If required, a Bidder shall furnish satisfactory evidence of his competence and ability to perform the work stipulated in his Proposal. If satisfactory evidence of competence to perform work is not furnished, the bid shall be rejected.

B. Additionally, bids may be considered irregular and be rejected for any of the following, but is not limited to the following circumstances;

(1) If the bid form is on a form other than that furnished by the Parish or if the form is altered.

(2) If **affidavits** included in bid form and/or required by law are not returned with the bid ,or ten (10) days after opening, as the requirement may be, or are not properly executed and notarized.

(3) If there are unauthorized additions, conditional or alternate bids or irregularities which alter the general terms and conditions, the plans or specifications, or make the bid incomplete, indefinite, or ambiguous as to its meaning.

(4) If the bidder adds provisions reserving the right to accept or reject the award or to enter into the contract pursuant to the award.

(5) If an owner or a principal officer of the bidding firm is an owner or a principal officer of a firm which has been declared by the Parish to be ineligible to bid.

(6) If the proposed bid guaranty does not meet the requirements of Section 1E Bid Guaranty.

(7) If more than one proposal for the same work, services, materials or supplies is received from an individual, partner, firm, corporation, joint venture, other legal entity, or combination thereof under the same or a different name.

(8) The bid is not properly signed or the authority of the signed person submitting the bid is deemed insufficient or unacceptable.

(9) If the bidder does not possess the proper license(s) required as noted in the specifications.

(10) Any other reasons for rejection set forth by State or Parish laws, ordinances or resolutions.

C. A bid which is not responsive to, or does not meet bid specifications, will be rejected as being non-responsive, but that bidder will not be disqualified from future Parish bids, nor will that bidder be given a hearing pursuant to Section 9.2..

SECTION 5. FAMILIARITY WITH LAWS AND ORDINANCES

A. Bidders shall familiarize themselves with and shall comply with all applicable Federal and State Laws, parish/municipal ordinances, resolutions, and the rules and regulations of all authorities having jurisdiction over construction of the project, which may directly or indirectly affect the work or its prosecution.

B. These laws and/or ordinances will be deemed to be included in the contract, the same as though herein written in full.

C. In case of conflict between the requirements of these specifications and any State and/or Federal Regulations or Laws, the State and/or Federal Regulations or Laws shall take precedence in all cases in which State and/or Federal Funding of the contract, in whole or in part, depends upon compliance with said State and/or Federal Regulations or Laws.

SECTION 6. EXAMINATION OF SITE, DRAWINGS, ETC.

A. Prior to submitting a bid each Bidder shall visit the site of the proposed work and fully acquaint himself with all surface and subsurface conditions as they may exist so that he may fully understand the facilities, difficulties, and restrictions attending the execution of the Work under this Contract. Bidders shall also thoroughly examine and be familiar with Drawings, Specifications, and Contract Documents. The failure or omission of any Bidder to receive or examine any form, instrument, drawing, or document or to visit the site and acquaint himself with conditions there existing, shall in no way relieve any Bidder from any obligation with respect to his Bid and the responsibility in the premises rests with him. Submission of a bid shall be considered prima facie evidence that the bidder has made such examination and is satisfied as to the conditions to be encountered in performing the work and as to requirements of the plans, project specifications, Resolution No. 113646, and contract forms.

B. Any pre-bid test and boring data in connection with subsurface conditions which have been completed by the Parish or its engineers and furnished to the bidder shall not be considered as fully representative of subsurface conditions existing throughout the area tested nor shall they in any way be binding upon the Parish, it being understood that said data is furnished the bidder for his convenience only and the bidder shall be solely responsible for conducting his own boring explorations he deems necessary in preparing his bid. Any prospective bidder wishing to conduct boring explorations on Parish property must obtain written permission from Jefferson Parish prior to such explorations.

C. No claims shall be made against the Parish for additional compensation due to unforeseen subsurface conditions arising during progress of the work and which might be in variance with the Parish's pre-bid boring data.

SECTION 7. COMMUNIST COUNTRY PROHIBITIONS

In awarding contracts for materials and supplies, Jefferson Parish shall reject the lowest bid if received from a bidder domiciled in a Communist country, or if the materials or supplies are manufactured in a Communist country, including but not limited to the China, North Korea and Vietnam and to award the contract to the next lowest bidder. This Section shall not apply to any country having established trade relations agreements or approvals from the government of the United States. (LSA-R.S. 38:2212.3)

SECTION 8. AWARD OF CONTRACT

A. The award of the Contract, if it be awarded, will be by the Owner to the lowest responsible Bidder whose Proposal shall have complied with all the requirements necessary to render it formal. The successful Bidder will be notified by telegram or letter mailed to the address shown on the Proposal that his bid has been accepted and that he has been awarded the Contract. No contract shall be executed with any Contractor until their certificates of insurance, performance bonds, labor and materials payment bonds, or any other bonds required are made satisfactory to the Owner.

B. Jefferson Parish reserves the right to award contracts or place orders on a lump sum or individual item basis, or such combination as shall, in its judgment, be in the best interest of Jefferson Parish. Every contract or order shall be awarded to the LOWEST RESPONSIBLE BIDDER, taking into consideration the CONFORMITY WITH THE SPECIFICATIONS, and the DELIVERY AND/OR COMPLETION DATE.

C. Preference is given, to bidders in accordance with LSA-R.S. 38:2251, to materials, supplies, and provisions, produced, manufactured or grown in Louisiana, quality being equal to articles offered by competitors outside the State of Louisiana.

SECTION 9. DISQUALIFICATION OF BIDDERS

1. The causes for disqualification from consideration for award of a contract with Jefferson Parish are as follows (Jefferson Parish Code of Ordinances, Section 2-914):

A. Conviction for commission of a criminal offense as an incident to obtaining or attempting to obtain a public or private contract or subcontract, or in the performance of such contract or subcontract;

B. Conviction under state or federal statutes of embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, or any other offense indicating a lack of business integrity or business honesty which currently, seriously, and directly affects responsibility as a parish contractor;

C. Conviction under state or federal antitrust statutes arising out of the submission of bids or proposals;

D. Violation of contract provisions, as set forth below, of a character which is regarded by the Chief Buyer for Jefferson Parish to be serious as to justify disqualification:

(1) Deliberate failure without good cause to perform in accordance with the specifications or within the time limit provided in the contract; or

(2) A recent record of failure to perform or of unsatisfactory performance in accordance with the terms of one or more contracts; provided that failure to perform or unsatisfactory performance caused by acts beyond the control of the contractor shall not be considered to be a basis for disqualification;

E. Any other cause the Chief Buyer determines to be so serious and compelling as to affect responsibility as a parish contractor, including debarment by another governmental entity for any cause;

F. Violation of the State Code of Ethics or the ethical standards set forth in the Jefferson Parish Code of Ordinances;

G. Failure to secure and/or maintain necessary licenses and/or permits;

H. Failure to comply with the Jefferson Parish Code of Ordinances and/or the Jefferson Parish Comprehensive Zoning Ordinance; or Failure to comply with bid specifications and or failure to be a responsible bidder.

2. The procedures for disqualification from consideration for award of a contract with Jefferson Parish are as follows:

A. Step 1 - Prior to making a recommendation to the Council regarding a bid acceptance, the Department head shall send a Notice of Disqualification to the disqualified low bidder. This letter shall contain the reasons for disqualification and shall be sent Certified Mail with Return Receipt Requested. At the same time, a copy of said letter shall be sent to the Bid Disqualification Review Committee Chairman and the Parish Attorney's Office. When the postal receipt is returned to the Department head, he/she then proceeds with step 2 below.

B. Step 2- Prepare the normal recommendation packet to the Council, with the following exceptions:

(1) The letter to the Council Chairman shall indicate the low bidder was disqualified,

(2) The letter to the Council Chairman shall include a copy of the Notice of Disqualification together with the postal receipt, indicating delivery to the low bidder, and

(3) Attach a resolution accepting the lowest responsible bidder. The acceptance, however, shall be contingent upon the disqualification being affirmed or dismissed by the Bid Disqualification Review Committee.

C. Step 3 - If a bid disqualification review hearing is requested by a disqualified bidder, the Bid Disqualification Review Committee Chairman shall be notified and he will schedule the hearing.

D. The above procedure will allow the bid disqualification review process to take place simultaneously with the recommendation packet being routed for Administration approval and Council action.

SECTION 10. EXECUTION OF CONTRACT

The successful Bidder shall execute the Contract with the Owner in the form of the Contract included in the Specifications, a copy of which is annexed hereto, in such number of counterparts as the Owner may request within twelve (12) days after receipt of notice of award of the Contract by the Owner. One copy of the executed contract with all documents forming a part thereof shall be filed at the expense of the Contractor, with the Recorder of Mortgages in Jefferson Parish.

SECTION 11. MISCELLANEOUS

A. If your company is unable to bid on this project, please state the reason on the bid form and return it to the Department of Purchasing, 200 Derbigny Street, Suite 4400, General Government Building, Gretna, Louisiana 70053 before bid opening date. Failure to comply may result in the removal of your company from the Parish's vendor list.

B. Bids will be posted on the bulletin board inside the Department of Purchasing, 200 Derbigny Street, Suite 4400, General Government Building, Gretna, Louisiana 70053 for a period of five (5) working days after bid opening date. Advertised bids will be tabulated and a copy thereof forwarded to each responding bidder.

C. The successful bidder may be required to furnish a statement of the origin, composition, and manufacture of materials to be used in construction of the work together with samples, which samples may be subjected to testing to determine their quality and fitness for the work, as specified.

D. Bidders are not to exclude from participation in, deny the benefits of, or subject to discrimination under any program or activity, any person in the United States on the grounds of race, color, national origin, sex or religion except that any exemption from such prohibition against discrimination on the basis of religion as provided in the Civil Rights Acts of 1964, or Title VI and VII of the Act of April 11, 1968 shall also apply, as amended; nor discriminate on the basis of age under the Age Discrimination Act of 1975, as amended; nor with respect to an otherwise qualified handicapped individual as provided in Section 504 of the Rehabilitation Act of 1973, as amended. This assurance includes compliance with the administrative requirements of the Revenue Sharing final handicapped discrimination provisions contained in Section 51.55 (c), (d), (e), and (k) (5) of the Regulations.

**GENERAL CONDITIONS AND AGREEMENT FOR THE PURCHASES OF MATERIALS,
SUPPLIES OR SERVICES AND PUBLIC WORKS PROJECTS**

GENERAL CONDITIONS

SECTION 1. EXECUTION OF CONTRACT

The successful bidder shall execute the Contract with the Owner in the form of the Agreement included in the Bid Documents, in such number of counterparts as the Owner may request within twelve (12) days after receipt of Notice of Award of the Contract by the Owner unless the Owner and the Contractor otherwise mutually agree. One copy of the executed Contract for any Public Works project with all documents forming a part thereof shall be filed at the expense of the Contractor, with the Recorder of Mortgages in Jefferson Parish immediately, but in any event before Contractor commences the Work, and evidence of such filing shall be provided to Owner.

SECTION 2. PERFORMANCE AND PAYMENT BONDS

A. 1. In order to insure the faithful performance of each and every condition, stipulation, and requirement of the Contract and to indemnify and save harmless the Owner from any and all damages, either directly or indirectly, arising out of any failure to perform same, the successful bidder to whom the Contract is awarded shall furnish a surety Bond in an amount at least equal to one hundred (100%) percent of the Contract Price, unless otherwise specified. The successful bidder to whom the Contract is awarded shall also furnish a labor and materials payment Bond in an amount at least equal to one hundred percent (100%) of the Contract Price, unless otherwise specified. The Contract shall not be in force or binding upon the Owner until such satisfactory Bonds have been provided. The Sureties shall be selected by the Contractor, subject to the approval of the Owner, and the cost of the Bonds shall be paid for by the Contractor, unless otherwise stipulated in the Supplementary Provisions.

2. The Owner may, in its discretion, accept alternative security, modify or waive the bonding requirement set forth in paragraph A.1 above, pursuant to the requirements set forth in the Louisiana public contract law (LSA-R.S. 38:2181 *et seq.*). If the bond is on an annual coverage basis, renewal of each succeeding year shall be submitted to the Parish thirty (30) days prior to the termination date of the existing bond.

B. Any surety Bond written for a Jefferson Parish public works project or any other Jefferson Parish Contract requiring a bond shall be written by a surety or insurance company currently on the U.S. Department of Treasury Financial Management Service list of approved bonding companies which is published annually in the Federal Register, or by a Louisiana domiciled insurance company with at least an A rating in the latest printing of the A.M. Best's Key Rating Guide to write individual Bonds up to ten percent of policyholder's surplus as shown in the A.M. Best's Key Rating Guide or by a surety company that complies with the requirements of LSA-R.S. 38:2219.

C. No Surety Company will be accepted as bondsman which does not have a permanent agent or representative in the State of Louisiana upon whom notices referred to in these General Conditions may be served. Service of said notice on said agent or representative in the State of Louisiana shall be equal to service of notice on the president of the Surety Company, or such other officer as may be concerned.

D. Should the Contractor's surety, even though approved and accepted by the Owner, subsequently remove its agency or representative from the State of Louisiana or terminate its residency or license in this State or become insolvent, bankrupt, or otherwise fail, the Contractor

shall furnish a new Bond by another company approved by the Owner, at no additional cost to the Owner. The new Bond shall be executed under the same terms and conditions as the original Bond.

E. To the extent permitted by law, the Bond requirements as set forth herein are waived insofar as Community Development housing rehabilitation construction contracts are concerned for single family, owner-occupied dwellings. The Parish Attorney's office will omit the requirements of compliance with the Bond requirements in connection with Community Development housing rehabilitation construction contracts for single family, owner-occupied dwellings.

SECTION 3. SCOPE OF THE BOND AND OBLIGATION OF THE BONDSMAN

A. The Contractor's bondsman shall obligate himself to all the terms and covenants of the Contract Documents covering the Work to be executed hereunder including, but not limited to, the obligations for actual damages and liquidated damages in accordance with the provisions in the Agreement and these General Conditions regarding delay in completion of the Work within the Contract Times. The Owner reserves the right to order extra Work or make changes by altering, adding to, or deducting from the Work under the conditions and in the manner hereinbefore described without notice to the Contractor's surety and without in any manner affecting the liability of the bondsman or releasing him from any of his obligations hereunder.

B. The Bond shall also secure for the Owner the faithful performance of the Contract in strict accordance with these General Conditions, the Drawings and Specifications. It shall protect the Owner against all lien laws of the State of Louisiana and shall provide for payment of reasonable attorney's fees for enforcement of the Contract and institution of concursus proceedings, if such proceedings become necessary. Likewise, it shall provide that if the Design Professional is put to labor or expense by enforcement of the Contract and institution of concursus proceedings or through delinquency or insolvency of the Contractor, they shall be equitably paid for such extra expense and services involved.

C. The surety of the Contractor shall be and does hereby declare and acknowledge himself by acceptance to be bound to the Owner as guarantor, jointly and in solido with the Contractor, for fulfillment of the terms of the foregoing conditions.

SECTION 4. ROYALTIES AND PATENTS

The Contractor shall indemnify and save harmless the Owner from any and all suits, costs, penalties, or claims for infringement by reason of use or installation of any patented design, device, material, or process, or any trademark or copyright in connection with the Work agreed to be performed under the Contract, and shall indemnify and save harmless the Owner for any costs, expenses, and damages which it may be obliged to pay by reason of any such infringement at any time during the prosecution or after completion of the Work.

SECTION 5. PREVAILING WAGES

Every contract for construction, alteration, repair, maintenance, or other public works project, which is financed in whole or in part with federal or state funds, shall contain appropriate provisions for the payment of prevailing wages to the various categories of workmen, mechanics, and/or laborers in accordance with any and all applicable federal or state statutes, rules, or regulations regarding prevailing wages.

SECTION 6. SUBCONTRACTS

A. The Contractor shall not award any Work to any Subcontractor without the prior written approval of the Owner, which approval will not be given until the Contractor submits to the Owner a written statement concerning the proposed award to the Subcontractor, which statement shall contain such information as the Owner may require. Such consent shall not be withheld unless a legal ground exists, such as, but not limited to, a subcontractor who has been disqualified from Parish projects.

B. If such consent is given, the Contractor will be permitted to sublet a portion of the Work, but shall perform with his own organization Work amounting to at least 50 percent of the total Contract cost. Any items designated in the Contract as "Specialty Items" may be performed by subcontract and the costs of such may be deducted from the total cost before computing the amount of Work required to be performed by the Contractor with his own organization.

C. If the Contractor shall sublet any part of the Contract, the Contractor shall be as fully responsible to the Owner for the acts and omissions of his Subcontractor, and of any persons either directly or indirectly employed by his Subcontractor, as he is for the acts and omissions of persons directly employed by himself.

D. Except as provided by law, this provision requiring at least 50 percent of the Work or services to be performed by the Contractor may be waived in whole or in part on Building Construction contracts by resolution, and the Chairman of the Council is authorized to use his discretion in regard to waiving this requirement. Additionally, except as otherwise provided by law, the Parish Attorney's Office is authorized to omit from Building Construction contracts in whole or in part the provision requiring at least 50 percent of the Work or services to be performed by the Contractor. The determination to waive the requirement in whole or in part that at least 50 percent of the Work or services to be performed by the Contractor must be set forth in the bid specifications or addenda.

SECTION 7. SUBCONTRACTORS

A. If the Supplementary Conditions or the Bid Instructions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with these requirements, Owner's written acceptance of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Revocation must be based on a legal ground, such as, but not limited to a subcontractor who has been disqualified from Parish projects. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Design Professional to reject defective Work. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Design professional and any such Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of Owner or Design Professional to pay or to see to the payment of any monies due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

B. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Design Professional.

C. An approved Subcontractor shall not subcontract any portion of his authorized Work. However, except as provided by law, this provision may be waived in whole or in part by resolution, and the Chairman of the Council is authorized to use his discretion in regard to waiving this requirement.

SECTION 8. INTENT OF DRAWINGS AND SPECIFICATIONS

The Work to be done under the Contract shall consist of the complete construction of each and every unit described in the Drawings, these General Conditions, the Construction Specifications, the Supplementary Conditions, the Contract, and the Notice to Proceed, together with all authorized alterations. The Contractor shall furnish, unless definitely and expressly provided to the contrary in the Specifications, the Supplementary Conditions, or the Drawings, all materials, implements, machinery, equipment, tools, supplies, transportation, and labor necessary to the prosecution and completion of the Work. Owner makes no warranties, express or implied, with respect to the fitness of the Drawings or Specifications prepared by the Design Professional, and Contractor waives any claims against the Owner arising out of any implied or express warranties of the fitness of the Drawings and Specifications for their intended purpose.

SECTION 9. ERRORS AND DISCREPANCIES

Should any discrepancies exist between the Drawings and the Specifications, or any part of either or should any parts of the Specifications or of the Contract Documents be ambiguous or doubtful, the Design Professional shall decide as to the true intent and meaning. Any discrepancies found between the Drawings and Specifications and the Site conditions or any errors or omissions in the Drawings or Specifications shall be immediately reported to the Design Professional, who shall promptly provide an interpretation or clarification of such error or omission in writing. Any Work done by the Contractor after his discovery of such discrepancies, errors, or omissions shall be done at the Contractor's risk.

SECTION 10. COPIES OF DRAWINGS FURNISHED

Unless otherwise provided in the Contract Documents, the Design Professional will furnish to the Contractor, free of charge, not to exceed six (6) copies of all drawings and specifications for the execution of the Work. The Drawings and Specifications are the property of the Design Professional and are to be returned to him when they have served the purpose for which they are intended. The Contractor shall keep one copy of all Drawings and Specifications, including revisions, Addenda, details, Shop Drawings, etc., on the Work in good order available to the Design Professional or his representative.

SECTION 11. SHOP DRAWINGS

A. Contractor shall submit Shop Drawings to Design Professional for review and approval in accordance with a schedule of Shop Drawings and Sample submittals acceptable to Design Professional and agreed upon before the submission of the first Application for Payment. All submittals will be identified as Design Professional may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Design Professional the services, materials, and equipment

Contractor proposes to provide and to enable Design Professional to review the information for the limited purposes required by paragraph E.

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

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

D. Submittal Procedures

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

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

b. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the Work;

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

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

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

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

E. Design Professional's Review

1. Design Professional will timely review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals acceptable to Design Professional. Design Professional's review and approval will be only to determine if the items covered by the submittals will, after installation or

incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

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

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

F. Resubmittal Procedures

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

G. The Contract price shall include the cost of furnishing all working or Shop Drawings, and the Contractor will be allowed no extra compensation for such drawings.

SECTION 12. RECORD AND AS-BUILT DRAWINGS

The Contractor shall keep an accurate record, in a manner approved by the Design Professional, of all changes in the Contract Documents during construction. In Work concerning underground utilities, the Contractor shall keep an accurate record in a manner approved by the Design Professional of all valves, fittings, etc. Before the Work is accepted by the Owner, and said acceptance is recorded, the Contractor shall furnish the Design Professional a copy of this record.

SECTION 13. PROSECUTION AND PROGRESS

A. The Contractor shall conduct the Work in such a manner and with sufficient materials, equipment, and labor as is considered necessary to insure its completion within the time limit specified.

B. Should the Contractor fail to start the Work within the time limit specified herein or at any time fail to provide a sufficiency of skilled workmen, materials, and well maintained and functioning equipment, or should the Design Professional at any time become convinced that the Work will not be completed within the time specified, or should the Contractor become bankrupt or insolvent, or fail to remedy or correct defects or deficiencies within reasonable time, the Contractor shall be deemed to have violated the provisions of the Contract, and the Owner may then proceed to terminate the Contract as herein elsewhere provided.

C. The Contract Times will commence to run on the day indicated in the Notice to Proceed. The Owner shall issue a Notice to Proceed in accordance with LSA- R.S. 38:2215. The Contractor is to commence Work under the Contract within ten (10) days from the date the Notice to Proceed is issued by the Owner. In no event will Owner have any obligations or duties to Contractor under the Agreement until the Notice to Proceed is given to Contractor.

D. The grades, elevations, dimensions, locations, and field measurements or any Drawings or Specifications issued by the Design Professional, or the Work installed by other contractors, are not guaranteed by the Design Professional or the Owner. Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify the accuracy of all grades, elevations, dimensions, locations, and field measurements. In all cases of the interconnection of Work with existing or other Work, Contractor shall verify at the Site all dimensions relating to such existing or other Work. Contractor shall promptly report in writing to Design Professional any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Design Professional before proceeding with any Work affected thereby. Any errors due to the Contractor's failure to verify all such grades, elevations, locations, dimensions, or field measurements shall be promptly rectified by Contractor without any additional costs to Owner or extensions of Contract Times.

E. Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Design Professional for its timely review:

1. a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, indicating any Milestones specified in the Contract Documents;
2. a preliminary schedule of Shop Drawings and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and
3. a preliminary schedule of values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

F. Contractor shall not start any Work at the Site unless and until Contractor has in place and in full force and effect all of the insurance and Bonds which the Contractor is required to obtain by the Agreement, the Contract, or the Supplementary Conditions. Any delay in obtaining confirmation of the existence of the insurance, Bonds, and other security required by the Contract and compliance with the terms of the Contract therefor shall be counted as workdays if the start of Work is delayed beyond the time set forth in paragraph C above. The Contract shall not be in force or binding on Owner until satisfactory Bonds and insurance have been provided in accordance with the Contract Documents.

G. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by the Council as Owner, represented herein by its Council Chairman or his authorized agents; Contractor; Design Professional; and others as appropriate will be held to review for acceptability to Design Professional as provided below the schedules submitted in accordance with paragraph E. Contractor shall have an additional ten days to make corrections and adjustments and to

complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Design Professional.

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

2. Contractor's schedule of Shop Drawings and Sample submittals will be acceptable to Design Professional if it provides a workable arrangement for reviewing and processing the required submittals.

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

SECTION 14. OWNER'S RIGHT TO PROCEED WITH PORTIONS OF THE WORK

Upon failure of the Contractor to comply with any notice given in accordance with the provisions hereof, the Owner shall have the alternative right, instead of assuming charge of the entire Work, to place additional forces, tools, equipment, and materials on parts of the Work. The cost incurred by the Owner in carrying on such parts of the Work shall be payable by the Contractor; such Work shall be deemed to be carried on by the Owner on account of the Contractor; and the Contractor shall be allowed the Contract Price. The Owner may retain the amount of the cost of such Work from any sum or sums due, or to become due the Contractor under the Contract Documents.

SECTION 15. TIME OF COMPLETION

A. The Work covered by the Drawings, Specifications, and Contract Documents must be completed sufficient for substantial completion, as defined in LSA- R.S. 38: 2241.1, within the number of calendar days specified in the Bidding Documents and/or the Contract, commencing from the date specified in the Notice to Proceed.

B. It is hereby understood and mutually agreed, by and between the Contractor and the Owner, that the time of completion is an essential condition of the Contract; and it is further mutually understood and agreed that if the Contractor shall neglect, fail, or refuse to complete the Work within the time specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part of the consideration for the awarding of the Contract, to pay to the Owner the amount specified in the Contract, not as a penalty but as stipulated ("liquidated") damages for such breach of contract, for each and every calendar day that the Contractor shall be in default after the time stipulated in the Contract for completing the Work.

C. The Owner shall have the option of using the working day system in lieu of the calendar day system for time allowed to complete the Project. The working day system will be as defined in the latest edition of the Louisiana Standard Specifications for Roads and Bridges. Any Work necessary to be performed after regular working hours, on Sundays or Legal Holidays, shall be performed without additional expense to the Owner.

D. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, and

Contractor will not permit overtime Work or the performance of Work on Saturday, Sunday, or any legal holiday without the Owner's written consent (which shall not be unreasonably withheld) given after prior written notice to Design Professional.

E. Contractor shall establish a normal work schedule which does not exceed 40 hours per week. Whenever Contractor's Work requires scheduled overtime, Contractor shall reimburse Owner for the extra costs incurred for providing Resident Project Representative services provided the additional costs are above the budgeted amount for the contracted project, and further provided that the specifications or bidding documents include the average hourly rate to be charged for inspections and specify a reasonable budget for such inspections. Overtime shall be scheduled only after Contractor obtains written permission from Owner. For purposes of the foregoing sentence and the Contract, "regular working hours" shall mean between 7:00 a.m. and 6:00 p.m. Emergency Work may be performed without prior permission.

F. Requests to work during other than regular working hours must be submitted to the Design Professional at least 72 hours in advance of the period proposed for such overtime Work and shall set forth the proposed schedule for overtime Work to give the Design Professional ample time to arrange for its personnel to be at the Site. The additional Design Professional charges required to be paid by Contractor as provided above shall be a subsidiary obligation of the Contractor and no extra payment shall be made by Owner on account of such Work by the Design Professional.

SECTION 16. EXTENSION OF TIME

A. The Owner may grant an extension of time to the Contractor for unusual circumstances which are beyond the control of the Contractor and could not reasonably be foreseen by the Contractor prior to bidding. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners, or other contractors performing other work as contemplated by the Contract, fires, floods, epidemics, abnormal weather conditions, or acts of God. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

B. Requests for time extensions must be made in writing to the Design Professional within five (5) days following the event occasioning the delay. The Owner shall be the sole judge of the validity of any claims for extension of time.

C. Apart from extension of time for unavoidable delays and the waiving of any applicable liquidated damages, in no event shall Owner or Design Professional be liable to the Contractor, any Subcontractor, any Supplier, or any other person or organization, or any surety for or any employee or agent of any of them, and no payment or allowance of any kind shall be made to the Contractor as compensation for damages because of hindrance or delay for any cause in the progress of the Work, whether such delay be avoidable or unavoidable. Time limitations required by Owner shall be for the benefit of Owner and contractors under other contracts who have entered into such contracts with Owner in reliance on the time limitations set forth in these Contract Documents. Any claim by Contractor for damages due to delay by another contractor shall be asserted against that contractor. Contractor shall accept the risk of any delays caused by the rate of progress of the Work to be performed under the Contract or other contract.

D. The Contractor shall note that weather conditions shall not be an automatic cause for time extension. The Contract Times specified in the Bidding Documents and Agreement include an allowance as stated in the Bidding Documents for inclement weather. In order to document and claim days lost to inclement weather conditions, the Contractor shall, on a monthly basis submit a report to the Design Professional, stating the time lost to inclement weather, within

seven (7) days to the end of the report period. The Design Professional will review the report for submittal to the Owner within seven days of receipt of the report and make recommendations for either acceptance or rejection of each claimed time period lost to inclement weather. The Owner will then instruct the Design Professional to approve or reject the report. There shall be no additional compensation due the Contractor for inclement weather days allowed hereunder.

The report for lost days due to inclement weather shall account for all days during the reporting period, including weekends and holidays. Claims for lost days on either weekends or holidays will not be considered unless the Contractor can show that the inclement weather affected Work production on the following work day. The reporting periods shall be from the first day of the month through and including the last day of the month. Lost time accounting shall be in one-half day increments. Non-work days shall be defined as days in which the Contractor worked less than four (4) hours due to inclement weather conditions.

Lost time shall be considered only if the weather occurrence is in excess of the normal weather patterns as established by the nearest office of the National Weather Service, U.S. Department of Commerce. When the Contract utilizes critical path method scheduling (C.P.M.), the Design Professional will determine if the days lost due to weather conditions actually affected the critical path activities. If weather conditions did not affect the progress of the critical path activities then no time extension will be granted.

SECTION 17. LIQUIDATED DAMAGES

A. Owner and Contractor recognize and agree that time is of the essence of this Agreement and that the Work must be completed in every respect appropriate within the applicable time limits set forth in the Contract Documents, commencing from the date specified in the Contract Documents. Owner and Contractor further understand and agree that it is difficult at this time to estimate the damage which the delay in completion of the Work would cause the Owner and that, accordingly, if the Contractor shall neglect, fail, or refuse to complete the Work in accordance with the Contract Times specified in the Contract Documents, or any extension thereof granted by the Owner in accordance with the applicable provisions of the Contract Documents then, in addition to the other stipulated damages provided for in paragraph E below, the Contractor agrees, as a part of the consideration for the award of this Contract, that Owner shall be entitled to receive the amount or amounts per day set forth in B below from Contractor, not as a penalty but as stipulated ("liquidated") damages for delay for such breach of contract, such amounts being specifically herein agreed upon in advance as the measure of damages to the Owner on account of such delay in the completion of the Work.

B. The Contractor shall owe Owner liquidated damages in the amount specified in the Agreement for each and every calendar day after the time specified in the Agreement for Substantial Completion of the Work until the Work is determined to be substantially complete in accordance with the Contract Documents. After Substantial Completion, if the Contractor shall neglect, fail, or refuse to complete the Work within the time specified in the Agreement for final completion, or any proper extension thereof granted by the Owner, Contractor shall owe Owner liquidated damages in the amount specified in the Agreement for each and every day after the time specified in the Agreement for final completion until the Work is determined to be finally completed in every respect in accordance with the Contract Documents.

C. The number of calendar days in default shall be calculated exclusive of the day on which the applicable completion time was specified and shall include each and every other calendar day up to and including the day that the Contractor has been determined to satisfy its obligation for the applicable degree of completion under the Contract Documents.

D. Contractor further agrees that the expiration of the Contract Time shall, ipso facto, constitute a putting in default where Contractor has failed to complete the Work in accordance with the applicable Contract Times, and Owner need not formally place the Contractor in default, the Contractor hereby expressly waiving any and all notices of default.

E. In addition to and not in lieu of the liquidated damages provided above, Owner shall also be entitled to recover from Contractor or Contractor's surety additional liquidated damages arising out of the breach of contract for delay in completion of the Work in accordance with the Contract Times for the same amount of time calculated pursuant to paragraphs B and C.

These additional liquidated damages may include, but are not limited to the following, in the amounts and for each of the items identified in the Supplementary Conditions:

- (1) Extended architectural and/or engineering fees \$ 125.00/ per hour ;
- (2) Extended Resident Project Representative fees \$ 75.00/ per hour ;
- (3) Extended construction management fees \$ Not Applicable ;
- (4) Extended Owner's overhead and personnel expenses \$ To Be Determined (based upon current Parish billing rates) ; and
- (5) Owner's other costs directly related to the delay in completion beyond the Contract Times.

F. Contractor agrees and consents that the liquidated and additional liquidated damages may be deducted from progress payments payable to Contractor pursuant to the Contract Documents and that Contractor shall accept the Contract Price, reduced by the aggregate amount of the liquidated and additional liquidated damages so deducted, in full satisfaction of all Work executed under the Contract Documents.

SECTION 18. OTHER CONTRACTS

The Owner may award other contracts for additional work, and the Contractor shall fully cooperate with such other contractors and carefully fit his own Work to that provided under other contracts as may be directed by the Owner. The Contractor shall not commit or permit any act which will interfere with the performance of the work by any other contractors.

SECTION 19. RIGHTS OF VARIOUS INTERESTS

Whenever work being done by the Owner's forces or by other contractors is contiguous to Work covered by the Contract, the respective rights of the various interests involved shall be established by the Owner.

SECTION 20. QUALITY OF MATERIALS

A. Unless otherwise specifically provided for in the Specifications, all workmanship, equipment, materials, and articles incorporated in the Work covered by the Contract are to be new and of the best grade of their respective kinds for the purpose intended. Samples of materials, where furnished under the Contract, shall be submitted for approval to the Design Professional when and as directed or as otherwise provided herein.

B. Whenever a material or article required is specified or shown on the Drawings by using a particular brand, make of material, device, or equipment, such brand, make of material, device, or equipment shall be regarded merely as a standard, any material or article which shall perform adequately the duties imposed by the general design will be considered equal, and satisfactory in accordance with the Laws and Regulations, providing the material or article so proposed is of equal substance and function and that all technical data concerning the proposed

substitution be approved by the Design Professional in accordance with the Laws and Regulations, specifically LSA-R.S.38:2295. The Design Professional shall be the sole judge of quality and suitability.

If a potential bidder wishes to submit for prior approval a particular product other than a product specified in the contract documents, he shall do so no later than seven (7) working days prior to the opening of bids.

SECTION 21. STORAGE OF MATERIALS

Materials shall be stored so as to insure the preservation of their quality and fitness for the Work, and in a manner that leaves the material accessible to inspection. Materials or equipment may not be stored on the Site in a manner such that it will interfere with the continued operation of streets and driveways. Contractor shall also comply with the following specific requirements if the Owner has paid for materials stored offsite:

1. The aggregate cost of materials stored offsite shall not, at any time, without written approval of the Owner exceed the amount identified in the Supplementary Conditions.

2. Title to such materials shall be vested in the Owner, as evidenced by documentation satisfactory in form and substance to the Owner, including, without limitation, recorded financing statements, UCC filings, and UCC searches.

3. With each Application for Payment, the Contractor shall submit to the Owner a written list identifying each location where materials are stored off the Project Site and the value of materials at each location. The Contractor shall procure insurance satisfactory to the Owner for materials stored off the Project Site in an amount not less than the total value thereof.

4. The consent of any surety shall be obtained to the extent required prior to payment for any materials stored off the Project Site.

5. Representatives of the Owner shall have the right to make inspections of the storage areas at any time.

6. Such materials shall be (1) protected from diversion, destruction, theft and damage to the satisfaction of the Owner; (2) specifically marked for use on the project; and (3) segregated from other materials at the storage facility.

SECTION 22. QUANTITIES

Wherever the estimated quantities of Work to be done and materials to be furnished under the Contract are shown in any of the Contract Documents, including the Bidding Documents, they are given for use in comparing bids and the right is especially reserved, except as herein otherwise specifically limited, to increase or diminish them by the Owner to complete the Work contemplated by the Contract. Such increase or diminution shall in no way vitiate the Contract, nor shall any such increase or diminution give cause for claims or liability for damages.

SECTION 23. AUTHORITY OF THE DESIGN PROFESSIONAL AND/OR RESIDENT PROJECT REPRESENTATIVE

A. The Design Professional, or his authorized representative, shall decide any and all questions which may arise as to the quality or acceptability of materials furnished and Work

performed, and as to the manner of performance and rate of progress of the Work, and shall decide all questions which may arise as to the interpretation of the Drawings and Specifications, and all questions as to the acceptable completion of the Project.

B. 1. Except as otherwise provided below, the decision of the Design Professional shall be final and binding on all technical questions concerning the execution of the Work and interpretation of the Drawings and Specifications. In case any question shall arise between the parties hereto relative to said Contract or Specifications, the determination or decision of the Design Professional shall be a condition precedent to the right of the Contractor to receive any money or payment for Work under the Contract affected in any manner or to any extent by such question.

2. Notwithstanding the foregoing, the decision of the Design Professional shall not be final and binding if a written notice of intention to appeal from the Design Professional's written decision is delivered by Owner or Contractor to the other and to the Design Professional within 30 days after the date of such decision, and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction within 60 days after the date of such decision (unless otherwise agreed in writing by Owner and Contractor), to exercise such rights or remedies as the appealing party may have with respect to such decision in accordance with applicable Laws and Regulations.

3. Contractor shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, including any appeal thereof, except as Owner and Contractor may otherwise agree in writing.

C. The Design Professional or his authorized representative shall have authority to suspend operations at any time when the Work, in his opinion, is not being carried out in conformity with the Drawings and Specifications.

D. If Owner and the Design Professional agree, the Design Professional shall furnish a Resident Project Representative to assist the Design Professional in providing more extensive observation of the Work. The Resident Project Representative will be authorized to inspect all Work done and materials furnished. Such inspections may extend to all or to any part of the Work and to the preparation or manufacture of the materials to be used. He may be stationed on the Site to report to the Design Professional as to the progress of the Work and the manner in which it is being performed, to call attention whenever it appears that materials furnished or Work performed fails to fulfill requirements of the Specifications. The Resident Project Representative will have authority to reject materials or to suspend Work until the question at issue can be referred to and settled by the Design Professional. The Resident Project Representative will not be authorized to revoke, alter, enlarge, or release any requirements of the Specifications, nor to approve or accept any portion of the Work, nor will he be authorized to issue instructions contrary to the Drawings and Specifications. He will in no case act as foreman, nor will he interfere with management of the Work. The Resident Project Representative shall have the other responsibilities, authority and limitations provided in Exhibit A which is attached to and incorporated in these General Conditions.

SECTION 24. SUPERVISION AND GENERAL FOREMAN

A. The Contractor shall employ and keep on the Work at all times a competent general supervisor or foreman as his representative who shall not be replaced without prior written notice to Owner and Design Professional except under extraordinary circumstances and, in the absence of the Contractor from the Site, instructions given or notices served on this supervisor or foreman shall be binding upon the Contractor.

B. For purposes of giving or receiving notice, directives, Change Orders, or any other information from Design Professional or Owner to Contractor, the Contractor shall designate one person as Project Manager to receive such notice, directives, Change Orders, or other information. If the person so identified by Contractor is not present on the job Site during normal working hours for any consecutive 48 hour period, the Contractor shall in writing addressed to Design Professional and Owner identify the individual who is acting as Project Manager. Contractor may designate the resident superintendent as the Project Manager.

C. All workmen employed in the performance of the Contract shall be skilled in their particular trades. No mediocre Work will be accepted or countenanced.

D. Any foreman or workman employed on this Project who disregards orders or instructions, does not perform his work in a proper and skillful manner, or is otherwise objectionable, shall be removed from the Work and shall be replaced by a suitable foreman or workman.

E. The Contractor shall personally see to it that all sub-contracts and divisions of the Work are executed in a proper and workmanlike manner on scheduled time, and with due and proper cooperation.

F. Failure of the Contractor to keep the necessary qualified personnel on the Work shall be considered cause for termination of the Contract by the Owner.

SECTION 25. TAXES, CERTIFICATES, AND LAWS

A. All Federal, State, and local taxes due or payable during the time of Contract on materials, equipment, labor, or transportation, in connection with this Work, must be included in the amount bid by the Contractor and shall be paid to proper authorities before acceptance.

B. The Contractor shall furnish all necessary permits and certificates and comply with all laws or ordinances applicable to the locality of the Work.

SECTION 26. CONFERENCES

After the Effective Date of the Agreement and prior to the time the Contract Times start to run and before any Work at the Site is started, a conference attended by Contractor, Design Professional, Owner, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules required by the Contract Documents, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records. Other conferences between the Design Professional, the Contractor, Subcontractor, and other interested parties will be held periodically at the time and place as selected by the Design Professional. The Contractor's Superintendent, as well as a person in authority to make decisions, must be present as well as authorized and accredited representatives of the various Subcontractors and other persons and parties of interest.

SECTION 27. INJURIES TO PERSONS AND PROPERTY

A. The Contractor shall be held alone responsible for all injuries to persons and for all damages to the property of the Owner or others caused by or resulting from the negligence of himself, his employees or his agents, during the progress of or in connection with the prosecution of the Work, whether within the limits of the Work or elsewhere and whether under the Contract proper or as extra Work.

B. The Contractor must protect and support all water and gas pipes or other conduits and buildings, walls, fences, or other properties which are liable to be damaged during the execution of his Work. He shall take all reasonable and proper precautions to protect persons, animals, and vehicles of the public from injury, and wherever necessary, shall erect and maintain a fence or railing around any excavation, and place a sufficient number of lights about the Work and keep them burning from twilight until sunrise, and shall employ one or more watchmen as an additional security whenever they are needed. He must, as far as practicable and consistent with good construction, permit access to private and public property and leave fire hydrants, catch basins, streets, etc., free from encumbrances. He must restore at his own expense all injured property caused by any negligent act of omission or commission on his part or on the part of his agent, including sidewalks, curbing, sodding, pipes, conduits, sewers, buildings, fences, bridges, retaining walls, tanks, power lines, levees, or any other building or private property to a condition as good as it was when he entered upon the Work.

C. In case of failure on the part of the Contractor to restore such property or make good such damage, the Owner may upon forty-eight (48) hours notice proceed to repair, rebuild, or otherwise restore such property as may be deemed necessary, and the cost thereof will be deducted from any monies due or which may become due under the Contract.

D. The Contractor shall indemnify and save harmless the Owner, or the Design Professional acting in behalf of the Owner, from all suits and actions that may be brought against it by reason of any injury, or alleged injury, to the person or property of another resulting from negligence or carelessness in the execution of the Work, or on account of any negligent act or omission, or from improper methods or means of construction on the part of the Contractor, his representatives, or employees. The Contractor shall have the sole responsibility of determining the best and proper method or means of construction and the Owner, or the Design Professional acting on behalf of the Owner, shall not be held responsible for determining or suggesting a method or means of construction, except as expressly indicated in the Contract Documents.

SECTION 28. CORRECTION OF WORK

A. The Contractor shall re-execute any Work that fails to conform to the requirements of the Contract and any defective Work that appears during the progress of the Work, and shall remedy any defects due to faulty materials or workmanship which appear within a period of one (1) year from the date of completion of the Contract or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents. The provisions of this article apply to Work done by direct employees of the Contractor, and by Subcontractors as well.

B. Nothing herein, in the Agreement, or any of the other Contract Documents shall be construed as a waiver, modification, or alteration of the Contractor's or its surety's obligations under LSA-R.S. 38:2189. Nothing in this section or any other provision in the General Conditions or other Contract Documents concerning any correction period shall establish a period of limitation with respect to any other obligation which Contractor has under the Contract Documents. The establishment of time periods relates only to the specific obligations of Contractor to correct the Work, and has no relationship to the time within which Contractor's obligations under the Contract Documents may be sought to be enforced, nor to the time within which the proceedings may be commenced to establish Contractor's liability with respect to Contractor's obligations other than specifically to correct the Work.

C. If Contractor does not promptly comply with the terms hereof, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work

corrected or repaired or may have the rejected Work removed and replaced, and all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

SECTION 29. DEDUCTION FOR UNCORRECTED WORK

If the Owner and the Design Professional deem it inexpedient to require the Contractor to correct the Work injured or not done in accordance with the Contract Documents, an equitable deduction from the Contract Price shall be made.

SECTION 30. REMOVAL AND DISPOSAL OF STRUCTURES AND OBSTRUCTIONS

A. General

The Contractor shall remove any existing structure or part of structure, fence, building, or other encumbrances or obstructions that interfere in any way with the new construction. Compensation for the removal of any structure not listed as a pay item in the Bidding Documents and with a Contract Bid Price shall be included in the Contract unit prices bid for the pay items of the Work.

B. Privately and Publicly Owned Materials

If called for in the Supplementary Conditions, all privately and publicly owned materials in structures removed shall be salvaged without damage and shall be piled neatly and in an acceptable manner upon the premises if it belongs to an abutting property owner, otherwise at accessible points along the improvements. Material in structures which is property of the Owner or property of any public body, private body, or individual which is fit for use elsewhere, shall remain property of the original owner. It shall be carefully removed without damage, in sections which may be readily transported, and shall be piled neatly in an accessible point by the Contractor. When materials of Owner, State, Municipality, or Parish are stored on or beyond the right of way, the Contractor will be held responsible for their care and preservation for a period of ten (10) days following the day the last or final portion of the materials stored at a particular location are placed thereon. When privately owned materials are stored beyond the right of way, the Contractor will be held responsible for their care and preservation for a period of ten (10) days (computed as set forth above); provided, however, that as of the day the ten (10) days responsibility period for care and preservation of the materials begins, the Contractor must furnish the Design Professional with evidence satisfactory to the latter that the proper owner of the materials has been duly notified by the Contractor that the said owner must assume responsibility for his materials on the date following the Contractor's ten (10) day responsibility.

SECTION 31. SANITARY PROVISIONS

The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of his employees as may be necessary to comply with the rules and regulations of the State Board of Health or of the other authorities having jurisdiction, and shall permit no public nuisance.

SECTION 32. PUBLIC CONVENIENCE AND SAFETY

A. Road Closure

In the event that it becomes necessary to close any roadway or partially close any major road due to scheduled construction work being performed by contractor the public must be notified and made aware of the closure in a timely manner.

In order to utilize both the print and electronic media to disseminate this information to the public, the Jefferson Parish Public Information Office must receive pertinent information from the contractors concerning the closure.

Notice of a road closure or partial road closure of a major road must be sent to Jefferson Parish in care of its Public Information Officer, 1221 Elmwood Park Blvd., Suite 1002, Jefferson, Louisiana 70123.

THAT NOTIFICATION MUST CONTAIN THE FOLLOWING INFORMATION AND MUST BE RECEIVED BY THE PUBLIC INFORMATION OFFICE AT LEAST 10 DAYS PRIOR TO THE SCHEDULED CLOSURE:

- a.) Name of the contractor, engineer, etc., involved in the work/project who is responsible for the action.
- b.) A brief description of the project (Example: "...drain line installation," "...to remove and replace concrete slabs," etc.)
- c.) The date and time the action will take place and when re-opening is scheduled. (Example. "...will be closed from 6 a.m. on Friday, July 23, 1999 to 8 p.m. on Monday, July 26, 1999.")
- d.) The exact location of action. (Example: "...closed on David Drive from W. Napoleon Avenue to Veterans Memorial Boulevard," or "...the 900 block of David Drive")
- e.) Define the action that will be taken. (Example: eastbound, westbound, inside or outside lanes or both, etc.)
- f.) If the roadway will be closed completely to traffic and a detour will be in effect, a map illustrating the detour route must accompany the information.
- g.) Contact person for additional information.

B. Care of Traffic

No road shall be closed by the Contractor to the public except by written permission of the Design Professional, and except while so closed, the Contractor shall maintain traffic over, through, or around the Work included in his Contract, with the maximum practical convenience, for the full twenty-four hours of each day of the Contract, whether or not Work has ceased temporarily. The Contractor shall notify the Design Professional at the earliest possible date after the Contract has been executed, and in any case before the starting of any construction that might in any way inconvenience or endanger traffic, so that the necessary arrangements may be determined.

C. General Public

The convenience of the general public and of residents along the Work shall be provided for in a reasonably adequate and satisfactory manner. Where existing roads are not available for use as detours, unless otherwise provided, all traffic shall be permitted to pass through the Work. In such cases the vehicles of the traveling public shall have precedence over Contractor's vehicles to the end that the traveling public's vehicles shall not be unduly delayed for the convenience of the Contractor. In order that all unnecessary delay to the traveling public may be avoided, where ordered by the Design Professional, the Contractor shall provide and

station competent flagmen whose sole duties shall consist of directing and controlling the movement of public traffic either through or around the Work.

D. Temporary Roads, Driveways, etc.

The Contractor shall provide and maintain, in a manner approved and deemed practicable by the Design Professional, such temporary roads as may be necessary to provide convenient access to driveways, houses, buildings, or other property abutting the Work. Where temporary bridges are necessary for traffic and pedestrians, these bridges shall be constructed at the expense of the Contractor as directed by the Design Professional.

E. Arranging the Work

The Contractor shall arrange his Work so that no undue or prolonged blocking of business establishments will occur.

F. Storage of Materials

Materials and equipment stored on the right of way or Project Site shall be so placed and the Work at all times shall be so conducted as to insure minimum danger and obstruction to the traveling public.

G. Control During Work

During grading operations where traffic is being permitted to pass through construction, the Contractor shall provide a smooth, even surface that will provide a satisfactory passageway for use of traffic. The road bed shall be sprinkled with water if necessary to prevent a dust nuisance, provided the dust nuisance is a result of the Work.

H. Fire Protection

Fire hydrants shall be accessible at all times to the Fire Department. No material or other obstructions shall be placed closer to a fire hydrant than permitted by ordinances, rules, or regulations or within fifteen (15') feet of a fire hydrant, in the absence of such ordinances, rules, or regulations.

SECTION 33. STRUCTURES AT RAILROAD CROSSINGS

A. Notification

No Work of any character shall be commenced on railroad right of way until the Railroad Company has issued a permit to the Owner and has been duly notified by the Contractor in writing (with a copy forwarded to the Design Professional) of the date he proposes to begin Work, and until an authorized representative of the Railroad Company is present, unless the Railroad Company waives such requirement.

B. Inspection by Railroad Company

All Work performed by the Contractor within the right of way limits of the railroad shall be subject to the inspection and approval of the chief engineer of the Railroad Company, or his authorized representative and any precautions considered necessary by said chief engineer to safeguard the property, equipment, employees, and passengers of the Railroad Company shall be taken by the Contractor without extra compensation.

C. Cooperation with Railroad Company

The Contractor shall, without extra compensation, take such precautions and erect and maintain such tell-tale or warning devices as the Railroad Company considers necessary to safeguard the operation of its trains. The temporary vertical and horizontal clearances specified by the chief engineer of the Railroad Company in approving these shall be maintained at all times. No steel, brick, pipe, or any other loose material shall be left on the ground in the immediate vicinity of the railway tracks.

D. Insurance

Before any Work is done within the Railroad right of way, the Contractor shall provide and pay all costs of any special insurance requirements of the Railroad.

SECTION 34. PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE

A. Contractor's Responsibility The Contractor shall not enter upon private property for any purpose without first obtaining permission from the owners and lessees. The Contractor shall use every precaution necessary for the preservation of all public and private property, monuments, highway signs, telephone lines, other utilities, etc., along and adjacent to the Work; shall use every precaution necessary to prevent damage to pipes, conduits, and other underground structures; and shall protect carefully from disturbance or damage all land monuments and property marks until an authorized agent has witnessed or otherwise referenced their location and shall not remove them until directed. The street and highway signs and markers that are to be affected by the Work shall be carefully removed when the Work begins and stored in a manner to keep them clean and dry. The Contractor must obtain all necessary information in regard to existing utilities, and shall give notice in writing to the owners or the proper authorities in charge of streets, gas, water, pipes, electric, sewers, and other underground structures, including conduits, railways, poles and pole lines, manholes, catch basins, fixtures, appurtenances, and all other property that may be affected by the Contractor's operations, at least forty-eight (48) hours before his operations will affect such property. The Contractor shall not hinder or interfere with any person in the protection of such work or with the operation of utilities, at any time. When property or the operation of railways, telephone lines, telegraph lines, or other public utilities are endangered, the Contractor shall, at his own expense, maintain flagmen or watchmen and any other necessary precautions to avoid interruption of service or damage to life or property, and he shall promptly repair, restore, or make good any injury or damage caused by his negligent operations in an acceptable manner. The Contractor must also obtain all necessary information in regard to the installation of new cables, conduits, and transformers, and make proper provision and give proper notifications, so that these can be installed at the proper time without delay to the Contractor or unnecessary inconvenience to the Owner.

B. Undercutting Buildings

Where provided in the Supplementary Conditions, when the Work involves the undercutting of any buildings along the Work, the Contractor must give property owners and lessees due and sufficient notice of the undercutting and the Contractor shall adequately support such buildings. The Contractor and his surety shall hold the Owner and their representatives harmless from any damages resulting from undercutting any such buildings.

C. Removal/Relocation of Trees on Public Property

The Director of the Jefferson Parish Parkways Department shall be contacted and advised of trees that are on public property prior to the removal/relocation of such trees by

the Contractor. Furthermore, the Department of Parkways shall be given a reasonable period of time to respond and when necessary remove the trees.

D. Trees, Shrubs, Plants, or Grass

The Contractor shall not remove, injure, cut, or destroy trees, shrubs, plants, or grass that are to remain in the streets or those which are privately owned, without proper authority. Unless otherwise provided in the Supplementary Conditions or the Bidding Documents, the Contractor shall replace and replant all plants, shrubs, and grass and restore the grounds back to its original good condition to the satisfaction of the Owner and property owner. The Contractor shall assume the responsibility of replanting and guarantees that plants, shrubs, and grass will be watered, fertilized, and cultivated until they are in a growing condition. No direct payment will be made for removing and replanting of trees, shrubs, plants, or grass unless such items are set forth in the Bidding Documents.

E. Reparation

When or where any direct damage or injury is done to public or private property by or on account of any negligent act, omission, neglect, or otherwise of the Contractor, he shall make good such damage or injury in an acceptable manner.

SECTION 35. BARRICADES, DANGER, WARNING, AND DETOUR SIGNS

A. General

The Contractor shall, without extra compensation, provide, erect, paint, and maintain all necessary barricades. Also without extra compensation, the Contractor shall provide suitable and sufficient lights, torches, reflectors, or other danger signals and signs, provide a sufficient number of watchmen and flagmen, and take all necessary precautions for the protection of the Work and safety of the public.

B. Warning Signs, Painting, Illumination

The Contractor shall erect warning signs beyond the limits of the Project, sufficiently in advance of any place on the Project where operations interfere with the use of the road by traffic, including all intermediate points where the new Work crosses or coincides with the existing road. Barricades shall be kept well painted and suitable warning signs shall be placed thereon. All barricades and obstructions shall be illuminated at night and all lights or devices for this purpose shall be kept burning from sunset to sunrise.

C. Hazards and Compensation

Whenever traffic is maintained through or over any part of the Project, the Contractor shall clearly mark all traffic hazards. No direct payment will be made for barricades, signs, and illumination thereof, or for watchmen or flagmen.

SECTION 36. RIGHTS OF WAY

A. The Owner will furnish the Contractor with all necessary rights of way for the prosecution of the Work. The rights of way herein referred to shall be taken to mean only permission to use or pass through the location or space in any street, highway, or public or private property in which the Contractor is to prosecute the Work.

B. It is possible that all lands and rights of way may not be obtained as herein contemplated before construction begins, in which event the Contractor shall begin his Work upon such land and rights of way as the Owner may have previously acquired. Any delay in furnishing these lands by the Owner shall be deemed proper cause for adjustment in the Contract amount and/or in the time of completion.

SECTION 37. CONTRACTOR'S RESPONSIBILITY FOR WORK

Until acceptance of the Work as being substantially complete by the Owner, the Work shall be in the custody and under the charge and care of the Contractor and he shall take every necessary precaution against injury or damage to any part thereof by the action of the elements or from any other cause, whether arising from execution or from the non-execution of the Work; unless otherwise provided elsewhere in the Specifications or Contract. The Contractor shall rebuild, repair, restore, and make good, without extra compensation, all injuries or damages to any portion of the Work occasioned by any of the above causes before its completion and acceptance, and shall bear the expenses thereof. In case of suspension of the Work from any cause whatever, the Contractor shall be responsible for all materials and shall properly store them, if necessary, and shall provide suitable shelter from damage and shall erect temporary structures where necessary. If, in the opinion of the Design Professional, any Work or materials shall have been damaged or injured by reason or failure on the part of the Contractor or any of his Subcontractors to so protect his Work, such materials shall be removed and replaced at the expense of the Contractor.

SECTION 38. OWNER'S RIGHT TO OCCUPANCY

The Owner shall have the right to use at any time, any and all portions of the Work that have reached such a stage of completion as to permit occupancy, provided such occupancy does not hamper the Contractor or prevent his efficient completion of the Contract. Such occupancy will not in any manner vitiate any part of the Contract, or be construed as constituting an acceptance of any part of the Work.

SECTION 39. INSURANCE AND INDEMNIFICATION

A. The Contractor shall not commence Work under the Contract until he has obtained all insurance required by these provisions.

B. That the insurance requirements, indemnity provisions, and waiver provisions for all Contractors engaged in performing Work or services for the Owner shall be as follows:

INDEMNITY

The **indemnity provisions on all construction projects** shall be as follows:

"To the fullest extent permitted by law, Contractor agrees to protect, defend, indemnify, and save the Owner, its agents, officials, employees, servants, including volunteers, or any firm, company, organization, or individual, or their contractors, or sub-contractors with whom the Owner may be contracted, harmless from and against any and all claims, demands, loss or destruction of property, actions, and causes of action of every kind and character, including but not limited to claims based on negligence, strict liability, and absolute liability which may arise in favor of any person or persons on account of illness, disease, loss of property, services, wages, death or personal injuries resulting from operations contemplated by the Contract, regardless whether others may be wholly, concurrently, partially, or solely negligent, or strictly liable, or absolutely liable or otherwise at fault, and regardless of any defect in the premises, equipment, or materials, irrespective of whether same pre-existed this Agreement, except damages arising

out of injuries or property claims to third parties caused by the sole negligence of Owner, its employees or agents.

Further, Contractor hereby agrees to indemnify, the Owner for all reasonable expenses including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs incurred by or imposed upon the Owner in connection therewith for any loss, damage, injury or other casualty. Contractor further agrees to pay all reasonable expenses and attorneys' fees incurred by the Owner in establishing the right to indemnity pursuant to the provisions of this section."

On contracts for purchase and installation and/or maintenance of equipment or purchase of materials, supplies, or services the following indemnity provision shall apply:

"To the fullest extent permitted by law, Contractor, agrees to protect, defend, indemnify and save the Owner, its agents, officials, employees, volunteers or any firm, company, organization, or individual, or their contractors, or subcontractors with whom the Owner may be contracted harmless from and against any and all claims, demands, actions, and causes of action of every kind and character including but not limited to claims based on negligence, strict liability, and absolute liability which may arise in favor of any person or persons on account of illness, disease, loss of property, services, wages, death or personal injuries resulting from acts or omissions of Contractor, its agents, employees, assigns, or subcontractors, during the operations contemplated by the Contract.

This indemnity does not extend to the sole negligence of the Owner and the Contractor shall not be liable to the Owner for its lost profits or revenue or consequential damages except claims advanced in tort and/or claims advanced in contract due to the bad faith of Contractor. Bad faith shall mean a breach of some motive or interest of ill will on the part of the Contractor.

Further, Contractor hereby agrees to indemnify the Owner for all reasonable expenses including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs incurred by or imposed upon the Owner in connection therewith for any such loss, damage, injury or other casualty. Contractor further agrees to pay all reasonable expenses and attorneys' fees incurred by the Owner in establishing the right to indemnity pursuant to the provisions in this agreement."

The insurance requirements shall be as follows:

ALL POLICIES AND CERTIFICATES OF INSURANCE OF THE CONTRACTORS/SUB-CONTRACTORS SHALL CONTAIN THE FOLLOWING CLAUSES:

A. The Contractor/Subcontractor insurers will have no right of recovery or subrogation against the Owner, it being the intention of the parties that the insurance policy so affected shall protect both parties and be the primary coverage for any and all losses covered by the below described insurance.

B. The Owner shall be named as additional insured as regards to negligence by the contractor [ISO Forms CG 20 10 (Form B) or latest applicable ISO form], or equivalent.

C. The insurance companies issuing the policy or policies shall have no recourse against the Owner for payment of any premiums or for assessments under any form of policy.

D. Any and all deductible in the below described insurance policies shall be assumed by and be for the amount of \$10,000.00, and at the sole risk of the Contractor/Subcontractor, but the deductible may be increased based upon the company's most recent financial audit if such increase is expressly approved in advance of the bid opening, in writing, by the Parish Attorney's Office with the concurrence of the Director of Risk Management.

E. Each insurance company issuing a policy or certificate as required herein shall include in such policy or certificate a clear, definite, and conspicuous statement that the policy or the certificate is issued for the Contractor/Subcontractor, who shall be named therein, and each such policy or certificate and all communications to the Owner and Contractor/Subcontractor regarding insurance required to be issued in accordance with this Contract shall include the name of the Contractor/Subcontractor, the Project number, the Proposal number, the Project name or title, and the Owner's name and address.

INSURANCE:

The Contractor/Subcontractor prior to commencing Work, shall provide at its own expense, proof of the following insurance coverage required by the Contract to the Owner by insurance companies authorized to do business in the State of Louisiana. Insurance is to be placed with insurers with an A.M. Best rating of no less than A:VI. This requirement will be waived for worker's compensation coverage only for those Contractors whose worker's compensation coverage is placed with companies who participate in the State of Louisiana Worker's Compensation Assigned Risk Pool or the Louisiana Worker's Compensation Corporation.

Thirty (30) days prior notice of cancellation shall be given to the Owner by registered mail, return receipt requested, on all of the required coverages provided to Jefferson Parish. All notices will name the Contractor/Subcontractor and identify the Contract number.

A. Worker's Compensation Insurance: As required by Louisiana State Statute exception; employer's liability shall be \$1,000,000 per occurrence when Work is to be over water and involves maritime exposures, otherwise this limit shall be no less than \$500,000 per occurrence.

B. Commercial General Liability Insurance with a Combined Single Limit per Occurrence for bodily injury and property damage. This insurance shall include coverage for bodily injury and property damage, and indicate on the certificate of insurance the following:

- 1) Premises - operations;
- 2) Broad form contractual liability;
- 3) Products and completed operations;
- 4) Use of contractors and sub-contractors;
- 5) Personal Injury;
- 6) Broad form property damage;
- 7) Explosion, collapse and underground [XCU] coverage.

NOTE: On the certificate of insurance, under the description of operations, the following wording is required: The aggregate loss limit applies to each project or a copy of ISO Form CG 25 03 [ed. 11-85 or latest form] shall be submitted.

COMBINED SINGLE LIMITS [CSL] - AMOUNT OF INSURANCE REQUIRED
CONTRACTS UP TO / CONTRACTS OVER
\$1,000,000 \$1,000,000

GENERAL CONTRACTS

-EACH OCCURRENCE/

MINIMUM LIMITS \$500,000 \$1,000,000

NEW CONSTRUCTION/RENOVATIONS:

-EACH OCCURRENCE/ \$500,000*** \$1,000,000***

MINIMUM LIMITS [DEPENDING ON DEPENDING ON
[DEPENDING ON BUILDING VALUE] BUILDING VALUE]
BUILDING VALUE]

***WHILE THE MINIMUM COMBINED SINGLE LIMITS OF \$500,000 IS REQUIRED FOR ALL RENOVATIONS, THE VALUE OF THE BUILDING SHALL BE MULTIPLIED BY 10% AND THE INSURANCE REQUIREMENTS WILL BE INCREASED AT \$1,000,000 INTERVALS AND ROUNDED TO THE NEAREST MILLION.

EXAMPLE: RENOVATIONS ON A THIRTY-THREE MILLION DOLLAR BUILDING WOULD REQUIRE THREE MILLION DOLLARS, [3,000,000] MINIMUM COMBINED SINGLE LIMITS OF COVERAGE

C. **Business Automobile Liability Insurance** with a Combined Single Limit of \$500,000 per Occurrence for bodily injury and property damage, unless otherwise indicated. This insurance shall include for bodily injury and property damage the following coverage:

- 1) Any automobiles;
- 2) Owned automobiles;
- 3) Hired automobiles;
- 4) Non-owned automobiles.

D. An **umbrella policy or excess** may be used to meet minimum requirements.

All property losses shall be payable to and adjusted with the Owner.

All policies of insurance shall meet the requirements of the Owner prior to the commencing of any Work. The Owner has the right but not the duty to approve all insurance policies prior to commencing of any Work.

Other insurance that may be required on construction and/or renovation projects is as follows:

E. **Owner's Protective Liability:** The Contractor shall take out and maintain a policy of Owner's Protective Liability for the same limits of liability for bodily injury and property damage liability and conditions as provided hereinabove under "Comprehensive General Liability Insurance". The cost of this coverage is at the Contractor's expense.

F. **Builder's Risk Insurance:** The Contractor shall take out and maintain Builder's Risk Insurance at his expense, unless otherwise provided for in the Supplementary Conditions, to insure both the Owner and Contractor as their interests may appear. These policies must cover for such amount of the Work as is determined by the Design Professional and shall be the all-risk type of coverage, unless otherwise provided for in the Supplementary Conditions. Although the insurance takes account of payments during the course of the construction from the Owner to the Contractor, it is understood that the Work shall be at the risk of the Contractor until accepted by the Owner as a whole. Except as otherwise provided by law, the Parish Attorney's Office with the concurrence of the Director of Risk Management is authorized to omit in whole or in part the insurance requirements of this section in connection with such contracts.

If at any time any of the said policies shall be or becomes unsatisfactory to the Owner as to form or substance; or if a company issuing any such policy shall be or become unsatisfactory to the Owner, the Contractors/Sub-contractors shall promptly obtain a new policy, submit the same to the Owner for approval and submit a certificate thereof as provided above.

Upon failure of a Contractor/Subcontractor to furnish, to deliver and maintain such insurance as above provided, the Contract, at the election of the Owner, may be forthwith declared suspended, discontinued or terminated. Failure of the Contractor/Subcontractor to take out and/or to maintain insurance shall not relieve the Contractor/Subcontractor from any liability under the Contract, nor shall the insurance requirements be construed to conflict with the obligation of the Contractors/Sub-contractors concerning indemnification.

Waiver: Except as otherwise provided by law, the coverage requirements of this section may be waived in whole or part on Contracts under \$100,000.00, and the Chairman of the Council is authorized to use his discretion in regard to insurance requirements for such contracts.

Except as otherwise provided by law, the Parish Attorney's Office with the concurrence of the Director of Risk Management is authorized to omit in whole or part the insurance requirements of this section in connection with such contracts.

SECTION 40. CHANGES IN THE WORK

The Design Professional shall have the right to make alterations in the line, grade, Drawings, form, or dimensions of the Work herein contemplated, provided such alterations do not change the total cost of the Project, based on the originally estimated quantities, and the unit prices bid by more than twenty-five (25%) percent, and provided further that such alterations do not change the total cost of any major item, based on the originally estimated quantities and the unit price bid by more than twenty-five (25%) percent. (A major item shall be construed to be any item, the total cost of which is equal to or greater than ten (10%) percent of the total Contract Price, computed on the basis of the Bidding Documents quantity and the Contract unit price.) Should it become necessary, for the best interest of the Owner, to make changes in excess of that herein specified, the same shall be covered by supplemental agreement either before or after the commencement of the Work and without notice to the sureties. If such alterations diminish the quantity of Work to be done, they shall not constitute a claim for damages for anticipated profits for the Work dispensed with, but when the reduction in amount is a material part of the Work contemplated, the Contractor shall be entitled to compensation as determined by the Design Professional for overhead and equipment charges which he may have incurred in expectation of the quantity of Work originally estimated, unless specifically otherwise provided herein; if the alterations increase the amount of Work, the increase shall be according to the quantity of Work actually done and at the price established for such Work under the Contract excepting where, in the opinion of the Design Professional, the Contractor is clearly entitled to extra compensation.

SECTION 41. EXTRA AND/OR ADDITIONAL WORK AND CHANGES

A. Without invalidating the Contract, the Design Professional with the approval of the Owner may order extra Work or make changes by altering, adding to, or deducting from the Work, the Contract sum being adjusted accordingly, and the consent of the surety being first obtained when necessary or desirable. All the Work of the kind bid upon shall be paid for at the price stipulated in the Bid, and no claims for any extra Work or material shall be allowed unless the Work is ordered in writing by the Owner.

B. Extra Work for which there is no price or quantity included in the Contract shall be paid for at a unit price or lump sum to be agreed upon in advance in writing by the Design

Professional and the Contractor and approved by the Owner. Where such price and sum cannot be agreed upon by both parties, or where this method of payment is impracticable, the Owner may order the Contractor to do such Work on a Force Account Basis.

1. For any equipment used that is owned by the Contractor, the Contractor shall be allowed a rental based upon the latest prevailing rental price, but not to exceed a rental price as determined by the Associated Equipment Distributors.

2. The Contractor shall also be paid the actual costs of transportation for any equipment which he owns and which he has to transport to the Project for the extra Work.

3. If the Contractor is required to rent equipment for extra Work, but not required for Contract items, he will be paid the actual cost of rental and transportation of such equipment, to which no percent shall be added. The basis upon which rental costs are to be charged shall be agreed upon in writing before the Work is started. Actual rental and transportation costs shall be obtained from receipted invoices and freight bills.

4. No compensation for equipment expenses incurred in executing extra Work, other than herein specifically mentioned, will be allowed.

C. A record of extra Work done on Force Account Basis shall be submitted to the Design Professional on the day following the execution of the Work, and no less than three copies of such record shall be made on suitable forms and signed by both the Design Professional's representative on the project and the Contractor. All bills for materials used on extra Work shall be submitted to the Design Professional by the Contractor upon certified statements to which will be attached original bills covering the costs of such materials.

D. Payment for extra Work of any kind will not be allowed unless the same has been ordered in writing by the Design Professional and the additions, deletions, and revisions in the Work or the Contract Documents embodied in a Written Amendment, a Change Order, or a Work Change Directive.

E. A change in the Contract Price or the Contract Times shall be accomplished only by a Written Agreement, a Change Order, or a Work Change Directive. Accordingly, no course of conduct or dealings between the parties, no express or implied acceptance of alterations or additions to the Work, and no claim that the Owner has been unjustly enriched by any alterations or additions to the Work shall be the basis of any claim for an increase in any amount due under the Contract Documents or a change in any time period provided for in the Contract Documents. Nor shall Contractor be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any Work performed that is not required by the Contract Documents as amended, modified, or supplemented as required in this paragraph E.

F. Agreements on any Change Order shall constitute a final settlement of all matters relating to the change in the Work that is the subject of the Change Order, including, but not limited to, all direct and indirect costs associated with such change and any and all adjustments to the Contract Price and the Contract Times. In the event a Change Order increases the Contract Price, the Contractor shall include the Work covered by such Change Order in applications for payments as if such Work were originally part of the Contract Documents.

SECTION 42. SUBSURFACE CONDITIONS

A. Notice: If Contractor discovers or should have discovered that any subsurface or

physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to require a change in the Contract Documents; or
 2. differs materially from that shown or indicated in the Contract Documents;
- or
3. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in Work of the character provided for by the Contract Documents; then Contractor shall immediately and in any event within 48 hours after Contractor's discovery and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency), notify Owner and Design Professional in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of a written order to do so.

B. Design Professional's Review: After receipt of written notice as required by paragraph A, Design Professional will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Design Professional's findings and conclusion.

C. Possible Price and Times Adjustments

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

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

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the relevant Unit Price provision of the Contract Documents.

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

a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner in respect to Contract Price and Contract Times by the submission of a Bid; or

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

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

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or

both, a Claim may be made therefor. However, Owner, Design Professional, and Design Professional's Consultants shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

SECTION 43. UNDERGROUND FACILITIES

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

1. Owner and Design Professional shall not be responsible for the accuracy or completeness of any such information or data; and
2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all such information and data,
 - b. locating all Underground Facilities shown or indicated in the Contract Documents,
 - c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and
 - d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. Not Shown or Indicated

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, immediately and in any event within 24 hours after Contractor's discovery and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Design Professional. Design Professional will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
2. If Design Professional concludes that a change in Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount

or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim thereof. However, Owner, Design Professional, and Design Professional's Consultants shall not be liable to Contractor for any claims, costs, losses or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

SECTION 44. HAZARDOUS ENVIRONMENTAL CONDITION AT SITE

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

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

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

C. Contractor must take all precautions to discover and locate any Hazardous Environmental Condition at the Site that may present a substantial danger to persons or property exposed thereto in connection with Work at the Site. Contractor shall be responsible for any damages arising out of or caused by a Hazardous Environmental Condition created on the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible. Within 24 hours of the time Contractor discovers a Hazardous Environmental Condition, Contractor shall follow the procedures set forth in paragraph D below.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency); and (iii) notify Owner and Design Professional (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Design Professional concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract

Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a claim therefor.

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

G. The provisions of Sections 42 and 43 are not intended to apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

SECTION 45. REMOVAL OF IMPROPER MATERIAL

All material to be provided by the Contractor shall be new material of the first and best quality, and if materials are brought on the Work which do not conform to the Specifications, the Design Professional shall order the same to be removed forthwith, and in case of the neglect or refusal of the Contractor or those employed by him to remove such materials, to cause the same to be removed at the expense of the Contractor and to deduct the cost of such removal and all other expenses incidental thereto from the amount which may be due or may become due the Contractor.

SECTION 46. TERMINATION OF THE CONTRACT

A. If the Contractor should be adjudged a bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse or should fail (except in cases for which extension of time is provided) to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to Subcontractors or for material or labor, or persistently disregards laws, ordinances, or the instructions of the Design Professional, or otherwise be guilty of a substantial violation of any provision of the Contract, then the Owner, upon the certificate of the Design Professional that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after complying with paragraph C below, terminate the employment of the Contractor and take possession of the premises and of all materials, tools, and appliances thereon and finish the Work by whatever method he may deem expedient.

B. Failure of the Contractor to start the Work within the time limit specified herein or substantial evidence that the progress being made by the Contractor is insufficient to complete the Work within the specified time shall be grounds for termination of the Contract by the Owner.

C. For Convenience, the Owner has the right to terminate the contract upon thirty (30) days written notice to Contractor.

D. Before the Contract is terminated, the Contractor and his surety will first be notified in writing by the Owner of the conditions which make termination of the Contract imminent. Ten (10) days after this is given, if a satisfactory effort has not been made by the Contractor or his surety to correct the conditions, the Owner may declare the Contract terminated and notify the Contractor and his surety accordingly.

E. Upon receipt of notice from the Owner that the Contract has been terminated, the Contractor shall immediately discontinue all operations. The Owner may then proceed with the Work in any lawful manner that he may elect until it is finally completed.

F. The right is reserved to take possession of any machinery, implements, tools, or materials of any description that shall be found upon the Work, to account for said equipment and materials, and to use same to complete the Project. When the Work is thus finally completed, the total cost of same will be computed. If the total cost is less than the Contract Price, the difference will be paid to the Contractor or his surety.

G. In case of termination, all expenses incident to ascertaining and collecting losses under the Bond, including engineering and legal services, shall be assessed against the Bond.

SECTION 47. INSPECTION

A. Duly authorized representatives or inspectors will be assigned by the Design Professional to supervise the Work. Their duties will be to see that proper materials are used and that the Work is done in accordance with the Drawings and Specifications. The right of final condemnation or acceptance of the Work shall not be waived by the Design Professional at any time during the progress of the Work or after its completion.

B. The Contractor shall be responsible for the faithful execution of the Contract and his presence or absence is in no manner to be presumed to relieve in any degree the responsibility or obligation of the Contractor.

C. The Contractor shall notify the Design Professional as to the exact time at which he proposes to begin the Work so the Design Professional may provide for inspection of all materials, foundations, excavations, equipment, etc., and all or any part of the Work and to the preparation or manufacture of materials to be used whether within the limits of the Work or at any other place.

D. The Design Professional or his representatives shall have free access to all parts of the Work and to all places where any part of the materials to be used are procured, manufactured, or prepared. The Contractor shall furnish the Design Professional all information relating to the Work and the materials, which may be deemed necessary or pertinent, and with such samples of materials as may be required. The Contractor, at his own expense, shall supply such labor and assistance as may be necessary in the handling of materials for proper inspection or for inspection of any Work done by him.

E. The Design Professional's representative shall have authority to reject defective materials and equipment and to suspend any Work that is being improperly done, subject to the final decision of the Design Professional.

SECTION 48. TESTING LABORATORY

The Design Professional shall select and the Owner shall pay for the services of a competent testing laboratory of recognized standing for all testing required in the technical Specifications.

SECTION 49. CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT

If the Work should be stopped under an order of any court or public authority, for a period of sixty (60) days, through no act or fault of the Contractor or of anyone employed by him, or if the Owner should fail to pay the Contractor within a reasonable time any sum certified by the

Design Professional, then the Contractor may, upon ten (10) days written notice to the Owner, stop Work or terminate the Contract and recover from the Owner payment for all Work executed and any loss sustained upon any plant or materials and reasonable profit and damages.

SECTION 50. APPLICATION FOR PAYMENTS

A. Requirements

1. At least 20 days before the date established for each progress payment (but not more often than once a month), Contractor shall submit to Design Professional for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the Second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in Section 51.

B. Review of Applications

1. Design Professional will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Design Professional's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Design Professional's recommendations of any payment requested in an Application for Payment will constitute a representation by Design Professional to Owner, based on Design Professional's observations on the Site of the executed Work as an experienced and qualified design professional and on Design Professional's review of the Application for Payment and the accompanying data and schedules, that to the best of Design Professional's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Design Professional's responsibility to observe the Work.

3. By recommending any such payment Design Professional will not thereby be deemed to have represented that: (i) inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Design Professional in the Contract Documents; or (ii) that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Design Professional's review of Contractor's Work for the purposes of recommending payments nor Design Professional's recommendation of any payment, including final payment, will impose responsibility on Design Professional to supervise, direct, or control the Work for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work. Additionally, said review or recommendation will not impose responsibility on Design Professional to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any liens.

5. Design Professional may refuse to recommend the whole or any part of any payment if, in Design Professional's opinion, it would be incorrect to make the representations to Owner referred to in paragraph B.2. Design Professional may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Design Professional's opinion to protect Owner from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Written Amendment or Change Orders;

c. Owner has been required to correct defective Work or complete Work in accordance with Section 28;

d. Design Professional has actual knowledge of the occurrence of any of the events enumerated in Section 46;

e. Design Professional has knowledge that Contractor has failed to pay Subcontractors or Suppliers or for labor;

f. Contractor has failed to make submittals in accordance with the accepted schedules or otherwise failed to comply with paragraphs G and H of Section 13;

g. Contractor owes or may owe Owner liquidated damages, actual damages, or both, in accordance with the provisions in the Agreement regarding delay in completion of the Work within the Contract Times.

C. Reduction in Payment

1. Owner may refuse to make payment of the full amount recommended by Design Professional because:

- a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
- b. liens have been filed in connection with the Work, except where Contractor has delivered a specified Bond satisfactory to Owner to secure the satisfaction and discharge of such liens;
- c. there are other items entitling Owner to a set-off against the amount recommended; or
- d. Owner has actual knowledge of the occurrence of any of the events enumerated in paragraph B.5. or Section 46.

2. If Owner refuses to make payment of the full amount recommended by Design Professional, Owner must give Contractor immediate written notice (with a copy to Design Professional) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld.

Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor corrects to Owner's satisfaction the reasons for such action.

3. If it is subsequently determined that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due.

SECTION 51. PAYMENTS TO CONTRACTOR

A. In accordance with Section 50, certificates for partial payment will be issued to the Contractor by the Design Professional monthly during the progress of the Work, in amounts equal to 90% of both the Work performed and of materials stored at the Site or other agreed place on projects having a Contract Price of less than \$500,000 and 95% of both the Work performed and of the materials stored at the Site or other agreed place on projects having a Contract Price of more than \$500,000. Partial payment certificates shall include only Work, materials, and equipment that are included in official Work orders, meeting the requirements of Drawings, Specifications, and Contract Documents.

B. After issuance by the Design Professional of the certificate of substantial completion, the Design Professional shall issue to the Contractor a certificate of payment in the sum sufficient to increase the total payments to 90% of the Contract Price on projects of less than \$500,000 and 95% of the Contract Price on projects of more than \$500,000.

C. Punch lists generated during a construction project shall include the cost estimates for the particular items of work the design professional has developed based on the mobilization, labor, materials and equipment costs of correcting each punch list item. The Owner shall withhold from payment the value of the punch list as per LSA-R.S. 38:2248 B.

D. The final payment certificate for the remaining balance due will be issued by the Design Professional no earlier than 45 days after the Contractor's filing of acceptance in the mortgage office of Jefferson Parish and a clear lien and privilege certificate dated no less than 45 days after the filing of the acceptance has been secured. Contractor may not apply for final release and payment of retainage or balance due under the Contract until, in the opinion of Design Professional, Contractor has satisfactorily completed all corrections identified during the final inspection provided for in Section 55 and has delivered, in accordance with the Contract

Documents, all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents, and other documents. The application for final payment shall be accompanied (except as previously delivered) by: (i) all documentation required under the Contract Documents, including but not limited to the Bonds and the evidence of insurance required herein and (ii) the consent of the surety, if any, to final payment.

Payment of the final balance due, which is otherwise subject to the provisions of Section 50 with respect to withholding, will become due and payable by Owner thirty days after the date of receipt of the final application for payment certificate or the clear lien and privilege certificate dated no less than 45 days after the filing of the acceptance as required by the Laws and Regulations, whichever is later.

E. Also, before issuance of the final payment certificate, the Contractor shall deposit with the Design Professional a certificate from the Clerk of Court and ex-officio recorder of mortgages for the Parish of Jefferson to the effect that no liens have been registered against the Contract Work which have not been satisfied and discharged.

F. On public contracts of \$10,000 or less, no progress payments will be made. Payment will be by lump sum upon completion of the Work. Payment is due five days after the Work is accepted by the Owner and the Contractor provides an affidavit that all Subcontractors, material men, Suppliers, and laborers have been paid.

G. All **annual contracts** shall include a fixed maximum amount of compensation for the services to be rendered. The fixed amount of compensation stated in the Contract shall not be exceeded by a factor of more than ten percent (10%) without an amendment to the Contract authorized by the Jefferson Parish Council (Jefferson Parish Ordinance 19653 - Code of Ordinances, Section (2-933.2).

SECTION 52. NOTICE AND SERVICE THEREOF

Any notice to the Contractor from the Design Professional relative to any part of the Contract shall be in writing and shall be considered delivered and the service thereof completed when said notice is posted, by registered mail, to the said Contractor at his last given address, or delivered in person to said Contractor or his authorized representatives on the Site.

SECTION 53. BREAKDOWN OF QUANTITY AND COST

The Contractor shall submit to the Design Professional periodical estimates supporting partial payment requests. These periodical estimates shall show the amount of the original estimate for each item, the amount due on each item, the gross total, the retained percentage, the amount previously paid, and the net amount of payment due.

SECTION 54. CLEANING UP

The Contractor shall at all times keep the premises free from accumulation of waste material and other debris caused by his employees or Work, and at the completion of the Work, he shall remove all rubbish from and about the Project Site, and all his tools, scaffolding, and surplus materials, including excess excavation, and shall leave his Work "broom clean" or its equivalent, unless more exactly specified.

SECTION 55. COMPLETION - FINAL INSPECTION

When, in the opinion of the Contractor, the Work provided for and contemplated by the

Contract Documents has been substantially completed, the Contractor shall notify the Design Professional in writing that the Work is substantially complete and request a final inspection. The Design Professional shall proceed to perform such final inspection in company with the Owner. Any and all Work found by this inspection to be defective or otherwise not in accordance with the Drawings and Specifications shall be included on a punch list, together with assigned values, and shall be corrected to the entire satisfaction of the Owner and at the expense of the Contractor. If the Contract is found to be not substantially complete in any of its details, the Contractor shall at once remedy such defects, and payment will be withheld and formal acceptance delayed until such Work has been satisfactorily completed.

SECTION 56. ACCEPTANCE

At such time that the Owner and Design Professional determine that the Work is substantially complete and acceptable in all respects, as evidenced by a resolution adopted by the Parish Council, the Owner will issue a written acceptance of the Work to the Contractor who will immediately at its own expense thereafter file same with the Clerk of Court and Ex-Officio Recorder of Mortgages for the Parish of Jefferson, and this shall be the only form of acceptance binding upon any party or parties to these operations.

SECTION 57. GENERAL GUARANTY

A. Neither the final certificate of payment nor any provision in the Contract Documents nor partial or entire use of the Work by the Owner shall constitute an acceptance of Work not in accordance with the Drawings, Specifications, and Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibilities for faulty materials or workmanship. The Contractor shall remedy any defects in the Work and pay for any damage to other work resulting therefrom which shall appear within a period of one year from the date of final recorded acceptance unless a longer period is specified in the Detailed Specifications. The Owner will give notice of observed defects with reasonable promptness.

B. The Contractor agrees to assign to the Owner at the time of final completion of the Work any and all manufacturer's warranties relating to equipment, machinery, materials and labor used and incorporated in the Work and Contractor further agrees to perform the Work in such a manner to preserve any and all manufacturer's warranties.

C. Nothing herein, in the Agreement, or any of the other Contract Documents shall be construed as a waiver, modification, or alteration of the Contractor's or its surety's obligations under LSA- R.S. 38:2189. Nothing in this section or any other provision in the General Conditions or other Contract Documents concerning any specific time periods shall establish a period of limitation with respect to any other obligation which Contractor has under the Contract Documents. The establishment of time periods relates only to the specific obligations of Contractor to correct the Work, and has no relationship to the time within which Contractor's obligations under the Contract Documents may be sought to be enforced, nor to the time within which the proceedings may be commenced to establish Contractor's liability with respect to Contractor's obligations other than specifically to correct the Work.

D. All representations, indemnifications, warranties and guarantees made in, required by or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work and termination or completion of the Agreement.

SECTION 58. LAWS TO BE OBSERVED

The Contractor shall give all notices and comply with all Laws and Regulations in any manner affecting the conduct of the Work, and all such orders and decrees as exist, or may be enacted by bodies or tribunal having any jurisdiction or authority over the Work, and shall indemnify and save harmless the Owner against any claim or liability arising from, or based on, the violation of any such law, ordinance, regulation, order, or decree, whether by himself or his employees.

SECTION 59. SUBMISSION TO JURISDICTION OF JEFFERSON PARISH COURTS

This Agreement shall be deemed to be a contract made under the laws of the State of Louisiana, and for all purposes shall be interpreted in its entirety in accordance with the laws of said State. The contractor hereby agrees and consents to the jurisdiction of the courts of the State of Louisiana over its person. The parties hereto agree that the sole and exclusive venue of any suit or proceeding brought pursuant to this contract shall be the 24th Judicial District Court for the Parish of Jefferson, State of Louisiana.

SECTION 60. INDEPENDENT CONTRACTOR

It is understood and agreed by the Owner and the Contractor that, while in the performance of services or carrying out other obligations under the Contract, the Contractor shall be acting in the capacity of an independent contractor and not as an employee of the Owner and that nothing contained in this Agreement is intended to be or shall be construed as creating any other relationship between the Owner and the Contractor. The Owner shall not be obliged to any person, firm or corporation for any obligations of the Contractor arising from the performance of their services under the Contract. The Contractor and Owner hereby acknowledge and agree that the Owner shall not: (a) withhold federal or state income taxes; (b) withhold federal social security tax (FICA); (c) pay federal or state unemployment taxes for the account of Contractor; or (d) pay worker's compensation insurance premiums for coverage for Contractor. Contractor agrees to be responsible for and to pay all applicable federal income taxes, federal social security tax (or self-employment tax in lieu thereof) and any other applicable federal or state unemployment taxes. Contractor agrees to indemnify and hold the Owner harmless from any and all federal and/or state income tax liability, including taxes, interest and penalties, resulting from the Owner's treatment of Contractor as an independent contractor. Contractor further agrees to reimburse the Owner for any and all costs it incurs, including, but not limited to, accounting fees and legal fees, in defending itself against any such liability.

SECTION 61. AFFIDAVIT ATTESTING THAT PUBLIC CONTRACT NOT SECURED THROUGH EMPLOYMENT OR PAYMENT OF SOLICITOR (LSA R.S. 38:2224)

The Contractor warrants that (1) he has not employed or retained any person, corporation, firm, association, company or other organization, either directly or indirectly, to secure the Contract, other than persons regularly employed by the Contractor and whose services were in the regular course of their duties for the Contractor and (2) that no part of the Contract Price received by Contractor was paid or will be paid to any person, corporation, firm, association, company or other organization, either directly or indirectly, any fee, commission, percentage, brokerage fee, gifts, or any other consideration, contingent upon or resulting from the award or making of the Contract or to solicit or secure the Contract, other than the payment of their normal compensation to persons regularly employed by the Contractor whose services in connection with the Contract were in the regular course of their duties for Contractor. For

breach or violation of this warranty, the Owner shall have the right to annul the Contract without liability.

SECTION 62. ARBITRATION

It is agreed and understood that the Owner does not submit to arbitration and any provisions to the contrary shall be null and void.

SECTION 63. INTENTION OF GENERAL CONDITIONS

These General Conditions shall be applicable to all contracts entered into by and between the Owner and contractors for public improvements, contracts for the purchase and installation and/or maintenance of equipment, annual contracts, and contracts for materials, supplies, or services except as they may be altered or amended with the consent of the representative of the Owner, and provided for in the Supplementary Conditions of each contract. Contractor shall presume to have full knowledge of the General Conditions which shall be applicable to all contracts whether he has obtained a copy thereof or not. Copies hereof shall at all times be available from the Clerk of the Jefferson Parish Council.

SECTION 64. HISTORICAL OR ARCHAEOLOGICAL DEPOSITS

If, during the course of construction, evidence of deposits of historical or archaeological interest is found, Contractor shall cease operations affecting the find and shall notify Owner, who shall notify the State Historic Preservation Officer. No further disturbance of the deposits shall ensue until Contractor has been notified by Owner that he may proceed. Owner will issue a notice to proceed only after the state official has surveyed the find and made a determination to the Owner. Compensation to Contractor, if any, for lost time or changes in construction to avoid the find, shall be determined in accordance with changed conditions or change order provisions of the Contract Documents.

SECTION 65. ORDER OF PRECEDENCE

Order of Precedence. In the event of an inconsistency in the Contract Documents, the order of precedence shall be as follows:

- a) Agreement
- b) Addenda/Change Orders/Written Amendment
- c) Contractor's Bid
- d) Supplementary Conditions
- e) General Conditions
- f) Invitation to Bid
- g) Instructions to Bidders
- h) Technical Provisions
- i) Referenced Standard Specifications
- j) Drawings

With reference to the Drawings, the order of precedence is as follows: Figures govern over scaled dimensions; detail drawings over general drawings; addenda/change order drawings govern over standard drawings; standard drawings govern over shop drawings.

SECTION 66. DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

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

Agreement-The written contract 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.

Application for Payment-The form accepted by Design Professional which is to be used by Contractor in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

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

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

Bidding Documents-The advertisement or invitation to Bid, instructions to bidders, the Bid form, and the proposed Contract Documents (including all Addenda issued prior to receipt of bids).

Bidding Requirements-The advertisement or invitation to Bid, instructions to bidders, and the Bid form.

Bonds-Performance and Payment bonds and other instruments or other permissible forms of security.

Change Order-A document recommended by Design Professional, which is signed by Contractor and Owner and authorizes an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Times, subject to and in accordance with the applicable Laws and Regulations and issued on or after the Effective Date of the Agreement.

Contract-The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

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) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, and Design Professional's written interpretations and clarifications issued pursuant to the General Conditions on or after the Effective Date of the Agreement. Shop Drawings submittals approved pursuant to the General Conditions and the reports and drawings referred to in the Bidding Requirements are not Contract Documents.

Contract Price-The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions in the Contract Documents in the case of Unit Price Work).

Contract Times-The numbers of days or the dates stated in the Agreement: (I) to achieve Substantial Completion, and (ii) to complete the Work so that it is ready for final payment as evidenced by Design Professional's written recommendation of final payment.

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

defective-An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, in that it does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to Design Professional's recommendation of final payment (unless responsibility for protection thereof has been assumed by Owner at Substantial Completion).

Design Professional-The person, firm or corporation named as such in the Agreement and which could be a professional engineer, an architect, or both.

Design Professional's Consultant-A person, firm or corporation having a contract with Design Professional to furnish services as Design Professional's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

Drawings-The drawings which show the scope, extent and character of the Work to be furnished and performed by Contractor and which have been prepared or approved by Design Professional and are referred to in the Contract Documents. Shop drawings are not Drawings as so defined.

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

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

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

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

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

Notice of Award-The written notice by Owner to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions precedent listed therein, Owner, if Owner decides to proceed with the Work, will sign and deliver the Agreement to the successful bidder. However, the Notice of Award shall not be construed as an agreement, meeting of the minds, contract, or any other legal obligations between the Owner and Contractor. Until the Contractor receives a Notice to Proceed from the Owner, the Contractor has no right or remedy against the Owner.

Notice to Proceed-A written notice given by Owner to Contractor (with a copy to Design Professional) fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform Contractor's obligations and the Work under the Contract Documents.

Owner-The Jefferson Parish Council, acting, as the context requires, either as the governing body on behalf of itself or the Jefferson Parish agency with whom Contractor has entered into the Agreement and for which agency the Work is to be provided or as the governing authority of

the political subdivision which has the legal authority and responsibility for this Contract and for which the Work is to be provided.

PCBs-Polychlorinated biphenyls.

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

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.

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

Resident Project Representative-The authorized representative of Design Professional, Owner, or an independent contractor who may be assigned to the site or any part thereof.

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

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

Specifications-The 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, firm or corporation having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

Substantial Completion-The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Design Professional as evidenced by Design Professional's issued and signed definitive Certificate of Substantial Completion, the Work is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it is intended; or if no such certificate is issued, when the Work is complete and ready for final payment as evidenced by Design Professional's written recommendation of final payment. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

Supplementary Conditions-The part of the Contract Documents which amends or supplements these General Conditions.

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

Underground Facilities-All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements 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 includes and is the result of performing or furnishing labor and furnishing and incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents. With respect to contracts for the purchase and installation and/or maintenance of equipment, annual contracts, and materials, supply, and services contracts, Work shall mean and include the provision or furnishing of services equipment, materials, or supplies and the performance of or the furnishing of labor and materials for the installation or maintenance of the same, to the extent required by and in accordance with the Contract Documents.

Work Change Directive-A written directive to Contractor, issued on or after the Effective Date of the Agreement, recommended by Design Professional and signed by Owner, 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 Change Directive will not change the Contract Price or the Contract Times, but is evidence that the parties expect that the change directed or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

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 nonengineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

EXHIBIT A

Duties, Responsibilities and Limitations of Authority of Resident Project Representative

Design Professional shall furnish a Resident Project Representative ("RPR"), assistants and other field staff to assist Design Professional in observing progress and quality of the work of Contractor.

Through more extensive on-site observations of the Work in progress and field checks of materials and equipment by the RPR and assistants, Design Professional shall endeavor to provide further protection for Owner against defects and deficiencies in the work of Contractor. However, Design Professional shall not, during such visits or as a result of such observations of Contractor's work in progress, supervise, direct, or have control over Contractor's work nor shall Design Professional have authority over or responsibility for the means, methods, techniques, sequences or procedures selected by Contractor, for safety precautions and programs incident to the work of Contractor, for any failure of Contractor to comply with laws, rules, regulations, ordinances, codes or orders applicable to Contractor's performing and furnishing the work, or responsibility of construction for Contractor's failure to furnish and perform the Work in accordance with the Contract Documents.

The duties and responsibilities of the RPR are limited to those of Design Professional in Design Professional's agreement with the Owner and in the construction Contract Documents, and are further limited and described as follows:

A. General

RPR is Design Professional's agent at the Site, will act as directed by and under the supervision of Design Professional, and will confer with Design Professional regarding RPR's actions. RPR's dealings in matters pertaining to the on-site Work shall in general be with Design Professional and Contractor, keeping Owner advised as necessary. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner with the knowledge of and under the direction of Engineer.

B. Duties and Responsibilities of RPR

1. *Schedules:* Review the progress schedule, schedule of Shop Drawing submittals and schedule of values prepared by Contractor and consult with Design Professional concerning acceptability.
2. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences and other project-related meetings, and prepare and circulate copies of minutes thereof.
3. *Liaison:*
 - a. Serve as Design Professional's liaison with Contractor, working principally

through Contractor's superintendent and assist in understanding the intent of Contract Documents; and assist Design Professional in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-site operations.

b. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.

4. *Shop Drawings and Samples:*

a. Record date of receipt of Shop Drawings and Samples.

b. Receive Samples which are furnished at the Site by Contractor, and notify Design Professional of availability of Samples for examination.

c. Advise Design Professional and Contractor of the commencement of any Work requiring a Shop Drawing or Sample if the submittal has not been approved by Design Professional.

5. *Review of Work, Rejection of Defective Work, Inspections and Tests:*

a. Conduct on-site observations of the Work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.

b. Report to Design Professional whenever RPR believes that any Work will not produce a completed Project that conforms generally to the Contract Documents or will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Design Professional of Work that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

c. Verify that tests, equipment and systems start-ups and operating and maintenance training are conducted in the presence of appropriate personnel, and that Contractor maintains adequate records thereof; and observe, record and report to Design Professional appropriate details relative to the test procedures and start-ups.

d. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of these inspections and report to Design Professional.

6. *Interpretation of Contract Documents:* Report to Design Professional when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Design Professional.

7. *Modifications:* Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report with RPR's recommendations to Design Professional. Transmit to Contractor in writing decisions as issued by Design Professional.

8. *Records:*

a. Maintain at the job Site orderly files for correspondence, reports of job conferences, Shop Drawings and Samples, reproductions of original Contract Documents including all Work Change Directives, Addenda, Change Orders, additional Drawings issued subsequent to the execution of the Contract, Design Professional's clarifications and

interpretations of the Contract Documents, progress reports, Shop Drawing submittals received from and delivered to Contractor and other Project related documents.

b. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the job Site, weather conditions, data relative to questions of Work Change Directives, Change Orders or changed conditions, list of job Site visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Design Professional.

c. Record names, addresses and telephone numbers of all Contractors, subcontractors and major suppliers of materials and equipment.

9. *Reports:*

a. Furnish to Design Professional periodic reports as required of progress of the Work and of Contractor's compliance with the progress schedule and schedule of Shop Drawing and Sample submittals.

b. Consult with Design Professional in advance of scheduled major tests, inspections or start of important phases of the Work.

c. Draft proposed Change Orders and Work Change Directives, obtaining backup material from Contractor and recommend to Design Professional Change Orders, and Work Change Directives.

d. Report immediately to Design Professional and Owner the occurrence of any accident.

10. *Payment Requests:* Review Applications for Payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Design Professional, noting particularly the relationship of the payment requested to the schedule of values, Work completed and materials and equipment delivered at the Site but not incorporated in the Work.

11. *Certificates, Maintenance and Operation Manuals:* During the course of the Work, verify that certificates, maintenance and operation manuals and other data required to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have this material delivered to Design Professional for review and forwarding to Owner prior to final payment for the Work.

12. *Completion:*

a. Before Design Professional issues a Certificate of Substantial Completion, submit to Contractor a list of observed items requiring completion or correction.

b. Observe whether Contractor has had performed inspections required by laws, rules, regulations, ordinances, codes, or orders applicable to the Work, including but not limited to those to be performed by public agencies having jurisdiction over the Work.

c. Conduct a final inspection in the company of Design Professional, Owner and Contractor and prepare a final list of items to be completed or corrected.

d. Observe whether all items on final list have been completed or corrected and make recommendations to Design Professional concerning acceptance and issuance of the Notice of Acceptability of the Work.

C. Limitations on Authority of RPR

Resident Project Representative:

1. Shall not authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items), unless authorized by Design Professional.

2. Shall not exceed limitations of Design Professional's authority as set forth in the Agreement or the Contract Documents.

3. Shall not undertake any of the responsibilities of Contractor, Subcontractor, Suppliers, or Contractor's superintendent.

4. Shall not advise on, issue directions relative to or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction unless such advice or directions are specifically required by the Contract Documents.

5. Shall not advise on, issue directions regarding or assume control over safety precautions and programs in connection with the Work.

6. Shall not accept Shop Drawing or Sample submittals from anyone other than Contractor.

7. Shall not authorize Owner to occupy the Project in whole or in part.

8. Shall not participate in specialized field or laboratory tests or inspections conducted by others except as specifically authorized by Design Professional.

AGREEMENT
{tc \1 "AGREEMENT} BETWEEN
JEFFERSON PARISH
(OR LIST OTHER, APPROPRIATE DISTRICT OR SUBDISTRICT)
AND
(INSERT NAME OF CONTRACTOR)

THIS AGREEMENT made and entered into on this _____ day of _____, 20____, by and between Jefferson Parish **(OR LIST OTHER, APPROPRIATE DISTRICT OR SUBDISTRICT)**, appearing through the Jefferson Parish Council (the governing authority of the political subdivision which has the legal authority and responsibility for this agreement and for whom the Work is being performed), through its Chairman _____, duly authorized to act by virtue of Resolution No. _____ which is made a part hereof, and (INSERT NAME OF CONTRACTOR), hereinafter called "Contractor".

NOW THEREFORE, for the considerations hereinafter expressed, the parties do agree as follows:

SCOPE OF WORK

Jefferson Parish, _____, by virtue of Resolution No. _____, _____ does hereby grant and confirm unto Contractor the contract in the amount of (INSERT AMOUNT IN WORDS) (\$ INSERT AMOUNT IN FIGURES), (INSERT NATURE OF WORK), as per the General Conditions, any Supplementary Conditions, the Drawings and Specifications on file in the Office of the Chief Buyer for the Parish of Jefferson under Proposal No. _____, and the Contractor's written Bid proposal dated _____, copies of which are attached hereto and made a part hereof.

The Contractor and its successors and assigns hereby agree to perform the Contract well and faithfully in strict conformity with the terms and conditions of the Contract, including the General Conditions, any Supplementary Conditions, the Drawings and Specifications, the Instructions to Bidders, and Contractor's written Bid proposal attached hereto.

OWNER'S REPRESENTATIVE

_____ is responsible for or designed the Project which is the subject of this Agreement and is hereinafter referred to as the Design Professional, who is to act as Owner's representative, and who is to assume all duties and responsibilities and have the rights and authority assigned to the Design Professional in the General Conditions in connection with the completion of Work in accordance with the General Conditions.

PAYMENT AND PERFORMANCE BOND

Contractor hereby firmly and truly binds himself as principal with _____, as surety, unto the Owner in the full and true sum of \$ _____ for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents, according to the terms and conditions of the attached performance and/or labor and materials payment bond(s).

CONTRACT TIMES OR TERM

For construction contracts, the Contract Times, as set forth herein, shall commence to run on _____ or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. The Work will be substantially completed within _____ days after the date when the Contract Times commence to run as provided above, and completed and ready for final acceptance in accordance with the General Conditions within _____ days after the date when the Contract Times commence to run. This time allocation allows for _____ days of lost production due to inclement weather.

For Annual Contracts, the Contract shall be effective on _____, _____ and shall terminate on _____, _____.

LIQUIDATED DAMAGES

In accordance with Section 17 of the General Conditions, Owner and Contractor agree that as stipulated ("liquidated") damages for delay (but not as a penalty) Contractor shall pay the Owner _____ (\$ _____) for each day after the time specified for Substantial Completion until the Work is substantially complete. After Substantial Completion of the Work Contractor shall pay to the Owner _____ (\$ _____) for each day after Substantial Completion until the Work is complete and ready for final acceptance in accordance with the General Conditions.

Also, in addition to and not in lieu of the foregoing liquidated damages, Owner and Contractor agree that Owner shall be entitled to recover from Contractor or Contractor's surety additional liquidated damages in accordance with Section 17 of the General Conditions.

PAYMENT AND TERMS

The Owner binds and obligates itself to pay to said Contractor on proper completion of the Work under this Agreement those amounts due under the terms and conditions set forth in the General Conditions attached hereto.

Notwithstanding anything to the contrary in the foregoing, Contractor acknowledges and agrees that, pursuant to the applicable Laws and Regulations, this Agreement is subject to an annual appropriation dependency requirement to the effect that the renewal and/or continuation of this Agreement is contingent upon the appropriation of funds to fulfill the requirements of the Agreement. If the Owner fails to appropriate sufficient monies to provide for payments under this Agreement, the Agreement shall terminate on the last day of the last fiscal year for which funds were appropriated. This ground for termination is in addition to any other grounds that are identified in the General Conditions or the Supplementary Conditions.

CONTRACTOR'S REPRESENTATIONS

In order to induce Owner to enter into this Agreement, the Contractor makes the following representations:

1. Contractor has visited the Site, has familiarized himself with and is satisfied as to the nature and extent of the Contract Documents, Work, locality, and as to all general, local and Site conditions and federal, state, and local Laws and Regulations, which may affect cost, progress, performance or furnishing of the Work.
2. Contractor has examined and carefully studied the Contract Documents (including any Addenda) and the other related data identified in the Bidding Documents including "technical data."
3. Contractor has carefully studied all (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Bidding Documents or in the Supplementary Conditions and (2) reports and drawings of a Hazardous Environmental Condition, if any, at the Site which has been identified in the Bidding Documents or in the Supplementary Conditions. Contractor accepts the determination, if any, set forth in the Bidding Documents of the extent of the "technical data" contained in such reports and drawings upon which Contractor is entitled to rely. Contractor acknowledges that such reports and drawings are not Contract Documents and may not be complete for Contractor's purpose. Contractor acknowledges that Owner and Design Professional do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Contract Documents with respect to Underground Facilities at or contiguous to the Site. Contractor has obtained and carefully studied (or assumes responsibility for having done so) all such additional supplementary examinations,

investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site or otherwise which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto. Contractor does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the performance and furnishing of the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract Documents.

4. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
5. Contractor has correlated the information known to Contractor, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies and data with the Contract Documents.
6. Contractor has given Design Professional written notice of all conflicts, errors, ambiguities or discrepancies that Contractor has discovered in the Contract Documents and the written resolution thereof by Design Professional is acceptable to Contractor, and the Contract Documents are generally sufficient to indicate and convey an understanding of all terms and conditions for performance and furnishing of the Work.

CONTRACTOR'S REPRESENTATIONS FOR NON-CONSTRUCTION CONTRACTS

1. Contractor has visited the Site, has familiarized himself with and is satisfied as to the nature and extent of the Contract Documents, Work, Locality, and as to all general, local and Site conditions and federal, state, and local Laws and Regulations, which may affect cost, progress, performance or furnishing of the Work.
2. Contractor has examined and carefully studied the Contract Documents (including any Addenda) and the other related data identified in the Bidding Documents including "technical data." relating to the requirements for the services, equipment, materials or supplies.
3. Contractor is aware of the general nature of work to be performed by Owner and others that relates to the Work as indicated in the Contract Documents.
4. Contractor has correlated the information known to Contractor, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies and data with the Contract Documents.
5. Contractor has given the Owner or the Design Professional, if any, written notice of all conflicts, errors, ambiguities or discrepancies that Contractor has discovered in the Contract Documents and the written resolution thereof is acceptable to Contractor, and the Contract Documents are generally sufficient to indicate and convey an understanding of all terms and conditions for performance and furnish of the Work.

ASSIGNMENT

Neither the Owner nor the Contractor shall assign, sell, transfer or otherwise convey any interest in this Agreement, including any monies due or to become due to the Contractor under the contract, without the prior written consent of the other, nor without the consent of the surety unless the surety has

waived its right to notice of assignment. Unless specifically stated to the contrary in any written consent, no assignment, sale, transfer, or conveyance will act as a release or discharge of a party from any duty or responsibility under this Agreement or the General Conditions.

SUBMISSION TO JURISDICTION OF JEFFERSON PARISH COURTS

This Agreement shall be deemed to be a contract made under the laws of the State of Louisiana, and for all purposes shall be interpreted in its entirety in accordance with the laws of said State. The contractor hereby agrees and consents to the jurisdiction of the courts of the State of Louisiana over its person. The parties hereto agree that the sole and exclusive venue of any suit or proceeding brought pursuant to this contract shall be the 24th Judicial District Court for the Parish of Jefferson, State of Louisiana.

ENTIRE AGREEMENT

This Agreement and the attached documents represent the entire agreement between the Owner and Contractor and supersede all prior negotiations, representations or agreements, either written or oral. This Agreement may be amended only by a written instrument signed by both the Owner, through its Council Chairman, and the Contractor.

SEVERABILITY CLAUSE

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

Thus done and signed on the date first above written, in the presence of the undersigned competent witnesses.

WITNESSES:

PARISH OF JEFFERSON

BY: _____, CHAIRMAN
JEFFERSON PARISH COUNCIL

WITNESSES:

(NAME OF CONTRACTOR)

BY: _____

STATE OF LOUISIANA

PARISH OF JEFFERSON

BEFORE ME, the undersigned authority, duly commissioned, qualified and sworn within and for the State and Parish aforesaid, personally came and appeared _____, who being by me duly sworn, deposed and said that ____ was one of the subscribing witnesses to the foregoing instrument; that the same was signed by _____ of _____ own free will, act and deed, for uses, purposes and considerations therein expressed in the presence of the appearer and in the presence of _____, the other subscribing witness.

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

NOTARY PUBLIC

STATE OF LOUISIANA

PARISH OF JEFFERSON

BEFORE ME, the undersigned authority, duly commissioned, qualified and sworn within and for the State and Parish aforesaid, personally came and appeared _____, who being by me duly sworn, deposed and said that ____ was one of the subscribing witnesses to the foregoing instrument; that the same was signed by _____ of _____ own free will, act and deed, for uses, purposes and considerations therein expressed in the presence of the appearer and in the presence of _____, the other subscribing witness.

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

NOTARY PUBLIC

DIVISION

1

GENERAL REQUIREMENTS

GENERAL REQUIREMENTS

THE GENERAL REQUIREMENTS ARE INTENDED TO AUGMENT AND COMPLEMENT THE PROVISIONS OF ALL OTHER DIVISION ZERO DOCUMENTS. THE SPECIFIC REQUIREMENTS OF THOSE DOCUMENTS SHALL SUPERSEDE IN THE EVENT OF CONFLICT WITH ANY PROVISION OF THE GENERAL REQUIREMENTS STATED HEREIN.

1.1 SUMMARY OF THE WORK:

- 1.1.1 The project consists of the Renovations at Live Oak Library for Jefferson Parish, located at 125 Acadia, Waggaman, Louisiana 70094 . The work shall include, but not be limited to, interior and exterior renovations to the existing library and other work as shown in the Bidding and Contract Documents.
- 1.1.2 The Contractor shall provide all labor, materials, equipment, storage, transportation, articles and services as mentioned in the Contract Documents or other services required to complete this project.
- 1.1.3 Only the highest standards of materials and workmanship shall be accepted.
- 1.1.4 All construction shall comply with all applicable building codes and ordinances.
- 1.1.5 All work shall conform to the following codes, regulations, and ordinances:
 - a. Current edition of local building code and zoning ordinances.
 - b. Uniform Plumbing Code, latest edition.
 - c. Uniform Mechanical Code, latest edition.
 - d. NFPA #70 National Electric Code, latest edition.
 - e. State Fire Marshal's regulations, including NFPA 101 - Life Safety Code, latest edition.
 - f. State Department of Labor and Industries regulations
 - g. State General Safety & Health Standards.
 - h. National Fire Protection Association Codes.
 - i. Americans with Disabilities Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines.
- 1.1.6 The General Contractor shall establish and maintain reference points required for the work. He shall establish corners and other key points, as well as layout exact locations of penetrations, openings, etc., as a guide to all trades. He shall verify grades, lines, levels, quantities, and dimensions indicated on the drawings before commencing work. The General Contractor also shall be responsible for maintaining proper safety procedures as required for the protection of employees, building occupants, and the public.
- 1.1.7 The Contractor, within the scope of his work, shall protect building from project related water damage of any sort. Furnish necessary equipment to provide this protection during the life of the contract.
- 1.1.8 The Contractor shall provide protection for the work against wind, storms, cold, or heat.

If low temperatures make it impossible to continue operations safely in spite of cold weather precautions, cease work and notify Architect.

- 1.1.9 The Contractor shall provide shoring, bracing, walls, barriers, etc. as required to maintain public safety and for the proper execution of the work, and have same removed when the work is complete. The design, installation, use, and removal of temporary shoring and bracing for existing and new floors, walls, roof, structure, etc. shall be the sole responsibility of the Contractor, who is also responsible for project sequencing, construction methods and techniques, etc.
- 1.1.10 The Contractor shall erect barricades, closures, barriers, dust screens, etc. as required to insure the safety of all building occupants. Coordinate all work with Owner's on-site representative. Protect existing buildings, grounds, etc. from construction related damage.

1.2 DEFINITIONS:

- 1.2.1 When the word "Architect" is used herein it refers to: Burgdahl and Graves - A.I.A. Architects, 2550 Belle Chasse Hwy - Suite 130, Gretna, LA 70053, 504-366-4433, FAX 504-366-0102.
- 1.2.2 When the word "Owner" is used herein it refers to: The Parish of Jefferson, or their designated agent.
- 1.2.3 The term "Contractor" shall mean the party to whom a contract is awarded for the work on the Project. Where the term "Contractor" is used herein, it shall have the meaning defined in the General Conditions. Only one Contractor is recognized as a party of the Contract and where the term "Contractor" is used, the General Contractor is referred to. Nothing contained in the contract documents shall be interpreted as, or shall create any contractual relationship between any subcontractor and the Owner.
- 1.2.4 "As directed" and "as instructed" refers to direction or instruction of the Architect. Similarly, "approved", "acceptable", and "satisfactory" shall mean approved by, acceptable to, and satisfactory to the Architect subject to the provisions of the contract. The judgment of the Architect in such matters shall be final.
- 1.2.5 "Provided", as used herein, included derivatives thereof, shall be interpreted to mean "furnish, fabricate, complete, transport deliver, install, erect, construct and finish, including all labor, materials, equipment, apparatus, appurtenances and expenses necessary to complete in place, ready for operation or use under the terms of these Specifications".
- 1.2.6 "Included" as used herein, including derivatives thereof, shall be interpreted to mean "include but not be limited to".
- 1.2.7 "or equal", "or approved equal", "equivalent to", and "similar to" when used in reference to the kind, brand, type, or make of equipment or material specified herein, shall mean that any proposed substitution must be equal, equivalent, or similar in the sole judgment of the Architect unless otherwise stated, and the Architect's written approval of such proposed substitution must be obtained.

1.2.8 Standards: Whenever reference is made in the Specifications to Federal industry or other standards and specifications, the edition current at the time of advertising for bids and all supplements or addenda thereto shall be followed and shall be as binding as if incorporated in the body of these Specifications. Abbreviations of lengthy names of several well known industry organizations have been used in these Specifications, such as ACI, AISC, ASTM, Fed. Spec., ASHRAE, and UL.

1.3 SCHEDULES AND REPORTS:

1.3.1 Lines and Levels: Before starting work, locate all benchmarks and general reference points, and establish and maintain all lines and levels necessary for the execution of the work.

1.3.2 Inspection and Tests: The Owner shall select and pay for the services of a competent testing laboratory for the tests as fully described in appropriate sections of these Specifications. The Contractor shall cooperate fully with the laboratory for the execution of the tests. Contact Architect regarding testing required for this Project.

1.3.3 Inspections: If the Specifications, the Architect's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Architect notice of its readiness for the inspection in sufficient time to allow inspection by the Architect, and if the inspection is by authority other than the Architect, the Contractor shall notify the Architect of the date fixed for such inspection. In the event any work should be covered up without approval or consent of the Architect, it shall be uncovered for examination at the Contractor's expense, if so required by the Architect.

1.4 SAMPLES AND SHOP DRAWINGS:

1.4.1 Samples: Submit all samples to the Architect for review. Reference in these Specifications to any material or product, make, or catalogue number shall be interpreted as establishing a standard or quality and shall not be construed as limiting competition, however, substitution procedures as outlined herein must be fully adhered to by Bidders.

1.4.2 Shop Drawings: Submit all shop drawings, product information, catalogues, brochures, and engineering data to the Architect for review prior to ordering materials. Upon receipt of a signed and dated review, the Contractor may proceed with the work. It shall be the Contractor's responsibility to verify conformance of all data with these Specifications in a separate review prior to submittal of same to Architect. Contractor's review stamp must be placed on each submittal prior to forwarding to Architect. Corrections or comments made on Shop Drawings during the Architect's review do not relieve Contractor from compliance with requirements of the Drawings and Specifications. The check is only for review of general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. The Contractor is responsible for: confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner. In the event that shop drawings are not submitted for review, Contractor shall assume responsibility that the work in question is in accordance with drawings, specifications, and all

referenced standards. Also see Section 01300.

- 1.4.3 Review For Substitutions: The words "reviewed" or "selected" as used herein shall mean "as reviewed and/or selected by the Architect". If the Contractor wishes to substitute any material specified, he must present to the Architect a written guarantee or specification that the substituted material meets that standard of the material specified. The Architect reserves the right to determine if the material is equal to that specified and is acceptable under this Contract. All items intended for Architect's consideration must be submitted no less than seven (7) working days prior to established Bid Date. Also see Section 01630 and 01631.

1.5 PERMITS, INDEMNITY, & INSURANCE:

- 1.5.1 The Contractor shall make application to, obtain, and pay for all permits required by any agency having jurisdiction over this project. This shall include all necessary special permits as may be required to conduct work at the specific location of this project. Contract Documents necessary for these applications shall be made available by the Architect for the cost of reproduction.
- 1.5.2 The Contractor shall include in the bid amounts for payment of all retailers occupational tax, social security, payroll tax and insurance, workmen's compensation, liability insurance, and old age benefits to the full statutory limits, along with all taxes and insurance required by local, State & Federal law.
- 1.5.3 To the fullest extent permitted by law, Contractor shall indemnify and hold harmless the Architect and his agents and employees from and against all claims, damages, losses and expenses including but not limited to attorney's fees arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or injury to or destruction of tangible property (other than the Work itself), including loss of use resulting therefrom, but only to the extent caused in whole or in part by any negligent act or omission of the Contractor, or a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder.
- 1.5.4 Contractor shall name the Architect as an additional named insured for the required Commercial General Liability Insurance as called for in the General Conditions bound in the Project Manual. Evidence of coverage must be submitted prior to commencement of any work.

1.6 TEMPORARY FACILITIES:

- 1.6.1 Utilities: The Contractor may use power as is available in the building, provided that proper arrangements are made with the Owner and Building Engineer. Absolutely no interruption to any existing building services will be allowed without specific consent of the Owner. Contractor shall furnish heat as required to protect materials and work from cold and dampness.
- 1.6.2 Water: The Contractor may use water as is available in the building, provided that proper

arrangements are made with the Owner and Building Engineer. Absolutely no interruption to any existing building services will be allowed without specific consent of the Owner and Architect.

- 1.6.3 Telephone: The Contractor shall maintain a telephone on-site for the duration of the project (cellular phone permitted).
- 1.6.4 Temporary Toilets: The Contractor shall provide adequate sanitary facilities in conformance with all Codes for employee use.
- 1.6.5 Site Office: Not required this project.
- 1.6.6 Temporary Stairs, Ladders, Scaffolding, and Closures: The Contractor shall provide and maintain temporary stairs and ladders as required for proper completion of the work by all trades. Special scaffolding required by any trade shall be provided by that trade. Provide closures for all exterior openings as soon as construction warrants to protect the work from the weather, unauthorized entry, etc.
- 1.6.7 General Provisions: The Contractor is responsible for the following: Daily closure of work areas building against unauthorized entry; use of an approved trash dumpster or the removal of demolition and waste material from site on a daily basis; and Erection of barricades, dust screens, and other devices as necessary to protect the health and welfare of the public and persons utilizing adjacent building areas and site.
- 1.6.8 Protection of Persons and Property: Each Contractor shall be responsible for providing and maintaining all safety requirements called for by State and City codes and by applicable Trade Union codes and rules.

1.7 MISCELLANEOUS CONDITIONS:

- 1.7.1 Job Sign: Not required this project.
- 1.7.2 Watchman: The Contractor shall provide watch service at his own option to guard the site and premises. Each trade is expected to take any extra precautions and measures against loss of equipment and materials as deemed necessary. Contractor's option to provide or not provide watch service shall not be construed as a release of liability for any losses caused by the failure to maintain a secure site at all times.
- 1.7.3 Cutting & Patching: All cutting and patching shall be the responsibility of the Contractor. No structural members shall be penetrated without approval of the Architect. The cutting of any building utility (water, electricity, plumbing, telephone, special systems, etc.) which would affect service to occupied building spaces shall be done only at times as coordinated in advance with Owner and Architect.
- 1.7.4 Work Affecting Interior Of Buildings: The Contractor shall coordinate all work to be performed within building with appropriate parties as designated by the Owner.
- 1.7.5 Noise Control: The Contractor shall take reasonable precaution to limit construction related noise affecting adjacent buildings and sites.

1.7.6 Weather Protection: The Contractor shall provide protection for all work and materials from adverse weather conditions. All work likely to be damaged shall be covered.

1.8 CLEAN-UP:

1.8.1 General: The Contractor shall maintain a continual policing of the area to prevent the accumulation of waste and rubbish. Each subcontractor shall be responsible for the clean-up of his waste and rubbish.

1.8.2 Final Clean-Up and Repairs: See Section 01710.

1.8.3 Site Conditions: The site shall be returned to preconstruction condition, including complete cleanup, filling and replanting ruts and damaged grass areas, replacement of damaged landscaping, repairs to broken sidewalks and curbs, etc.

1.9 PROJECT CLOSE-OUT:

1.9.1 Guarantees and Bonds: The Contractor shall provide guarantees and bonds as required by the Contract Documents.

1.9.2 Final Inspection: When the project is complete, the Contractor shall give written notice to the Architect, who will prepare a list of incomplete and/ or defective items of work and issue to all parties.

1.9.3 Record Drawings: During the process of the work, the Contractor shall keep on the site a separate set of drawings and specifications used solely for the purpose of marking in red all changes to the work to show deviation from the original Contract Documents. Record Drawings shall also reflect changes in the work due to issued Addenda, Change Orders, and Field Directives. The information from the marked up drawings and specifications shall then be transferred by Contractor to reproducible form (bond for drawings, corrected photocopies for specifications) and returned to the Architect for delivery to Owner upon completion of the work.

END OF SECTION

SPECIAL PROVISION

WORK STOPPAGE DUE TO PUBLICLY DECLARED EMERGENCY

If there is an emergency declared by the Federal, State or Local government in Jefferson Parish or in any portion thereof, then all work on this project shall cease until such time as the contractor is instructed to resume work by Department Director (no one else) who has jurisdiction over the project.

If there is any type of work which must proceed to prevent harm to persons or property, or damage to the project itself; then contractor should immediately contact the Department Director for necessary instructions. If contractor is unable to contact the Department Director, contractor may perform the work necessary to prevent such harm in accordance with industry safety standards.

Contractor shall be entitled to an extension of time for the period of the stoppage, but shall not be entitled to any additional compensation by reason thereof.

SECTION 01025

APPLICATIONS FOR PAYMENT

PART 1 - GENERAL

1.1 **DESCRIPTION OF WORK:**

A. Work Specified in This Section:

1. This Section specifies administrative and procedural requirements governing the Contractor's Applications for Payment.

B. Related Work Specified Elsewhere:

1. Section 01300 - Submittals

1.2 **SCHEDULE OF VALUES:**

- A. The Schedule of Values shall be submitted on AIA-G702 and AIA-G703 forms and shall be in sufficient detail to show each phase of the work of each section of the Specifications and each line item shall further include a separate listing for Total Cost of Labor and Total Cost for Materials and Equipment.
- B. The Contractor shall submit such data as may be required by the Architect to establish the reasonableness of the value assigned to the labor and/ or materials for each line item.
- C. In phased projects, the Schedule of Values shall be so arranged that each phase of the project is scheduled separately with line items for each of the various portions of the Work which constitute that phase. For each item, the Schedule of Values shall show separate line items for labor and materials.
- D. At the time of submitting the Schedule of Values, the Contractor shall also submit an estimate of the amount of each Request for the Owner's use in planning cash flow for the Project. It is understood that actual amounts requested by the Requests for Payment may not agree with this estimate.

1.3 **APPLICATIONS FOR PAYMENT:**

- A. Unless otherwise agreed between the Owner and Contractor, the Contractor shall submit his requests for payment in the form provided by the owner not later than the twentieth (20th) day of each month. Requests shall be based on work performed during the period ending with the date of request. The Owner will make a partial payment to the Contractor based on Contractor's requests duly certified and approved by the Architect by the twenty-fifth (25th) of the following month.
- B. Until Substantial Completion, the Owner will hold a retainage from each progress payments in accordance with the General Conditions.
- C. Each Request for Payment shall be accompanied with a monthly updated and signed progress schedule as prepared by the Project Coordinator and all necessary Owner requested forms. No application for Payment(s) received during this project, excluding the Application for Final Payment, will be certified to the Owner for payment until the signed, updated progress schedule has been received by the Architect.

1.4 STORED MATERIALS:

- A. In requesting payment for materials stored on or off the site, the Contractor shall submit with his Application for Payment the following:
 - 1. An itemized list of the stored material prepared in sufficient detail to identify the materials and their value.
 - 2. Evidence such as bills of sale or such other proof as may be requested by the Owner or Architect to substantiate that the materials listed have been paid for by the Contractor, or for materials stored at the site only, a notarized statement from the materials supplier stating that the materials will become the property of the Owner upon payment by the Owner to the Contractor.
- B. In addition for material stored off the site, the Contractor shall submit with his Application for Payment the following:
 - 1. Evidence that the materials are stored at the location previously agreed to in writing as provided by the General Conditions. No payment will be made for material stored off the site until the storage location has been agreed upon in writing.
 - 2. Evidence that the storage location is bonded.
 - 3. Evidence that the materials are insured while in storage and while in transit to the site.
 - 4. Evidence that transportation to the site will be provided.
- C. The materials may be reviewed in their storage location by the Architect. This inspection, if performed, is an extra service for which the Owner shall pay the Architect and for which the Owner shall be reimbursed by the Contractor by Change Order.

1.5 PROGRESS PAYMENTS:

- A. The Contractor shall provide with each Application for Payment:
 - 1. Updated progress schedule.
 - 2. Completed Owner requested form and documents.
 - 3. Evidence of stored materials, (if any).
 - 4. Review of record documents with A/E.

1.6 FINAL PAYMENT:

- A. At the completion of the Project prior to receiving final payment, the Contractor shall furnish the Owner, through the Architect, properly signed and notarized waivers of lien from all subcontractors employed and material suppliers furnishing materials for the Project. Such waivers shall be submitted before final payment will be processed to the Owner by the Architect.
- B. Administrative actions and submittals that shall proceed or coincide with this application include:
 - 1. Clear Lien and Privilege Certificate.

2. Occupancy permits and similar approvals.
3. Warranties (guarantees) and maintenance agreements.
4. HVAC Systems Test/ adjust balance records.
5. Operation and Maintenance instructions.
6. Start-up performance reports.
7. Final cleaning.
8. Consent of Surety.
9. Verification of continued insurance.
10. Final progress photographs (if required).
11. Completion of Project closeout requirements.
12. Completion of items specified for completion after Substantial Completion.
13. Assurance that unsettled claims will be settled prior to payment.
14. Assurance that Work not complete and accepted will be completed without delay.
15. Transmittal of required Project construction records to Owner.
16. Certified property survey (if required).
17. Proof that taxes, fees and similar obligations have been paid.
18. Removal of temporary facilities and services.
19. Removal of surplus materials, rubbish and similar elements.
20. Change of door locks to Owner's access.
21. Accurate As-Builts and Record Drawings.
22. Americans with Disabilities Act – Certificate of ADA/ ABA Compliance.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01040

PROJECT COORDINATION/CONTRACTOR'S USE OF PREMISES

PART 1 - GENERAL

1.1 SCOPE:

- A. The scope of this Section includes the General Contractor's responsibilities when performing work in and around occupied building(s) and site. Areas of particular concern include the following:
 - 1. Protection of site occupants and general public.
 - 2. Complying with all security requirements of the site and buildings as determined by the Owner.
 - 3. Protecting the buildings from damage, weather, and unauthorized entry.
 - 4. Restrictions for General Contractor's use of the premises.
 - 5. Phasing and Work Sequencing.
 - 6. Shoring & Bracing.
- B. The General Contractor is responsible for project sequencing, construction means, methods and techniques, etc., all to be in accordance with the provisions of these Specifications and applicable Code authorities.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

- A. The requirements of this Section shall coordinate with and govern all aspects of the work shown in the Bidding and Contract Documents. The General Contractor is responsible for supervising all aspects of the work, whether by their own forces or by subcontractors. He shall also make sure that the provisions of this Section are made a part of contract agreements with all suppliers, subcontractors, trades, etc. involved with the prosecution of the work.

1.3 QUALITY ASSURANCE:

- A. General: Unless conflicting and more restrictive requirements are indicated, comply with standards and recommendations of the following industry standards.
 - 1. Current edition of local Building Code and Zoning Ordinances.
 - 2. Uniform Plumbing Code, latest edition.
 - 3. Uniform Mechanical Code, latest edition.
 - 4. NFPA #70 National Electric Code, latest edition.
 - 5. State Fire Marshal's regulations, including NFPA 101 - Life Safety Code, latest edition.
 - 6. State Department of Labor and Industries regulations
 - 7. State General Safety & Health Standards.
 - 8. National Fire Protection Association Codes.
 - 9. Americans with Disabilities Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines, latest edition.

10. International Building Code, latest edition.

1.4 **SUBMITTALS:**

- A. Provide written work scheduling/ phasing information for the Owner's use and approval. Tentative schedule of upcoming work, and subsequent acceptance by the Owner, shall be updated on a weekly basis.

1.5 **JOB CONDITIONS:**

- A. The General Contractor shall be required to visit the site of the project, and shall assume full responsibility for all existing conditions which may affect (or be affected by) work included in his contract. Coordinate location of existing site structures, elements, utilities, and other built conditions scheduled to remain, and fully protect during course of construction. Repairs to, or replacement of, any existing conditions, construction, building contents, etc. damaged during course of work shall be the responsibility of the General Contractor, at no additional cost to the Owner. Match existing conditions, details, fit and finish, color, etc.

PART 2 - PRODUCTS

2.1 **MATERIALS:**

- A. General Contractor shall provide all materials and equipment necessary to protect site occupants and general public and existing buildings and site from the weather and work related activity for the entire length of the Contract.
- B. Temporary Covers, Closures, Protected Walkways, Etc.:
1. Use "Stud Grade" quality wood members to build partitions, protections, raised floor covered walkways, etc. all wood exposed to the weather shall be treated. Plywood shall be CDX Grade, in thicknesses appropriate for spanning conditions in accordance with APA recommendations. Maintain all standards of Section 06100-Rough Carpentry. Exterior partitions/ closures, temporary walkways, and roofs shall be protected with two (2) layers of 15 lb felt.
- C. Dust Screens:
1. Provide sheet polyethylene (6 mil or greater) to create dust barriers protecting building interiors from construction related dust. All joints shall be continuously sealed with weather resistant tape.
- D. Rain/ Weather Protection:
1. Provide and install all necessary materials, including, but not limited to, single ply roof membrane, flashing membranes, adhesives, mastics, bitumens, sealant, fasteners, etc., as required to maintain the buildings fully weather-tight against rain, wind, and cold during the entire life of the Contract. All new materials shall be compatible with existing materials.

E. Temporary Fences, and Gates:

1. When building temporary fences, gates, etc. at points of access into the grounds, the design, materials, installation means and methods used, shall be equal to the standards as provided by the existing fence system. Prior to erection, coordinate with Owner and Architect for prior approval of proposed work.

F. Miscellaneous Materials:

1. In addition to the materials listed herein, provide all other materials, components, systems, devices, equipment, etc. recognized in the industry as being effective for the particular task at hand.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS:

- A. It is intended that the General Contractor provide all materials, methods, means, equipment, etc. as necessary to provide necessary protection for site occupants and existing buildings (and contents) and site during the course of construction. The lists of materials and services referenced herein are not meant to be all inclusive; the General Contractor shall bear all costs associated with providing all necessary protective measures.
- B. Refer to Section 02110-Demolition, and provide the protections specified therein as are applicable to the work of this Section. Coordinate as required.

3.2 PROTECTION OF SITE OCCUPANTS AND GENERAL PUBLIC:

- A. The safety of site occupants and the public in general during the performance of this Contract is of primary importance. Take all precautions to protect users of site and general public from construction procedures. Install barriers, fences, partitions, etc. as required to prevent entry of unauthorized persons into work areas. Where necessary, build protected walkways to transfer occupants and visitors safely from one area of the building and/ or site to the next.
 1. Build temporary protected walkways, comprised of side partitions, temporary lighting, and a roof designed to protect against construction related loading and abuse. In exterior locations, provide raised flooring (with slip resistant coating) and a two (2) ply 15 lb felt roofing. Use treated wood and CDX plywood in exterior locations.
- B. All on-site storage of equipment and materials shall be restricted to areas designated by the Owner, enclosed by a chain link fence with locking gate. Install locking barriers at perimeter of each work area sufficient to restrict access within to General Contractor's forces.

3.3 PROTECTING THE BUILDINGS FROM DAMAGE, WEATHER, AND UNAUTHORIZED ENTRY:

- A. The General Contractor is responsible for protecting all existing buildings, contents, and

the site in general from both construction related damage and the weather (rain, wind, cold, etc.). Protections shall be maintained for the life of the Contract.

- B. Provide wood stud and plywood protection for existing site and building elements to protect them from construction related damage.
 - 1. Any damage to existing conditions caused by the execution of the work shall be repaired by the General Contractor at no additional cost to the Owner. Match existing materials, finishes, details, color schemes, etc.
 - 2. The site shall be returned to preconstruction condition, including complete cleanup, filling and replanting ruts and damaged grass areas, replacement of damaged landscaping, repairs to broken sidewalks and curbs, etc.
- C. Devise appropriate measures to weatherproof the buildings, using materials compatible with existing construction.
 - 1. Schedule demolition and removal work with methods for immediate closure in the event of inclement weather. Coordinate activities with reports from the National Weather Service to project appropriate work sequencing.
 - 2. Buildings must be made fully weather-tight at the end of each work day, with measures appropriate to withstand heavy rains, wind driven rain, and high winds.
- D. Secure the buildings against unauthorized entry at the end of each work day.
 - 1. Temporary closures shall offer the same protection against building entry as existing construction.
 - 2. Provide two (2) layers of 15 lb felt where closure is exposed to the weather.

3.4 PHASING & RESTRICTIONS FOR CONTRACTOR'S USE OF PREMISES:

- A. Occupancy: The site and buildings will not be occupied during the course of the construction contract.
 - 1. A weekly activity schedule designating work areas for the following week is to be coordinated with the facility manager.
- B. Hours during the week when work can, and cannot take place shall be established during the Pre-Bid Conference.
- C. Schedule the work and conduct operations in such a manner as to avoid interference with the use of, or passage to and from, adjacent facilities. Do not block exit doors, fire lanes, and other means of egress.
- D. Dust Control: Erect dust barriers and provide other measures as necessary to prevent movement of airborne dust into other portions of buildings under renovation. General Contractor must clean up all building interiors and site areas affected by construction dust and debris. This clean-up work shall be done on a daily basis.

3.5 WORK SEQUENCE:

- A. Coordinate construction schedule and operations with facility manager.
- B. Required means of egress from existing buildings (doors, walks, landings, platforms,

stairs, ramps, etc.) must be maintained in use and in accordance with the applicable Codes at all times during construction.

- C. Existing building interiors shall be positively protected from weather, dust and dirt at all times during the construction of new work. Noise shall be kept to a minimum. All construction shall be separated from other portions of the building by secure, dust-proof partitions. Temporary partitions exposed to weather shall be water-tight and insulated as necessary to properly protect the building interior.

3.6 SHORING AND BRACING:

- A. When working in and around existing buildings and structures, the design, installation, use, and removal of temporary shoring and bracing for existing and new walls, floors, structure, etc. shall be the sole responsibility of the General Contractor, who is also responsible for project sequencing, construction methods and techniques, etc.

END OF SECTION

SECTION 01200

PROJECT MEETINGS

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK:

A. Work Included in This Section:

1. This Section specifies administrative and procedural requirements for project meetings including but not limited:
 - a. Pre-Construction Conference.
 - b. Coordination/ Progress Meetings.

1.2 RELATED WORK:

- A. Section 01040 - Project Coordination/ Contractor's Use of Premises
- B. Section 01315 - Progress Schedules

1.3 PRE-CONSTRUCTION CONFERENCE:

- A. A pre-construction conference shall be scheduled by the Architect and held at the Project site or other convenient location after execution of the Agreement or Notice to Proceed, whichever comes first and prior to commencement of construction activities.

1. Attendees:

- a. The Owner, Architect, the Contractor(s) and its superintendent(s) shall each be represented at the conference by persons authorized to conclude matters relating to the Work.

2. Agenda:

- a. Discuss items of significance that could affect progress including such topics as:
 - i. Work sequencing and phasing.
 - ii. Tentative construction schedule.
 - iii. Designation of responsible personnel.
 - iv. Procedures for processing CPR's and Change Orders.
 - v. Procedures for processing Applications for Payment.
 - vi. Submittal of Shop Drawings, Product Data and Samples.
 - vii. Preparation of record documents.
 - viii. Use of the premises.
 - ix. Staging areas.
 - x. Safety procedures.
 - xi. Security.

xii. Housekeeping.

1.4 COORDINATION/ PROGRESS MEETINGS:

- A. The Project Coordinator shall conduct project coordination meetings at regularly scheduled times convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special Pre-installation meetings.
- B. Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1. Monthly Progress Meetings:

- a. To enable orderly review of progress during construction and to provide for systematic discussion of problems, monthly project meetings shall be held throughout the construction period.
- b. Persons designated by each Contractor(s) to attend and participate in the monthly project meetings shall have all required authority to commit the Contractor(s) to decisions agreed upon in the project meetings.
- c. The Architect will conduct the meetings, the project coordinator will compile minutes of each meeting and will distribute copies to the Owner, Architect, and Contractor(s). The Contractor(s) shall distribute such other copies as required. Each Contractor shall, to the maximum extent practicable, assign the same person or persons to represent the Contractor at project meetings throughout the construction period.

1.5 RECORDING:

- A. The Owner reserves the right to electronically record the proceedings of any or all meetings.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK:

A. Work Included in This Section:

1. This Section specifies administrative and procedural requirements for submittals required for performance of the Work, including:
 - a. Submittal Schedule.
 - b. Shop Drawings.
 - c. Product Data.
 - d. Samples.

B. Administrative Submittals:

1. Refer to Division 0, 1, and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:
 - a. Permits.
 - b. Applications for payment.
 - c. Performance and payment bonds.
 - d. Insurance Certificates.

1.2 SUBMITTAL PROCEDURES:

A. Submittal Preparation:

1. Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
2. Provide a space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the General Contractor's review and approval markings and the actions taken.
3. Include the following information on the label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name and address of General Contractor.
 - e. Name, phone number and address of subcontractor.
 - f. Name, phone number and address of supplier.
 - g. Name and phone number of manufacturer and his representative.
 - h. Number and title of appropriate Specification Section.
 - i. Drawing number and detail references, as appropriate.

1.3 SUBMITTAL SCHEDULE:

- A. The General Contractor shall prepare and submit to the Architect within 30 days following the Date of Commencement a schedule of Shop Drawings and Submittals as required in the Contract Documents. Schedule shall fix dates for submission, and the lead time for each submittal as related to requirements for return receipt for submittal to expedite delivery of material to maintain Progress Schedule. It is to be understood that this Schedule will be subject to change from time to time in accordance with the progress of the work. All Shop Drawings, Samples and Submittals for approval shall be completed within two (2) months following the Date of Commencement.
- B. Coordinate submittal schedule with the list of subcontracts, schedule of values and the list of products as well as the General Contractor's construction schedule.
- C. Submittal log shall be updated by the General Contractor monthly until all submittals are approved by the A/E.

1.4 STAFF NAMES:

- A. Within 10 days after the Notice to Proceed, submit a list of the General Contractor's principal staff assignments, including the Project Manager, Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list their addresses and telephone numbers (including emergency telephone numbers).

1.5 LIST OF SUBCONTRACTORS:

- A. The list of subcontractors required shall be submitted to the Architect not later than 10 days from the Date of Commencement. This list shall include the names of manufacturers, material suppliers, and installers proposed for each of the products, equipment, and materials to be incorporated into this project. Names and products listed on the Bid Form(s) shall be included on this list.
- B. The General Contractor shall furnish upon request adequate data on any named entity on the list in order to permit the Architect and Owner to conduct a proper evaluation. Failure to object to a manufacturer shall not constitute a waiver of any of the requirements of the Contract Documents, and all products furnished by the listed manufacturer must conform to such requirements.

1.06 SHOP DRAWINGS:

- A. General:
 - 1. Each submittal shall be complete with a "Submittal Data" sheet completely filled out with all requested information including the General Contractor's stamp. A sample "Submittal Data" sheet is included at the end of this section.
 - 2. All submittals shall be dated and shall contain the project name; description or names of equipment; materials or equipment which are to be installed, reference to the Section of Specifications where it is specified and Drawing number where shown.
- B. Shop Drawings:

1. Submit legible, opaque prints of each drawing. Each drawing shall have a clear space for stamps. When phrase "by others" appears on Shop Drawings, the General Contractor shall indicate on drawing who is to furnish material or operations so marked before submittal. When Shop Drawings are checked "resubmit", or words of like meaning, General Contractor shall correct and resubmit opaque prints for approval to the Architect. After completion of checking of each submission of Shop Drawing prints, the Architect will return opaque prints to General Contractor. For use of all trades, the General Contractor shall provide such numbers of prints as are required for field distribution.
2. General Contractor shall review and approve submittals prior to submission to Architect. Failure to do so may result in return of submittal to the General Contractor without Architect's review.
3. By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the General Contractor represents that the General Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and the Contract Documents.
4. The responsibility for coordinating the Shop Drawings including technical data, capability (warranted and implied), sizing, color, texture, etc. shall be the sole responsibility of the General Contractor. The coordination between subcontractor and/ or material supplier shall be the responsibility of the General Contractor. The Project Coordinator shall be responsible to supervise this activity.
5. The Architect will review each of the General Contractor's submittals one initial time and, should resubmittal be required, one additional time to verify that the reasons for resubmittal have been addressed by the General Contractor and corrections made. Should additional resubmittals be required, the General Contractor shall reimburse the Owner for all costs incurred including the cost of the Architect's services made necessary to review such additional resubmittals.

C. Sheet Size:

1. Submit Shop Drawings on sheets 30" x 42" or 24" x 36".

1.7 SAMPLES:

- A. Unless otherwise specifically directed by the Architect, all Samples shall be of the precise article proposed to be furnished.
- B. Where variation in color, pattern, texture or other characteristics are inherent in the material or product represented, submit multiple units (not less than 3), that show approximate limits of the variations.
- C. Refer to Specifications for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation and similar construction characteristics.
- D. Submit all Samples in the quantity which is required to be returned plus one which will be retained by the Architect.

PART 2 - PRODUCTS

(Not applicable)

PART 3 - EXECUTION

(Not applicable)

**SEE SUBMITTAL DATA SHEET NEXT PAGE{ TC \12 "
SEE SUBMITTAL DATA SHEET NEXT PAGE}**

SUBMITTAL DATA

SUBMITTAL DATE:

NAME OF PROJECT:

OWNER:

ARCHITECT:

CONTRACTOR:

SUBCONTRACTOR:

SUPPLIER/ MANUFACTURER:

SPECIFICATION DIVISION NO.:

SPECIFICATION PARAGRAPH NO.:

DRAWING REFERENCE:

CONTRACTOR'S APPROVAL STAMP:{ TC \12 "CONTRACTOR'S APPROVAL STAMP}

END OF SECTION

01300-5

SECTION 01315

PROGRESS SCHEDULES

PART 1 - GENERAL

1.1 **DESCRIPTION OF WORK:**

A. Work Specified In This Section:

1. This Section specifies administrative and procedural requirements for the progress schedules and reporting progress of the Work.
2. Refer to General Conditions and the Agreement, for definitions and specific dates of Contract Time.

1.2 **RELATED WORK:**

- A. Division 0 - General Conditions of the Contract.
- B. Division 0 - Supplementary General Conditions.
- C. Section 01040 - Project Coordination and Use of Premises.

1.3 **QUALITY ASSURANCE:**

A. General:

1. The General Contractor as "Project Coordinator" shall provide the progress scheduling services, including planning evaluating and reporting.
2. The General Contractor shall deliver the schedules to the Architect within 48 hours of request.

1.4 **PROGRESS SCHEDULE:**

A. CPM Schedule:

1. Immediately following Contract Award, the General Contractor shall hold a meeting for the purpose of establishing and preparing a Construction Progress Schedule. Each major subcontractor shall be represented.
2. The Construction Progress Schedule, utilizing a critical path method of scheduling, shall be detailed to a degree which will permit proper and complete coordination of all trades in each portion of the work. Therefore, the schedule shall specifically indicate the following dates:
 - a. The date of satisfactory enclosure.
 - b. The date of transfer of responsibility for temporary heat from the General Contractor to the Owner.
 - c. Dates scheduled for delivery of major items of equipment.
 - d. Dates scheduled for completion of installation of major items of equipment.
 - e. The anticipated date of Substantial Completion.

- f. The date of Final Completion of the project, as established by the Contract.
3. The complete Construction Progress Schedule bearing the approval signature of the General Contractor and major subcontractors, shall be distributed to all interested parties in quantities as required.
4. At the time of submitting the Construction Progress Schedule to the Architect, the General Contractor shall also submit the anticipated amount of each monthly payment that will become due in accordance with the Progress Schedule.
5. Any time gained through the General Contractor's acceleration of the Schedule (float time) shall accrue to the Owner without additional cost.
6. Post original and current copy of the schedule in the temporary field office.

B. Phasing:

1. Provide notations on the schedule to show how the sequence of the Work is affected by requirements for phased completion to permit Work by separate Contractors and partial occupancy by the Owner prior to Substantial Completion.

C. Format:

1. Display the full network on opaque prints of sufficient width to show data clearly for the entire construction period. Prints shall be a maximum of 11" x 17" for reproducibility.
2. Mark the critical path. Locate the critical path near the center of the network; locate paths with the most float near the edges.
3. Sub networks on separate sheets are permissible for activities clearly off the critical path.

D. Schedule Updating:

1. Revise the schedule immediately after each meeting or other activity, where revisions have been recognized or made including all approved CPR's. Issue the signed updated schedule concurrently with each Application for Payment.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01420

REFERENCE STANDARDS AND DEFINITIONS

PART 1 - GENERAL

1.1 SCOPE:

A. Section Includes:

1. General definitions for Specifications and other Bidding and Contract Documents including the Drawings.
2. Specification format and content explanation.
3. Explanation of Industry Standards.

1.2 DEFINITIONS:

- A. General: Basic Contract definitions are included in the Standard General Conditions of the Construction Contract.
- B. "Indicated": Shown, noted, scheduled and specified on the Drawings and/ or in Specifications.
- C. "Regulations": Laws, statutes, ordinances and lawful orders issued by authorities having jurisdiction.
- D. "Furnish": Supply and deliver to the project site.
- E. "Install": Unload, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean and perform similar operations at the project site.
- F. "Provide": Furnish and install, complete and ready for the intended use.
- G. "Installer": An installer is the General Contractor or another entity engaged by the General Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.
 1. The term experienced, when used with the term Installer, means having a minimum of five (5) previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of the authority having jurisdiction.
 2. Trades: Using terms such as carpentry does not imply 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 persons of the corresponding generic name.
 3. Assigning Specialists: Certain Sections of the Specifications require the specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the General Contractor has no option. However, the ultimate responsibility for fulfilling Contract requirements remains with the General Contractor.
 - a. This requirement shall not be interpreted to conflict with enforcing building codes

and similar regulations governing the Work. It is also not intended to interfere with local trade union jurisdictional settlements and similar conventions.

- H. "Project Site": The site area available to the General Contractor for performing construction activities, either exclusively or in conjunction, with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built. The General Contractor's site area is restricted by the public right-of-way.
- I. "Testing Agencies": A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.3 SPECIFICATION FORMAT AND CONTENT EXPLANATION:

- A. Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's 16 Division format.
- B. Specification Content: This Specification uses certain conventions regarding the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:
 - 1. Abbreviated Language: Language used in Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be interpolated as the sense requires. Singular words will be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.
 - 2. Imperative and streamlined language is used generally in the Specifications. Requirements expressed in the imperative mood are to be performed by the General Contractor. At certain locations in the Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the General Contractor, or by others when so noted.
 - a. The words "shall be" are implied wherever a colon (:) is used within a sentence or phrase.

1.4 INDUSTRY STANDARDS:

- A. Applicability of Standards: Except where Contract Documents include more stringent or specific requirements, industry standards, which are referenced in the Specifications are made a part of the Contract Documents and have the same force and effect as if bound or copied directly into Contract Documents.
 - 1. Where requirements are expressed in SI (metric) units, it is understood that corresponding metric versions of industry standards, if available (such as ASTM A36M for steel members or ANSI B18.22M for steel washers) will be the applicable standards.
- 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. In complying with these requirements, indicated numeric values are minimum or maximum, as appropriate for the context of the requirements. Refer uncertainties to the Architect for a decision before proceeding.

- C. Publication Dates: Where a date of issue or edition is not specified, comply with standard in effect on the date of Contract Documents.
- D. Conflicting Requirements: Where compliance with 2 or more standards are specified and where the standards may establish different or conflicting requirements for minimum quantities or quality levels, refer requirements that are different but apparently equal and uncertainties to the Architect for a decision before proceeding.
 - 1. 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 the requirements. Refer uncertainties to the Architect for a decision before proceeding.
- E. Copies of Standards: Each entity engaged in construction on the Project is required to 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, the General Contractor shall obtain copies directly from the publication source.
- F. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Generally recognized acronyms or abbreviations are used in the Contract Documents.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

END OF SECTION

SECTION 01600

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 **SCOPE:**

A. This Section includes:

1. Definitions.
2. Quality assurance; ADA/ ABA compliance.
3. Product delivery, storage and handling.
4. General product requirements.
5. Product selection procedures.
6. Hazardous materials.
7. Installation of products.

1.2 **RELATED SECTIONS:**

- A. Section 01420 - Reference Standards and Definitions
- B. Section 01630 - Product Substitution Procedures

1.3 **DEFINITIONS:**

A. Definitions: Terms used in the Drawings and Specifications such as “specialties”, “systems”, “structure”, “finishes” and “accessories”, which are self-explanatory and have well recognized meanings in the construction industry are not changed by this Section.

1. Products: Items purchased for incorporation in the work, whether produced for the Project or taken from previously produced stock, including “materials”, “equipment”, “systems” and similar terms.
2. Named Products: Items identified by manufacturer's product name, make or model designation.
3. Materials: Products that are shaped, cut, worked, mixed, finished, fabricated, processed or assembled to form a part of the work.
4. Equipment: Products with operational parts, whether motorized or manually operated, that usually, but not necessarily, requires service connections such as wiring or piping.

1.4 **QUALITY ASSURANCE:**

- A. Source Limitations: To the fullest extent possible, provide all products of the same kind from a single source.
- B. Compatibility of Options: When the General Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with other products.
- C. Labels and Nameplates: Unless required for evidence of compliance and to display essential operating data, labels and nameplates shall be concealed in the completed

construction.

1. Labels: Where required for observation after installation, locate product labels on an accessible surface that is not conspicuous.
 2. Equipment Nameplates: Provide a permanent nameplate on service-connected or power-operated equipment. Locate on an easily accessible surface which is inconspicuous in occupied spaces. The nameplate shall contain essential operating data such as:
 - a. Name of product and manufacturer
 - b. Model and serial number
 - c. Capacity
 - d. Speed
 - e. Ratings
- D. ADA/ ABA Compliance: Provide products and installation of products to comply with American with Disabilities Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines and all ADA/ ABA requirements in compliance with the local jurisdiction. Notify the Architect of any observed conflicts or omissions between the requirements indicated for this project and the ADA/ ABA Guidelines.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING:

- A. General: Deliver, store and handle products in accordance with the manufacturer's recommendations. Prevent damage, deterioration and loss, including theft.
- B. Delivery: Schedule delivery to avoid long-term storage at the site and to prevent overcrowding of construction and storage spaces.
 1. Deliver products to the site in the manufacturer's original packaging with labels and instructions for handling, storing, unpacking, protecting and installing.
- C. Inspection: Inspect products upon delivery to ensure that they comply with requirements, undamaged and properly protected.
- D. Storage: Store products at the site to facilitate inspection and quantity, as required.
 1. Store heavy products in a manner that will not endanger the supporting construction.
 2. Store products subject to damage by the elements above ground and under cover in a weather-tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions and as specified for conditioned space.

PART 2 - PRODUCTS

2.1 GENERAL PRODUCT REQUIREMENTS:

- A. General Product Requirements: Provide products that comply with the Contract Documents, undamaged and previously unused, unless otherwise specified or permitted.
 1. Provide products complete with all accessories, trim, finish, safety guards and other

- devices and details for complete installation, for the intended purpose and use.
2. Where available, provide standard product types that have been used successfully in similar projects and situations as approved by the Architect.
 3. As specified in Section 01420 - Reference Standards and Definitions and as specified in the individual specification sections, quantity and quality indicated represent minimum acceptable levels.

2.2 PRODUCT SELECTION PROCEDURES:

- A. Proprietary Specification Requirements: Where two or more products/ manufacturers are named, provide one of the products/ manufacturers indicated or an Architect approved equal through the substitution procedure prior to receipt of Bid. No substitutions will be permitted after award of the Contract except as provided in Section 01630 - Product Substitution Procedures.
 1. Quality Standards: Proprietary specifications are used only to denote the quality standard of the products desired and do not restrict Bidders to the specific brand, make or manufacturer specified. Proprietary specifications are used only to set forth and convey to prospective Bidders the general style, type, character and quality of the products desired. Equivalent products will be acceptable, but only with written prior approval as described in the Substitution Procedures.
- B. Reference Standards Specification Requirements: Where products are specified in accordance with an established standard, select any product that meets or exceed those standards; when reference standards are used in the individual specification sections the equivalent products shall comply and test to the same standards.
- C. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a manufacturer's name, a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
- D. Performance Specification Requirements: Where Specifications require compliance with performance requirements, with or without use of a manufacturer's name, products that comply with these requirements and are recommended by the manufacturer for the application indicated. Appropriate overall performance of a product is implied as the product is specified for a specific application.
- E. Compliance with Standards, Codes and Regulations: Where the Specifications require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified. This applies when Owner's established standards are specified. Refer to Section 01420 - Reference Standards and Definitions for additional provisions.
- F. Visual Matching: Where Specifications require matching an established Sampler to match existing, the Architect's decision will be final on whether a proposed product matches satisfactorily.
- G. Visual Selection: Where specified product requirements include the phrase "...as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, the Architect will select the color, pattern and texture from the manufacturer's standard range.

2.3 HAZARDOUS MATERIALS:

- A. Hazardous Materials: No products containing asbestos shall be used in the construction.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS:

- A. General: Anchor each product securely in place, accurately located, aligned and coordinated with other Work. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
 - 1. Inspection of Conditions: The Installer shall be required to inspect each major component, including but not limited to the substrate, conditions and complete assembly of components under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected.
 - 2. Visual Effects: Provide uniform joint width and arrange joints to obtain the best visual effect at exposed Work. Refer choices and options to the Architect for the final decision.
- B. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations to comply with all warranties, contact the Architect when manufacturer's instructions conflict with requirements contained in Contract Documents. Obtain Architect's determination in writing in case of apparent conflicts.
- C. Preliminary Procedures: Inspect products immediately upon delivery and again prior to installation. Remove damaged and defective items from the Project site.
 - 1. Verify measurements and dimensions, before conducting the pre-installation meeting and beginning each installation.
- D. Protection: Install each component during good weather conditions. Apply protective covering when required to ensure against damage and deterioration at Substantial Completion.
 - 1. Protect products and adjacent construction during and after installation, until acceptance. Prevent components damage, soiling, deterioration, harmful exposure and incompatible materials.
 - 2. Coordinate the erection of temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for inspecting and testing purposes.
- E. Attachment: Where mounting heights are not indicated, install components at standard mounting heights complying with all applicable codes and regulations. Refer uncertain mounting height determinations to the Architect for decision.
 - 1. Provide attachment, connection devices and methods necessary for securing work. Secure work true to line and level, allowing for thermal and building movement.
- F. Replacement and Repair: Promptly remove damaged, defective and non-conforming

products from the Project site and promptly replace with conforming new products.

1. Subject to the Architect's approval, damaged and defective products may be repaired to the condition equivalent to acceptable new products. Products that cannot be satisfactorily repaired shall be removed and replaced without additional cost to the Owner.
2. Replacement and repairs shall be made by the party responsible for the original installation.

END OF SECTION

SECTION 01630

PRODUCT SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SCOPE:

- A. Section Includes: Administrative and procedural requirements for handling product substitutions during bidding and after award of the Contract.

1.2 RELATED SECTIONS:

- A. Section 01631 - Substitution Request Form

1.3 LIMITATIONS ON SUBSTITUTIONS:

- A. Substitutions: Product substitutions will NOT be considered during bidding or after award of the Contract unless the “Substitution Request Form” is used. The form is included in this Project Manual as Section 01631 - Substitution Request Form.
 - 1. Substitutions will be acceptable only if the proposed substitute meets all specified requirements, including the manufacturer's specifications.
 - 2. Proposed substitutions must be approved by the Architect.
 - 3. Requests for substitutions may be accepted or rejected at the discretion of the Owner or Architect.
 - 4. By requesting a substitution, the Supplier or General Contractor warrants the following:
 - a. The proposed substitute is equal or superior in all respects, including but not limited to the following: warranties and guarantees, to the specified product or method.
 - b. No additional cost to the Owner or change in time will be involved unless stated in the request.
 - c. Necessary coordination with other work will be provided by the General Contractor.
- B. Exceptions: The following are not considered substitutions and are not subject to requirements specified in this section for substitutions:
 - 1. Revisions to Contract Documents requested by the Owner or Architect.
 - 2. Specified options on products and construction methods included in Contract Documents.

1.4 SUBMITTALS:

- A. Substitution Request Submittal: Requests for substitution will be considered only after compliance with the following:
- B. Submit one (1) copy (either electronically or hard copy) of each substitution request

including form (form shall be completed and signed by submitter, either supplier or general contractor).

C. Identify the product, the fabrication or installation method to be replaced, with references to Specification Section and Drawing numbers. Provide complete documentation for the proposed substitution including the following information, as appropriate:

1. Product Data, including manufacturer's printed recommendations for fabrication and installation.
2. Samples, as applicable or requested.
3. Provide comparison of the proposed substituted product, indicating significant qualities of the product originally specified. Significant qualities may include size, weight, durability, performance and visual effect.
4. Indicate changes or modifications to other parts of the Work necessary to accommodate the proposed substitution.
5. Effect on the Contractor's Construction Schedule and Contract Time.
6. Cost information in accordance with the procedures for Change Order proposals, if change in the Contract Sum is involved.

1.5 SUBSTITUTIONS REQUESTED DURING BIDDING:

A. No substitution will be considered prior to receipt of bids unless written request for approval has been received by the Architect at least 7 WORKING DAYS prior to the date for receipt of Bids. Such requests shall be submitted on the proper "Substitution Request Form" following this Section and described in as much detail as possible for review of request. The burden of proof of the merit of the proposed substitution is upon the proposer (either Supplier or General Contractor). The Architect's decision of approval or rejection of the proposed substitution shall be final.

1. The request will be automatically rejected unless the following conditions are met:
 - a. The request is submitted on the required "Substitution Request Form" following this Specification. The form shall be completed and signed by either the supplier or General Contractor.
 - b. Extensive revisions to Contract Documents are not required.
 - c. Proposed changes are in keeping with the general intent of Contract Documents.
 - d. The request is timely, fully documented and properly submitted.

B. If the Architect approves a proposed substitution prior to receipt of Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

1.6 SUBSTITUTIONS REQUESTED AFTER CONTRACT AWARD:

A. Conditions: The Architect's evaluation of the substitution requests made after Contract is awarded may include the following considerations:

1. The request is directly related to an "or equal" clause or similar language in the Contract Documents.
2. A substantial advantage offered to the Owner, in terms of cost, time, energy

- conservation or other considerations of merit, offsetting additional responsibilities to the Owner, which may include additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or separate contractors, increased operating and maintenance costs, or similar considerations.
3. The specified product or method of construction cannot be provided within the Contract Time. The request may not be considered if delay from use of the specified product or method results from failure to pursue the Work promptly or coordinate activities properly.
 4. The specified product or method of construction is not approved by a governing authority.
 5. The specified product or method of construction is not compatible with other materials.
 6. The specified product or method of construction cannot be coordinated with other materials.
 7. The specified product or method of construction cannot provide a warranty required by the Contract Documents.

1.7 **RESPONSE:**

A. Architect's Action: Within two (2) weeks of receipt of the request for substitution, the Architect will notify the Contractor of acceptance or rejection of the proposed substitution. If a decision on a proposed substitution is not made within the allotted time, use the product or method specified. Acceptance during Construction Phase will be by Change Order if change in Contract Time or Contract Sum is involved. The request will be rejected unless the following conditions are met:

1. Extensive revisions to Contract Documents are not required.
2. Proposed changes are in keeping with the general intent of Contract Documents.
3. The request is timely, fully documented and properly submitted.

1.8 **SUBMITTALS REQUIRED BY THE CONTRACT DOCUMENTS:**

- A. Non-Complying Submittals: Requests for substitution must be in accordance with requirements of this Section. The routine submittal of Shop Drawings, Product Data and Samples that represent construction not complying with the Contract Documents does not constitute a request for substitution.
- B. Required Submittals: Submittals specified in this Section do not take the place of submittals required in the specification Section under which the substitution is proposed, unless exemption from further submittals is stated in the approval.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

(Not Used)

**END OF SECTION
FORM FOLLOWS**

SECTION 01631

SUBSTITUTION REQUEST FORM

To: Burgdahl & Graves AIA Architects
2550 Belle Chasse Highway
Suite 130
Gretna, Louisiana 70053
Phone: (504) 366-4433, Fax: (504) 366-0102
eorgeron@burgdahlgraves.com and sgraves@burgdahlgraves.com

Project: Renovation to Live Oak Library
Waggaman, Louisiana

From: _____ **Date:** _____

Specified Item: _____
(Section Number) (Page Number)(Paragraph) (Description)

We believe that the following product is equal or superior to the specified product in appearance, durability, performance, and in every other respect, and we hereby submit it for your consideration as a substitute for the specified item for the above-mentioned project:

A. Proposed Substitution: _____

B. Reason for Substitution: _____

C. COSTS (*Construction Phase Only* - Provide complete breakdown of costs including the cost amount to be DEDUCTED from the Contract Sum if the proposal substitution is accepted. Include documentation for both materials and labor): _____

D. SCHEDULE (*Construction Phase Only* - Describe substitution's affect on construction schedule):

E. Supporting Data:

1. Product Data: Attach complete technical data, including laboratory tests, if applicable.
2. Installation: Include complete information on changes to Drawings and/or Specifications describing the steps that the proposed substitution will require for its proper installation.
3. Samples: Submit with request all necessary samples and substantiating data clearly marked to prove equal quality and performance to that which is specified.

F. List ways in which the proposed substitution affects dimensions shown on Drawings:

G. List effects of proposed substitution on other trades: _____

H. List ways in which proposed substitution would be affected by applicable code requirements and agency approval: _____

I. List differences between proposed substitution and specified item: _____

J. **Manufacturer's warranties** of the proposed and specified items are: _ Same ___ Different
Explain: _____

K. List information on availability of maintenance service and source of replacement materials: _____

L. Certification of, and Assumption of Liability for, Equivalent Performance:
The undersigned states that the function, appearance and quality of the proposed substitution is equivalent or superior to the specified item and **is in full compliance with the Contract Documents and applicable regulatory requirements.** FAILURE TO PROVIDE SIGNED SUBSTITUTION REQUEST WILL RESULT IN AUTOMATIC REJECTION OF PROPOSED SUBSTITUTION

If Submitted By Supplier

Signature

Telephone

Date

Email

Facsimilie

If Submitted By General Contractor

Signature

Telephone

Date

Email

Facsimilie

A/ E's REVIEW AND ACTION (to be filled-in by Architect/ Engineer)

- Substitution Proposal Rejected** By: _____
- Because Not Complete** Date: _____
- Substitution Accepted** Remarks: _____
- Substitution Accepted as Noted** _____
- Substitution Rejected** _____
- Substitution Rejected Because** _____
- Request Received Too Late** _____

END OF SECTION

SECTION 01700

PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 **DESCRIPTION OF WORK:**

A. Work Included in This Section:

1. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
 - a. Inspection procedures
 - b. Project record document submittal
 - c. Operating and maintenance manual submittal
 - d. Submittal of warranties
2. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions 2 through 16.

1.2 **RELATED WORK:**

- A. Division 0 - General Conditions
- B. Division 0 – Supplementary Conditions to the General Conditions
- C. Section 01300 – Submittals
- D. Section 01420 – Reference Standards and Definitions
- E. Divisions 2 through 16

1.3 **SUBSTANTIAL COMPLETION:**

A. General:

1. The Work or designated portion thereof will not be considered suitable for Substantial Completion until all systems are operational as designed; all designated or required governmental inspections or certifications have been made and posted, designated instruction of Owner's personnel in the operation of systems has been completed, and all final finishes are in place. The project shall be complete for the intended use. All final "As-Built" Surveys shall be completed by the surveyor as specified in Divisions 0 and 1.
2. As a further condition of Substantial Completion, the General Contractor shall certify that all remaining work will be completed within 30 consecutive calendar days following the Date of Substantial Completion, and the failure to do so shall automatically reinstate the provisions for liquidated damages due the Owner as contained elsewhere in the Agreement or as provided by law for such period of time as may be required by the General Contractor to fully complete the work whether the Owner has occupied the work or not.

3. Upon Substantial Completion of the Work or designated portion thereof and upon application by the General Contractor and recommendation by the Architect, the Owner shall make payment, reflecting adjustment in retainage, if any, for such Work or portion thereof as provided in the Contract Documents.

B. Forms:

1. All forms to be used shall be American Institute of Architect (AIA) forms, unless noted otherwise.

C. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.

1. The General Contractor considers the Work, or a portion thereof which the Owner agrees to with no separation, is substantially complete, the General Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the General Contractor to complete all Work in accordance with the Bidding and Contract Documents.
2. Advise Owner of pending insurance change-over requirements
3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
5. Deliver tools, spare parts, extra stock, and similar items.
6. Make final change-over of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of change-over in security provisions.
7. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
8. Remove temporary facilities, construction equipment and temporary services. Restore disturbed items to original condition or better.
9. Complete final cleanup requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.
10. Submit an acceptable copy of the HVAC Test and Balance Reports.
11. Submit all Final Inspections Certificates along with a Use and Occupancy Certificate.

D. Inspection Procedures:

1. On receipt of a request for inspection for Substantial Completion, the Architect will either proceed with inspection or advise the General Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection, or advise the General Contractor of construction that must be completed or corrected before the certificate will be issued.
2. The Architect will repeat inspection when requested in writing by the General Contractor and assured that the Work has been substantially completed and all items that were incomplete have been corrected.

3. Results of the completed inspection will form the basis of requirements for final acceptance.

E. Re-inspection Procedure:

1. In the event that more than the two inspections by the Architect described above are made necessary by the failure of the General Contractor to complete the work, or to complete or correct items identified on the list of such items, the General Contractor shall reimburse the Owner for all costs incurred including the cost of the Architect's services made necessary thereby.
2. Upon completion of re-inspection, the Architect will prepare a Certificate of Substantial Completion, or advise the General Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for Substantial Completion.
3. If necessary, a CPR will be established for re-inspection and will be issued at the General Contractor's expense with the amount deducted from his Application For Payment.

1.4 FINAL ACCEPTANCE:

- A. At the completion of the Project prior to receiving final payment, the Contractor shall furnish the Owner, through the Architect, properly signed and notarized waivers of lien from all subcontractors employed and material suppliers furnishing materials for the Project. Such waivers shall be submitted before final payment will be certified by the Architect to the Owner (AIA G706A). Also at the completion of the contract, the Contractor shall provide documentation for the signature of the Owner and Contractor signifying the completion of the contractual obligation and the cancellation of the contract. This documentation shall be filed by the Contractor with the Recorder of Mortgages and proof of contract cancellation provided to the Owner. Upon completion of these items, final payment shall be due to the Contractor.

B. Preliminary Procedures:

1. Before requesting final inspection for final payment, complete the following (list exceptions in the request):
 - a. Submit a copy of the Architect's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Architect.
 - b. Submit record drawings, maintenance manuals, final project photographs (if any), and similar final record information.
 - c. Submit Consent of Surety to Final Payment (AIA G707).
 - d. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - e. Guarantees, Warranties and Bonds.
 - f. Keys and Keying Schedule.
 - g. Spare parts and Maintenance Materials.
 - h. Certificate of Insurance for Products and Completed Operations.
 - i. Certificate of Occupancy, if required.

- j. All remnants required by the Contract Documents.
- k. Any other items as required by the Architect and/or Owner.

1.5 RECORD DOCUMENT SUBMITTALS:

A. General:

1. The Contractor shall record on the Record Drawings maintained at the site all changes and selections made during construction and shall locate by dimensions showing actual field measurements of all major items which will be concealed in the completed work. These items shall include underground piping and conduit beneath slabs-on-grade, underground site utilities such as pipe, conduit, storm drainage, sewer, gas, water, medical gases, oil, and telephone, etc. and items above hard ceilings such as duct, pipe, etc. Elevations are to be established at fifty foot intervals and that all changes in direction using bench marks or finish floor elevations.
2. Dimensions are to be taken from face of building lines to centerline of piping or conduit.
3. The General Contractor will accurately locate all under floor services at slab on grade areas by dimension from building line or column centerlines. Elevations are to be established from finish floor lines.
4. Where new lines cross existing installed lines, the location, size and type of line crossed shall be accurately recorded.
5. Where tie-ins to existing floor lines are indicated the elevation of the tie-in point and dimensioned location shall be recorded.
6. Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Architect's reference during normal working hours.

B. Record Drawings:

1. Record drawings shall be provided in the form of reproducible drawing sheets (reproducible bond) and reflect changes in the work and locations of concealed items for all trades including plumbing, mechanical, electrical and general construction. Bond prints of the original contract documents may be purchased from the Architect at the Architect's standard printing rate.
2. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown.
3. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
4. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
5. Note related Change Order numbers where applicable.

C. Record Specifications:

1. Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show variations in actual Work performed in comparison with the text of the Specifications and modifications.
2. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data.
3. Upon completion of the Work, submit record Specifications to the Architect for the Owner's records.

D. Shop Drawings:

1. Deliver General Contractor's approved copy of all shop drawings submitted during the course of the project.

E. Miscellaneous Record Submittals:

1. Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Architect for the Owner's records.

1.6 MAINTENANCE MANUAL AND INSTRUCTIONS:

- A. General Contractor shall, prior to completion of Contract, deliver to the Architect three (3) copies of a manual, assembled, indexed, and bound; presenting for the Owner's guidance, full details for care and maintenance of mechanical, electrical, and other equipment included in Contract. Manuals shall include parts lists for each item of equipment furnished under the Contract.
- B. General Contractor shall, for this manual, obtain from Subcontractors, literature of manufacturers relating to equipment, including motors; also furnish cuts, wiring diagrams, instruction sheets, and other information pertaining to same that will be useful to Owner in overall operation and maintenance. Include also, the name, address, and phone number of the nearest sales and service organization for each item.
- C. General:
 1. Organize each manual into separate Sections for each piece of related equipment.
 2. Index all data as per the Table of Contents.
 3. As a minimum each manual shall contain a title page, a table of contents, copies of Product Data, supplemented by drawings and written text, and copies of each warranty, bond and service Contract issued.

D. Binders:

1. Identify each binder on the front and spine, with the typed or printed title "OPERATION AND MAINTENANCE MANUAL", Project title or name, and subject matter covered. Indicate the volume number for multiple volume sets of manuals.
2. The binders shall be hard-cover, three-ring notebook, embossed with the name of the project, spring-lock metal label holders, and piano hinge edges, (2" capacity) 11" x 8-1/2" with heavy duty rings. Provide the number of binders required to properly contain all information required.

E. Drawings:

1. Where drawings or diagrams are required as part of the manual, provide reinforced punched binder tabs on the drawings and bind in with the text.
2. Where oversize drawings are necessary, fold the drawings to the same size as the text pages and use as a fold-out.
3. If drawings are too large to be used practically as a fold-out, place the drawing, neatly folded, in the front or rear pocket of the binder. Insert a typewritten page indicating the drawing title, description of contents and drawing location at the appropriate location in the manual.

F. Protective Plastic Jackets:

1. Provide protective transparent plastic jackets designed to enclose diagnostic software for computerized electronic equipment if required.

G. Text Material:

1. Where written material is required as part of the manual use the manufacturer's standard printed material, or if it is not available, specially prepared data, neatly typewritten, on 8-1/2" by 11", 20 pound white bond paper.
2. Such data called for under separate Sections of the Specifications, shall be included in the manual described in this Section.

H. Title Page:

1. Provide a title page in a transparent plastic envelope as the first sheet of each manual. Provide the following information:
 - a. Subject matter covered by the manual.
 - b. Name and address of the Project.
 - c. Date of submittal.
 - d. Name, address, and telephone number of the General Contractor.
 - e. Name and address of the Architect.
 - f. Cross reference to related systems in other operating and maintenance manuals.

I. Table of Contents:

1. After the Title Page, include a typewritten table of contents for each volume, arranged systematically according to the Project Manual format. Include a list of each product included, identified by product name or other appropriate identifying symbol and indexed to the content of the volume.
2. Where more than one volume is required to accommodate data for a particular system, provide a comprehensive table of contents for all volumes in each volume of the set.

J. General Information:

1. Provide a general information Section immediately following the Table of Contents, listing each product included in the manual, identified by product name. Under each product, list the name, address, and telephone number of the Subcontractor or installer, and the maintenance contractor. Clearly delineate the extent of responsibility of each of these entities. In addition, list a local source for replacement parts and equipment.

K. Product Data:

1. Where manufacturer's standard printed data is included in the manuals, include only sheets that are pertinent to the part or product installed. Mark each sheet to identify each part or product included in the installation. Where more than one item in a tabular format is included, identify each item, using appropriate references from the Contract Documents. Identify data that is applicable to the installation and delete references to information that is not applicable.

L. Written Text:

1. Where manufacturer's standard printed data is not available, and information is necessary for proper operation and maintenance of equipment or systems, or it is necessary to provide additional information to supplement data included in the manual, prepare written text to provide necessary information. Organize the text in a consistent format under separate headings for different procedures. Where necessary, provide a logical sequence of instruction for each operating or maintenance procedure.

M. Warranties, Bonds and Service Contracts:

1. Provide a copy of each warranty, bond or service contract in the appropriate manual for the information of the Owner's operating personnel. Provide written data outlining procedures to be followed in the event of product failure. List circumstances and conditions that would affect validity of the warranty or bond.

1.7 INSTRUCTIONS:

- A. The Owner's delegated representative shall be given personal instructions by trained personnel, in the care, use, maintenance, and operation procedures for each item. This shall be done in accordance with, and in addition to, the above required manual.

B. Operating and Maintenance Instructions:

1. Arrange for each installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:
 - a. Maintenance manuals.
 - b. Record documents.
 - c. Spare parts and materials.
 - d. Tools.
 - e. Identification systems.
 - f. Control sequences.
2. As part of instruction for operating equipment, demonstrate the following procedures:
 - a. Start-up.
 - b. Shutdown.
 - c. Emergency operations.
 - d. Noise and vibration adjustments.
 - e. Safety procedures.
 - f. Economy and efficiency adjustments.
 - g. Effective energy utilization.

C. Maintenance Procedures:

1. Provide information detailing essential maintenance procedures, including the following:
 - a. Routine operations.
 - b. Trouble-shooting guide.
 - c. Disassembly, repair and reassembly.
 - d. Alignment, adjusting and checking.

D. Operating Procedures:

1. Provide information on equipment and system operating procedures, including the following:
 - a. Start-up procedures.
 - b. Equipment or system break-in.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Instructions on stopping.
 - f. Shut-down and emergency instructions.
 - g. Summer and winter operating instructions.
 - h. Required sequences for electric or electronic systems.
 - i. Special operating instructions.

E. Servicing Schedule:

1. Provide a schedule of routine servicing and lubrication requirements, including a list of repaired lubricants for equipment with moving parts.

F. Controls:

1. Provide a description of the sequence of operation and as-installed control diagrams by the control manufacturer for systems requiring controls.

G. Coordination Drawings:

1. Provide each General Contractor's Coordination Drawings.
2. Provide as-installed color-coded piping diagrams, where required for identification.

H. Valve Tags:

1. Provide charts of valve tag numbers, with the location and function of each valve.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01710

FINAL CLEANING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK:

A. Work Included In This Section:

1. The Section specifies administrative and procedural requirements for final cleaning at Substantial Completion.
2. Special cleaning requirements for specific elements of the Work are included in appropriate Sections of Divisions 2 through 16.

B. Single Prime Contract:

1. The Contractor for General Construction is responsible for coordination of final cleaning.

C. Environmental Requirements:

1. Conduct cleaning and waste disposal operations in compliance with all laws and ordinances. Comply fully with federal and local environmental and anti-pollution regulations.
2. Burning or burying of debris, rubbish or other waste material on the premises shall not be permitted.

PART 2 - PRODUCTS

2.1 MATERIALS:

A. Cleaning Agents:

1. Use cleaning materials and agents recommended by the 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:

1. Employ experienced workers or cleaners for final cleaning. Clean each surface or unit of Work to the condition expected from a professional building cleaning and maintenance program. Comply with manufacturer's instructions.

2. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion for the entire Project or a portion of the Project:
 - a. Clean the Project site, yard and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste materials, litter and foreign substances. Sweep paved areas broom clean. Remove petrochemical spills, stains and other foreign deposits. Rake grounds that are neither planted nor paved, to a smooth even-textured surface.
3. Remove tools, construction equipment, machinery and surplus material from the site.
4. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original condition.
5. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics and similar spaces.
6. Broom clean concrete floors.
7. Vacuum clean carpet and similar soft surfaces, removing debris and excess nap. Shampoo if required strictly following manufacturer's written instructions.
8. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
9. Remove labels that are not permanent labels.
10. Touch-up and otherwise repair and restore marred exposed finishes and surfaces. Replace finishes and surfaces that can not be satisfactorily repaired or restored, or that show evidence of repair or restoration.
11. Carefully, remove all paint over "UL" and similar labels, including mechanical and electrical nameplates. All labels shall be like new and readable.
12. Wipe surfaces of mechanical and electrical equipment, elevator equipment and similar equipment. Remove excess lubrication, paint and mortar droppings and other foreign substances.
13. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
14. Replace air disposable filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grilles. Clean ducts, blowers, and coils if units were operated without filters during construction.
15. Clean food service equipment to a sanitary condition, ready and acceptable for its intended use.
16. Clean light fixtures, lamps, globes and reflectors to function with full efficiency. Replace burned out bulbs, and defective and noisy starters in fluorescent and mercury vapor fixtures.
17. Leave the Project clean and ready for occupancy.

END OF SECTION

SECTION 01740

WARRANTIES AND BONDS

PART 1 - GENERAL

1.1 **DESCRIPTION OF WORK:**

A. Work Included In This Section:

1. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.
2. Specific requirements for warranties for the Work and products and installations that are specified to be warranted are included in the individual Sections of Divisions 2 through 16.
3. Certifications and other commitments and agreements for continuing services to Owner are specified in the Contract Documents.

B. Disclaimers and Limitations:

1. Manufacturer's disclaimers and limitations on product warranties do not relieve the General Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign warranties with the General Contractor.
2. At no time shall any warranties/ guarantees be submitted to the Owner for this project which supercedes or voids any of the Owner's rights as established by the State's General Statutes for which the project is located.
3. Failure of the General Contractor and/ or its suppliers, manufacturers and its sub-contractors to enter into such warranties as required by the Contract Documents shall be considered a breach of contract.

1.2 **WARRANTY REQUIREMENTS:**

A. Related Damages and Losses:

1. When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work. Do not reuse damaged materials.

B. Assignment:

1. All warranties/ guaranties of any systems and products shall be assigned to the Owner.

1.3 SUBMITTALS:

A. Written Warranties:

1. Submit written warranties to the Architect prior to the date certified for Substantial Completion. The Architect's Certificate of Substantial Completion designates a commencement date for warranties.
2. Prepare a written document utilizing the appropriate form, ready for execution by the General Contractor, or the General Contractor and subcontractor, supplier or manufacturer.
3. Refer to individual Section of Division 2 through 16 for specific content requirements, and particular requirements for submittal of special warranties.

B. Form of Submittal:

1. At Final Completion compile three (3) copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the Table of Contents of the Project Manual. Deliver all warranties to the Architect before or with the Request for Substantial Completion.

C. Reinstatement of Warranty:

1. When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement.
2. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

D. Replacement Cost:

1. Upon determination that work covered by a warranty has failed, replace or rebuild the work to an acceptable condition complying with requirements of Contract Documents.
2. The General Contractor is responsible for the cost of replacing or rebuilding defective work regardless of whether the Owner has benefitted from use of Work through a portion of its anticipated useful service life.

E. Owner's Recourse:

1. Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.

F. Rejection of Warranties:

1. The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.1 **FORMS FOR WARRANTIES:**

- A. General Contractor and Manufacturer shall fill out forms attached to end of this document. Do not use forms included herein, however photocopies may be made.

END OF SECTION{ TC \12 "END OF SECTION}

GENERAL BUILDING GUARANTEE\ TC \12 "GENERAL BUILDING GUARANTEE

DATE: _____ { TC \13
"DATE: _____ }
(DATE OF SUBSTANTIAL COMPLETION)

STATE OF _____

PARISH OF _____

The _____ (Name of Contractor) hereby guarantees all

products and workmanship incorporated in the _____ (Name of

Project) _____ (Location), against defect for a period of 12 months for the General Guarantee as set forth in the General Conditions. This guarantee is binding where defects occur due to normal usage conditions and does not cover willful or malicious damage, damage caused by acts of God, or other casualty.

Respectfully submitted this _____ day of _____, 20 _____
by:

(Name of Firm or Corporation making bid)

By: _____

Title: Owner, Partner, or Corp. President or Vice President

WITNESS:

(Proprietorship Or Partnership)

ATTEST:

(Surety Company)

By: _____

Title: _____

BY: _____

(Attorney in Fact)

TITLE: _____

(Corp. Sec., or Assist. Sec.)

Name and Address of Surety Agency

WATER TIGHTNESS GUARANTEE\ TC \12 "WATER TIGHTNESS GUARANTEE}

DATE: _____ { TC \13
"DATE: _____ }
(DATE PROJECT ACCEPTED BY THE OWNER)

STATE OF _____

PARISH OF _____

The _____ (Name of Contractor)

for _____ (Name of Project)

_____ (Location) shall guarantee for a period of 24 months that the work of his Contract shall be watertight and leak-proof at every area, except where leaks can be attributed to damage to the Work by external forces beyond his control. He shall, immediately upon notification by the Owner of water penetration, determine the source of water penetration and, at his own expense, do any work necessary to make the Work of his Contract watertight and leak-proof. He shall also, at his own expense, repair or replace any other damaged material, finishes, and furnishings, damaged as a result of this water penetration.

Respectfully submitted this _____ day of _____, 20 _____
by:

(Name of Firm or Corporation making bid)

By: _____

Title: Owner, Partner, or Corp. President or Vice President

WITNESS:

(Proprietorship or Partnership)

ATTEST: _____
(Surety Company)

By: _____

Title: _____
(Attorney in Fact)

BY: _____

TITLE: _____
(Corp. Sec., or Assist. Sec.)

Name and Address of Surety Agency

DIVISION

2

SITework

SECTION 02110

DEMOLITION

PART 1 - GENERAL

1.1 **SCOPE:**

A. The scope of this Section shall include all demolition and/ or removal work as necessary to prepare the site and building for new construction. This shall include all demolition/ removal shown on the drawings AND as necessary to accomplish the work under this contract (whether specifically indicated or not). See all drawings and all other related sections of the specifications for additional direction.

1. Specifically note requirements as set forth in the Division 0 and Division 1 documents as bound in the Project Manual.

1.2 **SUMMARY:**

A. This section includes, but is not limited to, the following:

1. Demolition and removal of existing building construction as indicated on drawings.
2. All other miscellaneous associated demolition and removal work as shown and as otherwise required.

1.3 **RELATED SECTIONS:**

- A. Section 01040 – Project Coordination/ Contractor’s Use Of Premises
- B. Divisions 2 thru 16 – Specific technical demolition requirements

1.4 **DEFINITIONS:**

- A. Demolish: Completely remove and legally dispose of off-site.
- B. Recycle: Recovery of demolition waste for subsequent processing in preparation for reuse.
- C. Salvage: Owner shall have salvage rights to all wanted items and materials.

1.5 **MATERIALS OWNERSHIP:**

- A. Unless otherwise indicated, demolition waste becomes the property of the General Contractor.

1.6 **SUBMITTALS:**

- A. Qualification Data: Certification and license information from licensed tradesmen.
- B. Schedule of Demolition Activities: Indicate the following:
 1. Detailed sequence of demolition work, with starting and ending dates for each activity.

2. Temporary interruption of utility and hvac services.

1.7 QUALITY ASSURANCE:

A. Pre-demolition Conference: Conduct meeting at Project Site with Owner, Architect, General Contractor and associated subcontractors present. Review methods and procedures related to demolition including, but not limited to, the following:

1. Inspect and discuss conditions of construction to be demolished.
2. Review and finalize demolition schedule.
3. Review and finalize protection requirements.
4. Review procedures for noise and dust control.
5. Review procedures for building protection.
6. Review items, if any, to be salvaged and returned to Owner.

1.8 PROJECT CONDITIONS:

A. Building will not be occupied during project demolition and construction. Conduct demolition so operations of adjacent sites will not be disrupted.

1. Provide not less than 72 hours' notice of activities that will affect operations of adjacent buildings and/ or sites.
2. Maintain access to existing drives, walkways, exits, etc. of adjacent facilities and sites.
 - a. Do not close or obstruct drives, walkways, exits or other facilities used by occupants of adjacent sites without written permission from authorities having jurisdiction.

1.9 SAFETY AND COORDINATION:

A. The safety of site occupants and the public in general during any demolition procedure is of primary importance.

B. The General Contractor shall be required to visit the site of the project, and shall assume full responsibility for all existing conditions which may affect (or be affected by) work included in his contract.

1. Coordinate location of existing streets, structures, elements, utilities (exposed and subsurface), and all other built conditions scheduled to remain, and fully protect during course of construction.
2. Repairs to any existing conditions (on or off-site) and construction damaged during course of work under this contract shall be the responsibility of the General Contractor, at no additional cost to the Owner. Match existing conditions, details, fit and finish.

PART 2 - PRODUCTS

2.1 REUSED MATERIALS:

- A. Existing removed materials and components may be reused only where specifically noted in Contract Documents.

2.2 SALVAGE MATERIALS:

- A. All demolition items, including, but not limited to, the following: building components; materials; equipment; fixtures; interior finishes; etc. shall remain the property of the Owner. These items shall be stored in a secure and protected area of the site. Any salvage items not claimed by the Owner's representative shall become the property of the General Contractor, who shall remove same from site in a timely manner at no additional cost. Coordinate with Owner and Architect.
 - 1. General Contractor to submit list of salvageable demolition items to Owner, who will review and advise which items shall be stored for pick-up.

PART 3 - EXECUTION

3.1 PROTECTION:

- A. General Contractor shall provide for the proper protection of all persons, property, landscaping, building elements, utilities, etc., both onsite and offsite, in accordance with requirements of these specifications and all prevailing codes and ordinances.
- B. Take all precautions to protect users of site and general public from demolition procedures. Install barriers, fences, partitions, covered passageways, etc. as required to protect on and off site occupants and to prevent entry of unauthorized persons into work areas.
- C. Conduct operations in such a manner as to avoid interference with the use of, or passage to and from, adjacent facilities. Do not block fire lanes and other means of egress.
- D. All debris, excess fill, demolition and construction materials, etc., shall be hauled away from the site on a periodic basis at the General Contractor's cost. Temporary storage of demolition trash shall be maintained in an approved on-site area, with location to be coordinated with the Owner in advance. Burning of waste material is not permitted.
- E. General Contractor shall be responsible for protecting any existing utilities interfering with construction. Coordinate with Owner, Architect, and Utility Owner prior to proceeding.

3.2 DEMOLITION:

- A. All demolition and removal work, as indicated on the drawings AND as necessary to accomplish the new work, shall be included in the Contract and shall be carried out in a neat and workmanlike manner.
 - 1. It is possible that not all required demolition and/ or removal work is specifically shown in the drawings, but it is the intent of these specifications that all demolition and/ or removal be performed where necessary to build a complete project as outlined

in the Contract Documents, at no additional cost to Owner. Bidders shall inspect existing conditions prior to submitting bid, and include all costs in bid.

3.3 DUST CONTROL:

- A. Provide all measures as necessary to prevent movement of airborne dust into adjacent building spaces and properties. Full clean-up of spaces affected by demolition shall be done by General Contractor's forces on a daily basis.
- B. General Contractor shall utilize enclosed trash chutes to transfer demolition materials into dumpsters. Seal joints in chutes, cover dumpster tops, utilize water misting, and provide other measures as necessary to control and limit airborne dust.
- C. Building interiors and exterior concrete surfaces affected by dust generated by this project (sidewalks, drives, parking areas, etc.) shall be maintained in a broom clean condition.

3.4 SHORING AND BRACING:

- A. When working in and around existing buildings, the design, installation, use, and removal of temporary shoring and bracing for existing and new walls, floors, structure, etc. shall be the sole responsibility of the General Contractor, who is also responsible for project sequencing, construction methods and techniques, etc. Project sequencing shall be coordinated with the Owner.

END OF SECTION

DIVISION

5

METALS

SECTION 05500

METAL FABRICATION

PART 1 - GENERAL

1.1 **SCOPE:**

- A. The extent of miscellaneous metal work is shown on drawings and includes items fabricated from iron and steel shapes, plates, bars, pipes and castings which are not a part of structural steel or other metal systems in other sections of these specifications. It shall include all labor, materials and equipment necessary for complete installation of all components and accessories.
- B. The types of miscellaneous metal items, and pre-manufactured assemblies, systems and products include, but are not limited to, the following:
 - 1. Fasteners
 - 2. Miscellaneous framing and supports

1.2 **RELATED WORK:**

- A. Section 06100 – Rough Carpentry
- B. Section 07900 – Sealants
- C. Section 09900 - Painting

1.3 **QUALITY ASSURANCE:**

- A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible. Do not delay job progress; allow for trimming and fitting wherever taking field measurements before fabrication might delay work.

1.4 **SUBMITTALS:**

- A. Shop Drawings: Submit shop drawings for fabrication and erection of miscellaneous metal assemblies, including pre-engineered/manufactured items. Include plans and elevations at not less than 1" to 1'-0" scale and include details of sections and connections at not less than 3" to 1'-0" scale. Show anchorage and accessory items. Provide templates for anchor and bolt installation by others.
- B. Samples: Submit powder coat samples for architect color selection and approval.

PART 2 - PRODUCTS

2.1 **MATERIALS AND COMPONENTS:**

- A. Metal Surfaces, General: For fabrication of pre-engineered systems and miscellaneous metal work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.

1. Steel shall conform to the latest edition of the ASTM Standard Specifications A36, entitled "Structural Steel."
2. Steel Plates, Shapes and Bars: ASTM A36.
3. Steel Bars and Bar-Size Shapes: ASTM A306, Grade 65, or ASTM A36.
4. Formed Steel Sheet: ASTM A569.
5. Gray Iron Castings: ASTM A48, Class 30.
6. Steel Tubing: Cold-formed, ASTM A500B and A513.
7. Steel Pipe: ASTM A53; Type and grade selected by fabricator as required for design loading.
8. Reinforcing Bars: ASTM A615, Grade 40, deformed.
9. Non-Shrink Non-Ferrous Grout: CE CRD C588.

2.2 FASTENERS:

- A. General: Use materials same as or compatible with metal being connected. Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required.
- B. Bolts and Nuts: Regular hexagon head type, ASTM A307, Grade A, with ASTM A563 hex nuts and flat washers.
- C. Lag Bolts: Flat-head carbon steel, FS FF-S-111.
- D. Expansion Bolts: USM "Parabolt", Bed Head "Sleeve Anchors", Hilti "Kwik-Bolt", or similar expanding shield type anchor bolt, galvanized or stainless steel.
- E. Brackets, Flanges and Anchors: Cast or formed metal of same type material and finish as supported items, unless otherwise indicated.

2.3 MISC. FRAMING & SUPPORTS:

- A. Provide and install all steel lintels, misc. framing, and supports as necessary to set and anchor other components of the work. Size as required for anticipated dead and live loading. Coordinate as required by manufacturer of installed item.
- B. Framing Connectors: Wood framing connectors shall be as recommended by Simpson Strong-Tie (or approved equal) for the specific framing conditions of this project, in full accordance with all codes having jurisdiction.

2.4 FABRICATION - GENERAL:

- A. Workmanship:
 1. Use materials of size and thickness shown or, if not shown, of required size and thickness to produce strength and durability in finished product. Work to dimensions shown or reviewed on shop drawings, using proven details of fabrication and support. Use type of materials shown or specified for various components of work.
 2. Steel shall be fabricated in accordance with the current edition of the specifications adopted by the American Institute of Steel Construction. All shop connections are to be welded unless otherwise noted. Field connections may be welded or bolted. Joints are to be designed to support one-half the uniform load capacity of the member for the given span and will be in accordance with the latest specifications of the American Institute of Steel Construction for framed connections.

- a. Holes shall not be made or enlarged by burning.
3. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32" unless otherwise shown. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
4. Weld corners and seams continuously, complying with AWS recommendations. Grind exposed welds smooth and flush to match and blend with adjoining surfaces.
 - a. Welding electrodes for manual shielded metal-arc welding shall conform to AWS A5.1 or A5.5 E70XXX welding electrodes and flux used in submerged arc process shall conform to AWS A5.17 F7X-EXXX. Use low hydrogen electrodes for A572 steel.
5. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of Phillips flat-head (countersunk) screws or bolts, when sizing and connection loads allow.
6. Provide for anchorage for type of construction shown, coordinated with supporting structure. Fabricate and space anchoring devices as required to provide adequate support for intended use.
7. Cut, reinforce, drill and tap miscellaneous metal work as required to receive finish hardware and similar items.

B. Galvanizing:

1. Provide a zinc coating for those items exposed to the exterior and where indicated on the drawings as follows:
 - a. ASTM A153 for galvanizing iron and steel hardware.
 - b. ASTM A123 for galvanizing rolled, pressed and forged steel shapes, plates, bars and strip, 0.0125" thick and heavier.
 - c. ASTM A386 for galvanizing assembled steel products.

PART 3 - EXECUTION

3.1 INSTALLATION:

- A. General: Set metal fabrications accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels. Brace temporarily or anchor temporarily in formwork where work is to be built into concrete, masonry or similar construction.
- B. Anchor securely as shown or as required for the intended use, using concealed anchors wherever possible.
- C. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal items to in-place constructions, including threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws and other connectors as required.
- D. Cutting, Fitting and Placement: Perform cutting, drilling and fitting required for installation of miscellaneous metal items. Set work accurately, in location, alignment and

elevation, plumb, level, true and free of rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are built into concrete, masonry or similar construction.

- E. Fit exposed connections accurately together to form tight, smooth hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind joints smooth and touch-up shop paint coat. Do not weld, cut or abrade the surface to exterior units which have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.
- F. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made and methods used in correcting welding work.
- G. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.
- H. Galvanizing Repair: For galvanized surfaces clean welds, bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A780.

3.2 MANUFACTURED ITEMS - GENERAL:

- A. Install manufactured items in strict accordance with manufacturer's written instructions. Comply with details and approved shop drawings.
- B. Provide and install all materials, components, and accessories as required for a complete and fully operational installation.

3.3 COMPLETION:

- A. Completed metal work shall be securely anchored, free from rattles and excessive vibration during use. Items shall be plumb, level, straight and properly aligned. Exposed grouting shall be neat, uniform, and without holes and gaps.
- B. Joints shall be snug-fitting and uniform; exposed welds shall be ground smooth and touch-up, and free of crevices, spatter and flux. Bolts, screws, nuts and other threaded fasteners shall occur only where permitted, and shall be drawn up tightly but not over-tightened; exposed heads and nuts shall be undamaged.
- C. Remove, adjust and re-install, or remove and replace with new material, items which are not in compliance due to improper installation and materials, and items which are defective and damaged.
- D. Clean finished surfaces which are soiled and marked by metal work installation. Remove and replace other materials which cannot be cleaned and those which are damaged by metal work installation.

END OF SECTION

DIVISION

6

WOOD & PLASTICS

SECTION 06100

ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SCOPE:

- A. The scope of rough carpentry work in this project shall be as shown on drawings and as specified herein. It shall include all labor, materials and equipment necessary for complete installation. Rough carpentry shall include, but not limited to, the following:

1. Wood framing, blocking, grounds, and nailers
2. Wood furring
3. Plywood
4. Connectors, rough hardware, and all accessories and components

1.2 QUALITY ASSURANCE:

- A. Lumber to comply with PS 20 and National Grading Rules, except as otherwise indicated.
1. Provide dressed lumber, S4S, with 19 percent maximum moisture content at time of dressing and shipment, for sizes 2" or less in nominal thickness.
- B. Plywood to comply with PS 1/ ANSI A199.1 and APA grade trademarks.
- C. Factory mark each piece of lumber and plywood with grade stamp of inspection agency showing compliance with referenced standards.

1.3 DELIVERY, STORAGE, AND HANDLING:

- A. Deliver wood products bundled or crated to provide adequate protection during transit and job storage, with required grade marks clearly identifiable. Inspect wood products for damage upon delivery. Remove and replace damaged materials.
- B. Keep materials under cover and dry. Protect from weather and contact with damp or wet surfaces. Stack lumber, plywood, and other panels. Provide for air circulation within and around stacks, and under temporary coverings.
1. For lumber and plywood pressure treated with waterborne chemicals, place spacers between each bundle to provide air circulation.
- C. Protect sheet materials during handling to prevent breaking corners and damage to surfaces.

1.4 JOB CONDITIONS:

- A. Installer must examine the substrates and supporting structure and the conditions under which the carpentry work is to be installed and notify the Contractor and Architect in writing of conditions detrimental to the work. Do not proceed with the installation until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.
- B. Coordination: Fit carpentry work to other work; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds and similar supports to allow proper

attachment of other work.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL:

- A. Lumber: Voluntary Product Standard PS 20, “American Softwood Lumber Standard”, current edition as published by U.S. Department of Commerce, and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with applicable rules of any rule writing agency certified by the American Lumber Standards Committee (ALSC) Board of Review. Lumber design values are to comply with ASTM D245 and ASTM D2555.
- B. Grade Stamps: Provide lumber with each piece factory marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grade agency, grade, species, moisture content at time of surfacing, and mil.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece or omit grade stamps and provide grade compliance certificates issued by inspection agency.
- C. Where nominal sizes are indicated, provide actual sizes required by PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dress sizes for dry lumber.
 - 1. Provide dressed lumber, S4S, unless otherwise indicated.
 - 2. Provide lumber with 19 % maximum moisture content at time of dressing for 2 inch nominal (38 mm actual) thickness or less, unless otherwise indicated.

2.2 WOOD TREATMENT:

- A. Wood Preservative Treated Wood Products:
 - 1. Preservative Treatment: Comply with the applicable requirements of the American Wood Protection Association (AWPA). Mark each treated item to comply with the AWPA Standardized product mark requirements. This mark shall bear the AWPA Standard, AWPA Use Category, Preservative name and code, Preservative retention, Inspection Agency Logo, and Manufacturer name and location.
 - 2. Pressure-treat above-ground items with waterborne preservatives complying with AWPA Standard U1. Treat indicated job specific items, including, but not limited to the following, in accordance with AWPA Use Category Designations:
 - a. Wood nailers, blocking, stripping and similar members in connection with roofing, flashing, vapor barriers and waterproofing.
 - b. Wood sills, blocking, furring, stripping and similar concealed members in contact with masonry, concrete and steel.
 - c. Wood framing members set on concrete slab.
 - d. Use treated lumber for wall furring strips.
 - 3. Fasteners: Provide stainless steel or appropriate coated fastener. Do **not** allow

aluminum or steel to have contact with pressure preservative wood.

4. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

2.3 LUMBER:

- A. Nominal sizes are indicated, except as shown by detail dimensions. Provide actual sizes as required by PS 20, for the moisture content specified for each use.
 1. Provide dressed lumber, S4S, surfaced four sides
 2. Provide kiln-dried lumber 19% maximum moisture content at time of dressing (lumber 2" or less in nominal thickness), and shall be stamped "S-DRY", "KD", or "MC15"
- B. Framing Lumber (2" through 4" thick): Provide No. 2KD or better of the following species:
 1. Douglas Fir (WCLB or WWPA)
 2. Southern Yellow Pine (SPIB), with tight knots only
- C. Wood Grounds, Nailers and Blocking: Provide No. 2KD or better of Southern Yellow Pine (SPIB) or Douglas Fir (WCLB or WWPA). Refer to wood treatment specifications for conditions where pressure treated wood shall be utilized.

2.4 PLYWOOD:

- A. General: Plywood thicknesses are as shown on drawings. Plywood exposed to high humidity shall have an "Exposure 1" exposure durability rating. Uncoated exterior located plywood and plywood exposed to steam shall have an "Exterior" exposure durability rating.

2.5 ACCESSORIES:

- A. Rough Hardware: Provide and install all rough hardware and metal fastenings as shown on drawings, specified herein, or required for proper installation of carpentry and millwork. Nails, spikes, screws, bolts, and similar items shall be of sizes and type to rigidly secure members in place. Applicable Federal Standards are as follow:
 1. Nails: FS FF-N-105; SD, 13-1/2 gauge cement coated flat head nails, 1-5/8" long for drywall work
 2. Tacks: FS FF-N-103
 3. Wood Screws: FS FF-S-111
 4. Bolts: ASTM A307, Grade A (Hex head)
 5. Nuts: ASTM A563 (Hex nut)
 6. Washers: ASTM A563
 7. Lag Screws or Lag Bolts: FS FF-S-111
 8. Masonry Anchoring Devices: See Sections 04200 and 05500
 9. Toggle Bolts: FS FF-B-588.
 10. Bar or Strap Anchors: ASTM A575 carbon steel bars.
- B. Framing Connectors: Wood framing connectors shall be as recommended by Simpson Strong-Tie (or approved equal) for the specific framing conditions of this project, in full

accordance with all codes having jurisdiction.

PART 3 - EXECUTION

3.1 INSTALLATION - GENERAL:

- A. Fit carpentry work to other work. Scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds as necessary for proper attachment of related work.
- B. All wood framing shall be cut square, closely fitted, accurately set to levels, and permanently secured in place, employing nails, bolts, or spikes as large as suitable for the conditions.
- C. Discard units of material with defects which might impair the quality of the work and units which are too small to fabricate the work with minimum joints or the optimum joint arrangement.
- D. Set carpentry work accurately to required levels and lines, with members plumb and true and accurately cut and fitted.
- E. Securely attach carpentry work to substrates by anchoring and fastening as shown and as required by recognized standards. Countersink nail heads on exposed carpentry and fill holes. Use common wire nails, except as otherwise indicated. Use finishing nails for finish work. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting of wood; pre-drill as required.
- F. Install metal connectors and accessories as required by code and wherever recommended by connector manufacturer (Simpson Strong-Tie) and good standard practice of the industry for a complete and structurally sound job.

3.2 WOOD GROUNDS, NAILERS AND BLOCKING:

- A. Provide wherever shown and where required for screeding or attachment of other work. Form to shapes as shown and cuts required for true line and level of work to be attached. Coordinate location with other work involved.
- B. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise shown. Anchor into masonry with fasteners of suitable size and spacing to carry imposed loads.
- C. Provide adequate solid blocking (or furring) to support all surface mounted items, including, but not limited to, wall hung equipment, cabinets, grab bars, railings, toilet accessories, fixtures, trims, moldings, etc. Provide adequate framing, secured to structure, to support ceiling mounted fixtures.

3.3 WOOD FRAMING:

- A. Framing Standard: Comply with AFPA's "Manual for Wood Frame construction", unless otherwise indicated.
- B. Install framing members of size and at spacing indicated.
- C. Do not splice structural members between supports.
- D. Arrange studs so that wide face of stud is perpendicular to direction of wall or partition and narrow face is parallel.

1. Provide single bottom plate and double top plates using members of 2 inch nominal thickness whose widths equal that of studs; except single top plate may be used on non-load-bearing partitions. Nail or anchor plated to supporting construction, unless otherwise indicated.
 2. Provide stud sizes as shown, spaced 16" o.c. (unless otherwise indicated).
- E. Construct corners and intersections with three (3) or more studs. Provide miscellaneous blocking and framing as shown, and as required to support facing materials, fixtures, specialty items, and trims.
1. Provide continuous horizontal blocking at mid-height of single story partitions over 96 inches high and multistory partitions, using members of 2 inch nominal thickness and of same width as wall or partition.
- F. Frame openings with multiple studs and headers. Provide nailed header members of thickness equal to width of studs. Set headers on edge and support jamb studs.
1. For non-load bearing partitions, provide double jamb studs with headers not less than 4 inch nominal depth for openings 36 inches and less in width, and not less than 6 inch nominal depth for wider openings.
 2. For load bearing walls, provide double jamb studs for openings 72 inches and less in width, and triple jamb studs for wider openings. Provide headers of depth shown as indicated on Contract Documents.
- G. Provide bracing in exterior walls and at interior load bearing walls (that are not more than 25 feet from other parallel braced walls) at each end and at not more than 25 feet apart, to comply with IBC Section 2308.9.3 "Bracing" and IBC Table 2308.9.3(1).

3.4 PLYWOOD:

- A. Installation of all plywood shall comply with APA recommendations with respect to rough hardware, clips, spacings, and sheet layout for each type application.
1. General: Plywood shall have all joints fully supported by solid wood or metal framing. Nailing patterns shall be in accordance with APA recommendations for each plywood application.
 2. Exterior Plywood Substrate: Install and prepare as recommended in accordance with industry standards.

3.5 MISC. ITEMS:

- A. Scaffolding: Scaffolding necessary for the proper construction of interior and exterior work shall be furnished and erected, constructed in a thoroughly substantial manner, and providing

all requisite safeguards for the protection of life and limb. Meet all requirements as set forth in OSHA.

END OF SECTION

SECTION 06200

FINISH CARPENTRY

PART 1 - GENERAL

1.1 **SCOPE:**

- A. The scope of finish carpentry work in this project shall be as shown on drawings and as specified herein. It shall include all labor, materials and equipment for complete installation. Finish carpentry shall consist of exposed wood and plastic fabrications, including, but not limited to, the following:
1. Exposed wood millwork, moldings, trims, etc.
 2. Solid surface counter work.
 3. Hardware for carpentry.
 4. Definitions: “Exposed”, “Semi-Exposed”, and “Concealed” as used in this Section to describe surfaces and materials shall be as defined in AWI “Architectural Woodwork Standards” (current edition).
 5. Refer to Section 06100 – Rough Carpentry and Section 09260 – Gypsum Wall Board for blocking, furring, shims, hanging strips, etc.

1.2 **RELATED SECTIONS:**

- A. Section 06100 – Rough Carpentry
- B. Section 07900 – Sealants
- C. Section 09260 – Gypsum Wall Board
- D. Section 09900 – Painting

1.3 **QUALITY ASSURANCE:**

- A. Standards: Maintain the following standards for the fabrication, finishing, and installation of finish carpentry work.
1. Architectural Woodwork Institute AWI: Architectural Woodwork Standards, current edition
 2. ANSI/ BHMA A156.9: Cabinet Hardware
 3. NEMA LD3: High Pressure Decorative Laminate Standard
 4. ISSFA-2, Classification and Standards Publication of Solid Surfacing Material
 5. ANSI Z124-3 for vanities and Z124-6 for kitchen sinks
 6. NSF Standard 51 for use in both splash and food service areas
 7. ASTM G21 Fungal Resistance, Method [A] [B], no growth
 8. ASTM G22 Bacterial Resistance, no growth
 9. Stain Resistance, ANSI Z124-6-5.2 1997
- B. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate product similar to those required for this Project and whose products have a record of successful in-service performance. Shop is a certified participant in AWI’s Quality

Certification Program.

- C. Single Source Responsibility: Arrange for production by a single firm of architectural woodwork.
- D. Installer Qualifications: Installer shall be a fabricator of products and a certified participant in AWI's Quality Certification Program.
- E. AWI Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Standards" (AWS) for grades on interior architectural woodwork, finish carpentry, construction, finishes, and other requirements.
 - 1. The Contract Documents contain selections chosen from options in the quality standard and additional requirements beyond those of the quality standard. Comply with such selections and requirements in addition to the quality standard.
- F. Pre-installation Conference: General Contractor shall coordinate pre-installation meeting with Architect and subcontractor in compliance with requirements as indicated within Divisions 0 and 1.
 - 1. Review the locations of backing required for finished carpentry installation as shown on approved shop drawings.
 - 2. Maintain indoor temperature and humidity within the range recommended by the AWI Architectural Woodwork Standards for the location of this project.
- G. Field Coordination: General Contractor to coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of work specified in other sections to insure that interior finish carpentry can be supported and installed as indicated within Contract Documents.

1.4 SUBMITTALS:

A. Submittals: Provide the following:

- 1. Product Data: Manufacturer's specifications and recommendations of components and accessories for finish carpentry.
- 2. Certification: Provide woodwork fabricator's certification that the woodwork, plastics, and adhesives proposed for use complies with quality grades and other requirements indicated. Provide technical literature for all prefabricated casework.
- 3. Shop Drawings: Submit shop drawings showing location of each item, dimensioned plans and elevations, large scale details, attachment devices, operating hardware, and individual components. Indicate fastening methods and jointing details. Provide drawings on all millwork, casework, counter tops, finish carpentry, etc. Show locations of required blocking, furring, hanging brackets, etc.

B. Samples: Provide the following:

- 1. Trims, Moldings, Etc.: Provide sample of each type used in job.
- 2. Solid Surfacing: Provide 12" square sample panel of solid surfacing showing a typical butt joint seam, and counter top detail (splash, front edge, thermalforming, etc.).

1.5 JOB CONDITIONS:

- A. Do not install finish carpentry items until required temperature and humidity have been stabilized and will be maintained in the installation areas. Do not deliver woodwork until painting, wet work, grinding, and similar operations that could damage, soil, or deteriorate woodwork has been completed.
- B. Installer must examine the substrates and supporting structure and the conditions under which the carpentry work is to be installed and notify the Contractor and Architect in writing of conditions detrimental to the work. Do not proceed with the installation until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.
- C. Coordination: Fit carpentry work to other work; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds, etc. to allow proper attachment of carpentry work.
- D. Field Measurements: Where finish carpentry is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrications, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
 - 1. Locate concealed framing, blocking, furring, reinforcements, etc. that support finish carpentry by field measurements before enclosed, and indicate measurements on Shop Drawings.

1.6 DELIVERY, STORAGE, AND HANDLING:

- A. Protection: Protect finish carpentry during transit, delivery, storage, and handling to prevent damage, soiling, and deterioration.
- B. Delivery: Do not deliver finish carpentry until painting, wet work, grinding, and similar operations that could damage, soil, or deteriorate finish carpentry have been completed in installation areas.
- C. Storage: Store items at project site in installation spaces where possible. If finish carpentry must be stored in other installation areas, store only in areas whose environmental conditions meet requirements specified herein.

1.7 SCHEDULING:

- A. Coordinate fabrication, delivery, and installation with the General contractor and other applicable trades to ensure maintenance of construction schedule.

PART 2 - PRODUCTS:

2.1 SOLID SURFACING:

- A. Solid surfacing shall be as manufactured by the following approved manufacturers:
 - 1. Hanwha Surfaces – Hanex Solid Surfaces
 - a. Price Group: Classics (Solo, Duo, Trio, Palazzo, Constellation)

2. Wilsonart International – Wilsonart Solid Surface – Gibraltar Solid Surface Series
 - a. Price Group: 3
 3. Formica Corporation – Formica Solid Surfacing
 - a. Price Group: C, Solid Elements; Basic Elements; Traditions, Classics
 4. Prior Approved Equal
- B. Solid surfacing shall be a homogenous blend of resins manufactured in flat panels.
- C. Coordinate with salvaged sinks and new faucets per drawings.
- D. Panel Thickness: 1/2" (12.7 mm) nominal
- E. Edge Profile: 1/8" rounded edge
- F. General Standards:
1. Approved by NSF International in Class 51 for both “Slash Zone” and “Food Zone” areas.
 2. UL Class 1 (A) Fire Rating, with Flame Spread less than 25 and Smoke Developed less than 25.
- G. Colors: To be selected by Architect from manufacturer’s full range of available colors and patterns from Price Group as specified above.
1. Contractor to figure multiple solid surface colors for millwork from manufacturer’s full range of colors from above listed series.
- H. Finish: Matte or satin finish as selected by Architect.
- I. Back Splashes: Butt joint, height shall be as indicated on drawings
- J. Front Edges: Edges as shown on drawings

2.2 WOOD SHAPES AND TRIMS:

- A. Construction: AWI AWS Custom Grade.
- B. Interior Wood For Opaque Finish: Unless otherwise noted, shall be AWI Grade II for exposed and Grade III for semi-exposed portions.
1. Lumber: Birch, Basswood, Gum, or other close-grained hardwood species as selected and approved by Architect, at the manufacturer's option or unless otherwise indicated.
 - a. Opaque finished trims, and other millwork items (where finished opaque), may be finger jointed. All millwork items shall be sanded on all exposed faces and edges, showing no tool marks, raised grain, or other surface deformities. See drawings for shapes, profiles, and sizes.
- C. Interior Wood For Transparent or Stained Transparent Finish: Unless otherwise noted, shall be AWI Grade II.

1. Lumber: To match existing adjacent wood species and cut (verify on job).
 - a. Transparent or Stained Transparent finished trims, and other millwork items (where finished clear), shall be plain sawn, and shall not be finger jointed. All millwork items shall be sanded on all exposed faces and edges, showing no tool marks, raised grain, or other surface deformities. See drawings for shapes, profiles, and sizes.
- D. Milled Items: Wood frames, trims, etc. called out in drawings as "milled" shall be milled to the actual dimensions as shown within drawings. Opaque or stained and/ or transparent coat finish as selected by Architect. Submit sample of finish as requested by Architect for review and approval.

2.3 ACCESSORIES:

- A. Furnish and install all concealed and exposed nails, screws, adhesives, panel clip systems and other accessories as required to assemble and secure the Work.

PART 3 - EXECUTION

3.1 EXAMINATION:

- A. Verification of Built Conditions: Verify that mechanical, electrical, plumbing and other building components affecting work within this section are in place and complete.

3.2 INSTALLATION - GENERAL:

A. Quality Standards:

1. Install woodwork to comply with AWI Architectural Woodwork Standards, current edition, for same grade specified above for type of woodwork involved.
2. Follow product Manufacturer's written recommendations and guidelines for all aspects of roughing-in, preparation, installation, and finishing of items specified under this Section.

B. Fit carpentry work to other work. Scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds as necessary for proper attachment of related work.

C. Should any woodwork type or finish be in question, bring to Architect's attention prior to bidding for clarification.

D. All concealed wood surfaces to be back primed before installation.

E. Condition woodwork to average prevailing humidity conditions in installation areas prior to installing.

3.3 TRIMS, MOLDINGS, ETC. INSTALLATION:

- A. Install all work in conformance with the AWI Architectural Woodwork Standards, latest edition.

1. Installation shall conform to the AWI AWS Grade of the items being installed.
- B. Install with a minimum number of joints possible, using full-length pieces (from maximum length of lumber available), to the greatest extent possible.
- C. Cope/ miter trim, moldings, and base at angle or corner intersections.
- D. All work shall be secured in place, square, level, and plumb.
- E. All work abutting building components shall be properly scribed.
- F. Mechanical fasteners used at exposed and semi-exposed surfaces, excluding installation attachment screws and those securing cabinets end to end, shall be countersunk. Heads of exposed nailing in surfaces to be stained or painted shall be sunk for face putty, other fastening shall be concealed where possible.

3.4 SOLID SURFACING COUNTER WORK:

- A. All aspects of solid surfacing work, including substrate rough-in, panel installation, seaming, finishing, sealing, etc. shall be done in strict accordance with product Manufacturer's written guidelines and recommendations. Finished appearance shall be monolithic in nature, with uniform rounded edges and curved surfaces, and no detectable seams lines nor variations in color, texture, etc.
- B. Anchor counter tops (solid surfacing) securely to base units and other support systems as indicated. Provide back splashes at all tops, and end splashes where counters abut fixed walls, equipment, etc.
 1. Provide solid framing to support counters for anticipated live and dead loads over open spans.
 2. Continuously seal joints where counters meet walls (sealant colors to match counter material).

3.5 ADJUSTMENT AND CLEANING:

- A. Fill and retouch all nicks, chips, scratches, and repair damaged and defective finish carpentry work where possible to eliminate defects functionally and visually; where not possible to repair, replace finish carpentry components. Adjust joinery for tight, uniform appearance.
- B. Remove soil, stains, scratches and foreign matter from all finish carpentry items.
- C. Adjust all moving and operating parts to function smoothly and correctly.

3.6 CLEANUP:

- A. Upon completion of installation, clean all installed items of pencil and ink marks, and broom clean the area of work, removing all debris into approved containers coordinated with General Contractor.

END OF SECTION

DIVISION

7

THERMAL & MOISTURE
PROTECTION

SECTION 07310

ARCHITECTURAL ASPHALT SHINGLES

PART 1 – GENERAL

1.1 **SCOPE:**

- A. The scope of asphalt shingle roofing work shall be as shown in the drawings and as specified herein. It shall include, but not be limited to, the following:
 - 1. Asphalt roofing shingles
 - 2. Leak barrier and roof deck protection
 - 3. Associated roofing products over existing plywood sheathing.

1.2 **COORDINATION:**

- A. Roofer shall coordinate work of this Section with that of Section 07600 Flashing and Sheet Metal to insure a complete and waterproof roofing installation. Coordinate roof penetrations with mechanical, electrical, and other trades and provide flashing as required for watertightness.

1.3 **RELATED SECTIONS:**

- A. Section 06100 – Rough Carpentry
- B. Section 07600 – Flashing and Sheet Metal

1.4 **REFERENCES:**

- A. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- B. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- C. ASTM B 370 - Standard Specification for Copper Sheet and Strip for Building Construction.
- D. ASTM D 3018 - Standard Specification for Class A Asphalt Shingles Surfaced with Mineral Granules.
- E. ASTM D 3161 - Standard Test Method for Wind-Resistance of Asphalt Shingles (Fan-Induced Method).
- F. ASTM D 3462 - Standard Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules.
- G. ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.
- H. ASTM D 7158 - Standard Test Method for Wind Resistance of Sealed Asphalt Shingles (Uplift Force/Uplift Resistance Method).
- I. ASTM E 903 - Standard Test Method for Solar Absorptance, Reflectance, and Transmission of Materials Using Integrating Spheres. Underwriters Laboratories (UL) - Roofing Systems and Materials Guide (TGFU R1306).
- J. UL 790 - Tests for Fire Resistance of Roof Covering Materials.
- K. UL 997 - Wind Resistance of Prepared Roof Covering Materials.

- L. UL 2218 - Impact Resistance of Prepared Roof Covering Materials.
- M. Asphalt Roofing Manufacturers Association (ARMA).
- N. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA)
- Architectural Sheet Metal Manual.
- O. National Roofing Contractors Association (NRCA).
- P. American Society of Civil Engineers (ASCE).

1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

- Q. U.S. Green Build Council (USGBC).
- R. Energy Star.
- S. Cool Roof Rating Council (CRRC).
- T. Miami Dade County.

1.5 DEFINITIONS:

- A. Roofing Terminology: Refer to ASTM D1079 and the glossary of the National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual for definitions of roofing terms related to this section.

1.6 SUBMITTALS:

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including but not limited to shingles, underlayment, and leak barrier, showing compliance with requirements.
- C. Selection Samples: Two complete sets of color cards representing manufacturer's full range of available colors and patterns.
- D. Manufacturer's installation instructions, showing required preparation and installation procedures.

1.7 QUALITY ASSURANCE:

A. Manufacturer Qualifications:

- 1. Company specializing in manufacturing the roofing system products specified in this section, with minimum of 25 years' experience.
- 2. Provide all roofing products from a single manufacturer.

- B. Installer Qualifications: Installer must be approved by manufacturer for installation of all roofing products to be installed under this section.

1.8 REGULATORY REQUIREMENTS:

- A. Provide a roofing system achieving an Underwriters Laboratories (UL) Class A fire classification.
- B. Install all roofing products in accordance with all federal, state, and local building codes.
- C. All work shall be performed in a manner consistent with current OSHA guidelines.

1.9 PRE-INSTALLATION MEETING:

- A. Pre-installation meeting shall take place not more than 2 weeks after the start of the project and before start of roofing installation.
- B. Contractor shall set up meeting time with certified roofing installer, manufacturer's representative, Owner, Architect, and GC in attendance.
- C. Review all pertinent requirements for the project, including but not limited to, scheduling, weather considerations, project duration, and requirements for the specified warranty.

1.10 DELIVERY, STORAGE, AND HANDLING:

- A. Store products in manufacturer's unopened labeled packaging until ready for installation.
- B. Store products in a covered, ventilated area, at temperature not more than 110 degrees F (43 degrees C); do not store near steam pipes, radiators, or in sunlight.
- C. Store bundles on flat surface to maximum height recommended by manufacturer; store rolls on end.
- D. Store and dispose of solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.11 WEATHER CONDITIONS:

- A. Proceed with work only when existing and forecasted weather conditions will permit work to be performed in accordance with manufacturer's recommendations.

1.12 WARRANTY:

- A. The roofing contractor shall issue, at completion of project, a written 2 year warranty, covering labor and materials, guaranteeing complete roofing system against leaks, including sheet metal work, ridge cap, flashing at penetrations, etc. Shingles shall have manufacturer's standard 40 year limited warranty.

PART 2 – PRODUCTS

2.1 MANUFACTURERS:

A. Acceptable Manufacturers:

- 1. Basis Of Design: The materials and products specified herein are as manufactured by GAF
- 2. Prior Approved Equal, pending specific product compliance with this specification by Architect.

2.2 SHINGLES:

- A. Self-sealing, granule surfaced, asphalt shingle with a strong fiberglass reinforced Micro Weave® core and StainGuard® protection, which prevents pronounced discoloration from blue-green algae through formulation/unique blends of granules.

Architectural laminate styling provides a wood shake appearance with a 5 5/8 inch exposure. UL 790 Class A rated with UL 997 Wind Resistance Label; ASTM D 7158, Class H; ASTM D 3161, Type 1; ASTM D 3018, Type 1; ASTM D 3462; AC438; CSA A123.5-98; Dade County Approved, Florida Building Code Approved, Texas Department of Insurance Approved, ICC Report Approval.

1. Timberline Select 40 Shingles by GAF.

a. Color: To be selected by Architect from manufacturer's full line of available colors.

2.3 HIP AND RIDGE SHINGLES:

A. High profile self-sealing hip and ridge cap shingle matching the color of selected roof shingle. Each bundle covers approx. 20 lineal feet (6.10m).

1. Timbertex Premium Ridge Cap Shingles by GAF.

2.4 STARTER STRIP:

A. Self-sealing starter shingle designed for premium roof shingles. Each bundle covers approx. 100 lineal feet (30.48m) for English and metric shingles or 50 lineal feet (15.24m) for oversized shingles.

1. WeatherBlocker Eave/Rake Starter Strip by GAF.

2.5 LEAK BARRIER:

A. Self-adhering, self-sealing, bituminous leak barrier surfaced with fine, skid-resistant granules. Approved by UL, Dade County, ICC, State of Florida and Texas Department of Insurance. Each roll contains approx. 150 sq ft (13.9 sq.m.), 36" X 50' (0.9m x 20.3m) or 200 sq ft (18.6 sq.m.), 36" X 66.7' (0.9m x 20.3m).

1. WeatherWatch Leak Barrier by GAF.

2.6 SHINGLE UNDERLAYMENT:

A. Synthetic, non-asphaltic, non-woven, anti-skid back coated, polypropylene constructed non-breathable underlayment. Meets or exceeds ASTM D226 and D4869 approved by UL, Florida Building Code, ICC and CSA A220.1. Each roll contains approximately 10 squares (1000 gross sq. ft.) of material and is 48 in. x 250 ft. (14.6 m x 76.2 m).

1. Tiger-Paw Roof Deck Protection by GAF.

2.7 ROOFING CEMENT:

A. Roofing Cement: Asphalt Plastic Roofing Cement meeting the requirements of ASTM D 4586 Type I or II.

2.8 ROOFING ACCESSORIES:

A. Exterior acrylic rust resistant aerosol roof accessory paint. Each 6 oz. can is available in boxes of 6 and in a wide variety of colors to compliment the roof.

1. Shingle-Match Roof Accessory Paint by GAF

2.9 NAILS:

A. Standard round wire, zinc-coated steel or aluminum; 10-12 gauge, smooth, barbed or deformed shank, with heads 3/8 inch to 7/16 inch in diameter. Length must be sufficient to penetrate into solid wood at least 3/4 inch or through plywood or oriented strand board by at least 1/8 inch.

2.10 METAL FLASHING:

A. Metal Flashing: See Flashing and Sheet Metal Section 07600.

PART 3 – EXECUTION

3.1 EXAMINATION:

- A. Shingle installer is responsible for thorough inspection of existing roof sheathing and other roof related installations. Do not proceed with work over unacceptable sheathing conditions. Commencement by roofer shall be considered an acceptance on his part of work by other associated trades.
- B. Do not begin installation until roof deck has been properly prepared.
- C. If roof deck preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION:

- A. Remove all existing roofing (including fasteners) down to the roof deck.
- B. Verify that the deck is dry, sound, clean and smooth. It shall be free of any depressions, waves, and projections. Cover with sheet metal, all holes over 1 inch (25mm) in diameter, cracks over 1/2 inch (12mm) in width, loose knots and excessively resinous areas.
- C. Replace damaged deck with new materials.
- D. Clean deck surfaces thoroughly prior to installation of eaves protection membrane and underlayment.
- E. At areas to receive leak barrier, fill knot holes and cracks with latex filler.
- F. Install crickets on the upslope side of any curb located in the north, on a roof steeper than 6:12, or wider than 24 inches (610 mm).
- G. Verify that the deck is structurally sound and free of deteriorated decking. All deteriorated decking shall be removed and replaced with new materials.
- H. Contractor shall coordinate locations of new fasteners with existing fastening patterns so as to fully secure new roofing system into roof deck without puncturing electrical conduit that runs within roof insulation board.

3.3 UNDERLAYMENT INSTALLATION:

A. Install using methods recommended by manufacturer, and for high wind attachment in accordance with the International Building Code, whichever is greater.

1. High Wind Attachment: Underlayment shall be applied with corrosion-resistant fasteners in accordance with manufacturer's instructions. Fasteners are to be applied along the overlap at a maximum spacing of 36 inches on center.

B. Eaves:

1. Install eaves edge metal flashing tight with fascia boards; lap joints 2 inches and seal with plastic cement or high quality urethane sealant; nail at top of the flange.
2. On all roofs between 2/12 and 4/12 (low slopes) install leak barrier (eaves protection membrane) up the slope from eaves edge a full 36 inches or at least 24 inches beyond the interior "warm wall". Lap ends 6 inches and bond.

C. Roof Deck:

1. Install one layer of roof deck protection over entire area not protected by leak barrier at the eaves or valley. Install sheets horizontally lapped so water sheds, and nail in place.
2. On roofs sloped at more than 4:12, lap horizontal edges at least 2 inches and at least 2 inches over eave protection membrane.
3. On roofs sloped between 2:12 and 4:12, lap horizontal edges at least 19 inches and at least 19 inches over eaves protection membrane.
4. Lap ends at least 4 inches. Stagger end laps of each layer at least 36 inches.
5. Lap roof deck protection (underlayment) over leak barrier (valley protection) at least 6 inches.

D. Penetrations:

1. Vent pipes: Install a 24 inch square piece of eaves protection membrane (leak barrier) lapping over roof deck protection; seal tightly to pipe.
2. Vertical walls: Install eaves protection membrane (leak barrier) extending at least 8 inches up the wall and 12 inches on to the roof surface. Lap the membrane over the roof deck underlayment.
3. Curbs: Install leak barrier around entire curb extending at least 8 inches up the wall and 12 inches on to the roof surface lapping over roof deck protection.
4. Rake edges: Install metal edge flashing over leak barrier and roof deck protection; set tight to rake boards; lap joints at least 2 inches and seal with plastic cement; secure with nails.

3.4 INSTALLATION OF STARTER SHINGLES:

A. General:

1. Install in accordance with manufacturer's instructions and local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
2. Refer to application instructions for the selected starter strip shingles.

B. Placement and Nailing:

1. For maximum wind resistance along rakes & eaves, install any starter strip containing sealant or cement shingles to underlayment and each other in a 4" width of asphalt plastic roof cement.
2. Place starter strip shingles 1/4" – 3/4" over eave and rake edges to provide drip edge.
3. Nail approximately 1-1/2" – 3" above the butt edge of the shingle.
4. Rake starter course should overlap eave edge starter strip at least 3".

3.5 INSTALLATION OF SHINGLES:

A. General:

1. Install in accordance with manufacturer's instructions and requirements of local building code. When installation instructions and local building codes are in conflict, the more stringent requirements shall take precedence.
2. Minimize breakage of shingles by avoiding dropping bundles on edge, by separating shingles carefully (not by "breaking" over ridge or bundles), and by taking extra precautions in temperatures below 40 degrees F (4 degrees C).
3. Handle carefully in hot weather to avoid damaging shingle edges.

B. Placement and Nailing:

1. Secure with 6 nails per shingle; use number of nails required by manufacturer or by code, whichever is greater.
2. Placement of nails varies based on the type of shingle specified. Consult the application instructions for the specified shingle for details.
3. Nails must be driven flush with the shingle surface. Do not overdrive or under drive the nails.
4. Shingle offset varies based on the type of shingle specified. Consult the application instructions for the specified shingle for details.
5. Nails must be long enough to penetrate through plywood or OSB, or 3/4 inch (19 mm) into dimensional lumber.
6. Beginning with the starter strip, trim shingles so that they "nest" within the shingle located beneath it. This procedure will yield a first course that is typically 3 inch to 4 inch rather than a fully exposed shingle.
7. Laterally, offset the new shingles from the existing keyways, to avoid waves or depressions caused by excessive dips in the roofing materials.
8. Using the bottom of the tab on existing shingles, align subsequent courses.
9. Note: DO NOT install standard sized shingles (5inch exposure) over metric (5 5/8 inch exposure) shingles, as it will overexpose the shingles and reveal the nails. Use standard alignment methods to assure proper shingle placement.
10. Secure with 4, 5, or 6 nails per shingle per manufacturer's instructions or local

codes.

- C. Penetrations: All Penetrations are to be flashed according to manufacturer, ARMA and NRCA application instructions and construction details.

3.6 PROTECTION:

- A. Stage work progress so that traffic is minimized over completed roofing.
- B. Protect installed products until completion of project.
- C. Any roof areas that are not completed by the end of the workday are to be protected from moisture and contaminants.

3.7 CLEAN-UP:

- A. Remove all trash, debris, roofing nails, etc. and remove from site. Clean all adjacent surfaces of plastic cement or other deleterious materials caused by roofing operations.

END OF SECTION

SECTION 07460

CEMENTITIOUS BOARDS AND TRIMS

PART 1 – GENERAL

1.1 **SCOPE:**

- A. The scope of cementitious boards and trims in this project shall be as shown on drawings and as specified herein. It shall include all materials, equipment and labor as required for a complete weathertight installation. Cementitious siding work shall include, but are not limited to, the following:

- A. Fiber cement trim boards and accessories

1.2 **RELATED SECTIONS:**

- A. Section 06100 – Rough Carpentry
- B. Section 07600 – Flashing and Sheet Metal
- C. Section 07900 – Sealants
- D. Section 08553 – Aluminum-Clad Wood Fixed Frame Windows
- E. Section 09900 – Painting

1.3 **REFERENCES:**

- A. ASTM D3359 Standard Test Method for Measuring Adhesion by Tape Test, Tool and Tape.
- B. ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C

1.4 **SUBMITTALS:**

- A. Product Data: Provide manufacturer's data sheets, brochures, installation instructions, maintenance instructions, etc. for each component and accessory used in this system.
- B. Shop Drawings: Provide detailed drawings indicating job specific conditions and include context of materials. Shop drawings shall indicate all components and installation to adjacent materials.
- C. Selection Samples: Provide selection samples for each product specified. Provide manufacturer's color chips representing the full range of colors and patterns.
- D. Verification Samples: Provide actual 4 inches x 6 inches product sample for each product specified representing selected color and pattern.

1.5 **QUALITY ASSURANCE:**

- A. Manufacturer Qualifications: Manufacturer shall be capable of producing materials specified herein with a minimum of five (5) years' experience.
- B. Installer Qualifications: Installer who has completed projects of similar size and complexity with a minimum of five (5) years' experience.
- C. Mockup: Provide a mockup for evaluation and approval by Architect of surface

preparation techniques and application workmanship.

1. Finish area shall be designated by Architect.
2. Do not proceed with work until workmanship, color, and sheen are approved by Architect.
3. Refinish mockup area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING:

- A. Products shall be delivered in manufacturers sealed packaging with labels.
- B. Store products in manufacturer's unopened packaging until ready for installation.
- C. Store material on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheet material under cover and keep dry prior to installing.
- D. Store and dispose of solvent based materials, and materials used with solvent based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS:

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

1.8 WARRANTY:

- A. Product Warranty: Limited, non-pro-rated products warranty.
 1. Trim boards: 15 years
- B. Finish Warranty: Limited product warranty against manufacturing finish defects.
 1. When used for its intended purposes, properly installed and maintained according to manufacturer's published installation instructions, finish will be warranted for a period of 15 years from the date of Substantial Completion: will not peel; will not crack; and will not chip. Finish warranty includes the coverage for labor and material.
- C. Workmanship Warranty: Application limited warranty for 2 years.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

- A. Basis Of Design: The products and systems as specified herein are as manufactured by James Hardie Building Products, Inc.
- B. Acceptable Manufacturers: Other acceptable manufacturer's, pending specific approval of conformance with these specifications by the Architect, may include the following:
 1. Prior Approved Equal

2.2 TRIM/ FASCIA BOARDS:

- A. HardieTrim HZ10 Boards, 4/4 Smooth Boards SE as manufactured by James Hardie Building Products, Inc.
 - 1. Width: As indicated on drawings
 - 2. Texture: Smooth
 - 3. Length: Maximum length as manufactured
 - 4. Thickness: 3/4 inch

2.3 FASTENERS:

- A. Wood Framing Fasteners: Common corrosion resistant nails, type as recommended by manufacturer for specific project conditions.

2.4 FINISHES:

- A. Factory Primer: Provide factory applied universal primer.
 - 1. Primer: Factory primed by James Hardie
 - 2. Topcoat: Refer to Section 09900 - Painting

PART 3 - EXECUTION

3.1 EXAMINATION:

- A. Do not begin installation until substrates have been properly prepared.
- B. If framing preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Examine substrates for sound fastening ability and proper waterproofing. Notify General Contractor and Architect of any unsatisfactory conditions.

3.2 PREPARATION:

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. A water-resistive barrier shall be appropriately installed with penetration and junction flashing in accordance with manufacturer's recommendations.

3.3 INSTALLATION – TRIM BOARDS:

- A. Install materials in strict accordance with manufacturer's installation instructions. Install flashing around all openings.
- B. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate minimum 3/4 inch (19 mm) or full thickness of sheathing. Additional fasteners may be required to ensure adequate security.
- C. Place fasteners no closer than 3/4 inch (19 mm) and no further than 2 inches (51 mm) from side edge of trim board and no closer than 1 inch (25 mm) from end. Fasten

maximum 16 inches (406 mm) on center.

D. Seal gap with high quality, paintable caulk.

E. Fasten through overlapping boards. Do not nail between lap joints.

3.4 FINISHING:

A. Finish factory primed trim boards in accordance with paint manufacturer's written product recommendation and written application instructions. See Section 09900 – Painting.

3.5 PROTECTION:

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 07600

FLASHING AND SHEET METAL

PART 1 - GENERAL

1.1 **SCOPE:**

- A. The complete installation of sheet metal work, flashing, through-wall flashing and accessories as specifically detailed and as necessary to accommodate all roofing, wall and misc. conditions as called for in this project. This shall include, but not be limited to, the following:
 - 1. Sheet metal flashings, counterflashings, caps, hoods, wall and roof penetration flashings, etc. Also provide all cleats, clips, and accessories, as detailed in drawings and as required, for complete and weathertight installations.
 - 2. Lead flashing and other misc. metals as called for in drawings.

- B. Related Work Specified Elsewhere:
 - 1. Section 06100 – Rough Carpentry
 - 2. Section 07310 – Architectural Asphalt Shingles
 - 3. Section 07900 – Sealants
 - 4. Section 09900 – Painting

1.2 **QUALITY ASSURANCE:**

- A. General: Unless conflicting and more restrictive requirements are indicated, comply with standards and recommendations of the following industry standards:
 - 1. The written recommendations of the specified flashing and roofing system product manufacturers.
 - 2. N.R.C.A. "Roofing and Waterproofing Manual" and "Handbook of Accepted Roofing Knowledge". (Latest Edition).
 - 3. SMACNA "Architectural Sheet Metal Manual". (Latest Edition).

- B. Installer: In order to assure undivided responsibility and proper coordination with related work, subcontract associated work of Section 07600 to the installers of Asphalt Shingles, Section 07310.

1.3 **SUBMITTALS:**

- A. General: Comply with Division 0 and Division 1 requirements.
- B. Product Data: Submit manufacturer's technical product data, installation instructions and general recommendations for each specified sheet material and fabricated product. Include specifications for finish system.
- C. Samples: Submit 8 inch square samples of prefinished sheet materials, for verification of selected color.
- D. Shop Drawings: Show layout, profiles, methods of joining, methods of expansion control

and anchorage details, including flashings, caps, hoods, gutters, downspouts, etc., and provide layout at 1/4 inch scale and details at 3 inch scale. Coordinate with roofing submittal.

1.4 PROJECT CONDITIONS:

- A. Coordinate work of this section with related and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of work and protection of materials and finishes.
- B. Do not proceed with the installation of flashing and sheet metal work until curb and substrate construction, blocking, wall, and other construction to receive the work is completed.
- C. The Installer must examine the substrate and the conditions under which flashing and sheet metal work is to be performed and notify the Contractor and Architect in writing of unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.
- D. Contractor is responsible for providing all sheet metal and flashing work as required for complete and weather-tight installations at roofing, walls, and misc. conditions of the subject building, in accordance with the best standard practices of the industry.
- E. Details as shown on drawings generally cover typical conditions. They are not meant to be all inclusive. Conditions not specifically detailed shall be fabricated and installed in accordance with the reference standards indicated above.
- F. The Installer shall cooperate with roofing installers to secure watertight connections at drains and pipes passing through roofs or membranes. Flashings to be soldered to pipes wherever necessary or directed by referenced standards.

1.5 WARRANTY:

- A. Guarantee in writing that this work is free from defects in material and workmanship for a period of two (2) years after date of substantial completion and that all such defects discovered during this period shall be made good. Issue guarantee in conjunction with, and subject to the same conditions as, roofer's guarantee as required by Section 07310-Architectural Asphalt Shingles.

PART 2 - PRODUCTS

2.1 MATERIALS:

- A. Metal Fabrications, Trim, Flashings, Etc. - All Exposed Metal:
- B. Provide hot-dip galvanized sheet metal, complying with ASTM A 653/A 653M, G90/Z275, with the following factory-applied finish. Gauges of metal to be as shown in drawings (24 gauge minimum, if not specifically called out).
 - 1. General: Apply coating either before or after forming and fabricating items, as required by coating process and as required for maximum coating performance capability. Protect coating promptly after application and cure, by application of strippable film or removable adhesive cover, and retain until installation has been completed.

2. Fluoropolymer Coating: Shall be full strength Kynar 500 or Hylar 5000, applied by the Manufacturer on a continuous coil coating line, with a top side dry film thickness of 0.70 to 0.90 mil over 0.25 to 0.35 mil prime coat, to provide a total dry film thickness of 0.95 to 1.25 mil. Bottom side shall be coated with primer with a dry film thickness of 0.25 mil. Finish shall conform to all tests for adhesion, flexibility, and longevity as specified by the Kynar 500 finish supplier.
 3. Durability - Provide coating which has been field tested under normal range of weathering conditions for minimum of 20 years without significant peel, blister, flake, chip, crack or check in finish, and without chalking in excess of 8 (ASTM D 659), and without fading in excess of 5 NBS units (ASTM D 2244).
 4. Colors - As selected by Architect from full range of Manufacturer's available colors.
- C. Lead: TM B 749, Type L51121, copper-bearing sheet lead, minimum 4 lb./sq.ft. (0.0625-inch thick) except not less than 6 lb./sq.ft. (0.0937 inch thick) for burning (welding) unless otherwise indicated.
- D. Miscellaneous Materials: For metal work, provide the type solder and fasteners recommended by the producer of the metal sheets for fabrication and installation.
- E. Sealants: See Section 07900-Sealants.
- F. Bituminous Coating: Solvent-type bituminous mastic, nominally free of sulfur, compounded for 15-mil dry film thickness per coat.
- G. Felt: No. 30 asphalt impregnated felt paper.
- H. Metal Accessories: Provide sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of work, matching or compatible with material being installed, non-corrosive. Size and gauge shall be as required for performance, or as specifically noted.
- I. Drawbands - Stainless steel, with screw-clamp tightening device.
- J. Roofing Cement: ASTM D 2822, asphaltic.
- K. Asphalt Primer: ASTM D 41.

2.2 FABRICATION:

- A. General: Shop-fabricate work to greatest extent possible. Comply with details shown, and with applicable requirements of SMACNA "Architectural Sheet Metal Manual", roofing systems manufacturers' recommendations, and other recognized industry practices. Fabricate with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of the work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.
- B. Lengths: Fabricate sections up to 10 feet long in one piece. For sections over 10 feet long, use sheets as long as practicable.
- C. Seams: Fabricate nonmoving seams in sheet metal with standing seams. For metal other than aluminum, tin edges to be seamed, form seams, and solder.
- D. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used, or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1" deep, filled with mastic sealant (concealed within joints).
- E. Sealant Joints: Where movable, non-expansion type joints are indicated or required for

proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.

F. Cap Flashings: Shop fabricate to sizes and profiles indicated, complete with terminal and transition sections and mitered corners

1. Corners and Intersections: Mitered and soldered prefabricated units, at least 3 feet long on each leg.

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION REQUIREMENTS:

- A. Comply with manufacturer's instructions and recommendations for handling and installation of flashing and sheet metal work.
- B. Performance: Coordinate the work with other work for the correct sequencing of items which make up the entire roofing systems or systems of weatherproofing/waterproofing and rain drainage. It is required that the flashing and sheet metal work be permanently watertight and not deteriorate in excess of manufacturer's published limitations.

3.2 INSTALLATION OF METAL WORK:

- A. Comply with details and profiles as shown and comply with SMACMA "Architectural Sheet Metal Manual" recommendations for fabrication and installation of the work.
- B. Provide for thermal expansion of all exposed sheet metal work exceeding 15'-0" running length with expansion joint spacing as follows:
 - 1. Flashings and Counterflashings: Lap joint, 10'-0" maximum spacing, with 3" overlap.
- C. Conceal fasteners and expansion provisions wherever possible. Fold back edges on concealed side of exposed edges to form a hem.
- D. Expansion Joints In Metal: Provide 1/4" opening between sections, covered with 6" matching cover plate embedded in sealant. Provide 6" long, full width backup plate beneath sections at joints in caps.
- E. Support, anchor, and flash existing rain drainage (gutters) in a manner which will withstand thermal expansion stresses and full loading by water or ice, without damage, deterioration or leakage.
- F. Contractor must provide and install continuous edging strips (cleats) secured to wood blocking for anchoring vertical faces of all sheet metal items. Gauge shall be one gauge heavier than that of metal being secured. Cleat fasteners shall be secured into solid wood blocking, with sizes, spacing, and patterns as necessary to comply with wind resistance performance standards referenced above in Part 1.

3.3 PAINTING:

- A. All exposed metals that cannot be fabricated from prefinished metal shall be prepared and painted in accordance with Section 09900-Painting. Prior approval by Architect required.

3.4 CLEANING:

- A. Remove soil, stain and extraneous materials incidental to sheet metal work from adjacent surfaces. Replace work that cannot be cleaned.
- B. Remove foreign matter and clean sheet metal work to satisfactory conditions to receive specified finish.
- C. Repair any damaged sheet metal to match adjacent sheet metal work. Remove and replace damaged or defective work that cannot be satisfactorily repaired.

END OF SECTION

SECTION 07900

SEALANTS

PART 1 - GENERAL

1.1 **SCOPE:**

- A. The scope of sealant materials in this project shall be as shown on drawings and as specified herein. It shall include all materials, equipment and labor as necessary for complete installation. Provide the forms and types of sealant as required for project specific adjoining joint materials (interior and exterior) for watertightness and/ or airtightness.

1.2 **RELATED SECTIONS:**

- A. Section 05500 – Metal Fabrications
- B. Section 06200 – Finish Carpentry
- C. Section 07460 – Cementitious Boards and Trims
- D. Section 07600 – Flashing and Sheet Metal
- E. Section 08111 – Standard Steel Doors and Frames
- F. Section 08553 – Aluminum-Clad Wood Fixed-Frame Windows
- G. Section 09260 – Metal Stud and Gypsum Wallboard System
- H. Division 15 – Mechanical
- I. Division 16 - Electrical

1.3 **SUBMITTALS:**

- A. Product Data: Submit manufacturer's product specifications for each joint sealer product proposed, including instructions for joint preparation and sealer application.
- B. Samples: Submit color selection charts and samples of colors for selection by Architect from manufacturer's full color line.
- C. Test Reports: Coordinate with Sections 07811 - Cementitious Spray-Applied Fire Resistive Materials (where applicable) and 07840 - Firestopping (where applicable). For record purposes, for fire-resistive sealants (when used), provide test reports by an independent testing agency to confirm required fire resistance rating.
- D. Field Mock-Ups: Before starting permanent work, apply sealants to Architect selected joints for further verification of colors selected and to represent completed work for appearance, materials, and application.

1.4 **SYSTEM DESCRIPTION:**

A. Design requirements:

- 1. Design number of joints and joint widths for maximum of $\pm 25\%$ movement.
- 2. Design depth of sealant to be 1/2 width of joint.
 - a. Maximum Depth: 1/2 inch
 - b. Minimum Depth: 1/4 inch
 - c. Maximum Recommended Width: 1-1/2 inches

1.5 QUALITY ASSURANCE:

- A. Installer Experience: Engage an Installer who has successfully completed within the last three (3) years at least three (3) joint sealer applications similar in type and size to that of this Project.
- B. Single Source Responsibility: Obtain joint sealer materials from a single manufacturer for each different product required.
- C. Performance: Provide joint sealers that have been produced and installed to establish and maintain watertight and airtight continuous seals.

1.6 DELIVERY, STORAGE, AND HANDLING:

- A. Deliver products in original factory packaging bearing identification of product, manufacturer, and batch number. Provide Material Safety Data Sheets for each product.
- B. Store products in a location protected from freezing, damage, construction activity, precipitation, and direct sunlight per manufacturer's recommendations.
- C. Condition products to approximately 60°F to 70°F for use per manufacturer's recommendations.
- D. Handle products with appropriate precautions and care as stated on Material Safety Data Sheets.

1.7 JOB CONDITIONS:

- A. The Installer must examine the joint surfaces and backing and their anchorage to the structure and the conditions under which the joint sealer work is to be performed and notify the General Contractor of conditions detrimental to the proper and timely completion of the work and performance of the sealers. Do not proceed with the sealant work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.
- B. Weather Conditions: Do not proceed with installation of sealants under adverse weather conditions or when temperatures are below or above manufacturer's recommended limitations for installation. Proceed with the work only when forecasted weather conditions are favorable for proper cure and development of high early bond strength. Wherever joint width is affected by ambient temperature variations, install elastomeric sealants only when temperatures are in the lower third of manufacturer's recommended installation temperature range.

1.8 WARRANTY:

- A. Provide manufacturer's five (5) year standard material warranty.
- B. Include coverage for replacement of sealant materials which fail to achieve water tight seal, exhibit loss of adhesion or cohesion, or do not cure, provided sealant has been installed per manufacturer's recommendations.

PART 2 - PRODUCTS

2.1 MATERIALS - GENERAL:

- A. Colors: For exposed materials, provide color as selected by Architect from

manufacturer's full color lines. For concealed materials, provide the natural color which has the best overall performance characteristics.

- B. Compatibility: Before purchase of each required material, confirm its compatibility with each other adjoining material it will be exposed to in the joint system.
- C. Formulation: Where one-part, two-part and multi-part sealants are specified for the same sealant type, Installer has the option of selecting from the kinds specified.

2.2 MANUFACTURERS:

A. Approved Manufacturers, pending specific product approval by Architect, are as follows:

- 1. BASF The Chemical Co.
- 2. Dow Corning Corporation
- 3. Pecora Corp.
- 4. Tremco Manufacturing Co.
- 5. Sika Chemical Corporation
- 6. Specified Technologies Inc. (STI)
- 7. Hilti
- 8. Prior Approved Equal

2.3 SEALANTS:

A. Exterior Sealants:

- 1. Hybrid Sealant: High performance, low modulus, high movement, non-sag, fast curing, ready to use hybrid sealant. Complying with ASTM C920, Type S, Grade NS, Class 50; TT-S-001543A, Type II, Class A, non-sag; TT-S-00230C, Type II, Class A; USDA compliant. Sealants may include the following:
 - a. MasterSeal NP 100 by BASF
 - b. Dymonic FC by Tremco
 - c. DynaTrol I-XL Tru-White by Pecora
 - d. Prior Approved Equal

B. Interior Sealants:

- 1. Polyurethane Sealant: One component, high performance, non-priming, gun grade, elastomeric polyurethane sealant. Complying with ASTM C920, Type S, Grade NS, Class 35; TT-S-00230C, Type II, Class A; USDA compliant; and UL classified. Sealants may include the following:
 - a. MasterSeal NP 1 by BASF
 - b. Dymonic by Tremco
 - c. DynaTrol I-XL by Pecora
 - d. Prior Approved Equal

2.4 MISCELLANEOUS MATERIALS:

A. Joint Cleaner: Provide the type of joint cleaning compound recommended by the sealant

- or caulking compound manufacturer for the joint surfaces to be cleaned.
- B. Joint Primer/ Sealer: Provide the type of joint primer/ sealer recommended by the sealant manufacturer for the joint surfaces to be primed or sealed as required.
 - C. Bond Breaker Tape: Polyethylene tape or other plastic tape as recommended by the sealant manufacturer to be applied to sealant-contact surfaces where bond to the substrate or joint filler must be avoided for proper performance of sealant. Provide self-adhesive tape wherever applicable.
 - D. Sealant Backer Rod: Compressible closed cell rod stock of polyethylene; "Closed-Cell Backer Rod and Soft-Baker Rod" (Sonneborn Building Products), "Ethaform" (Dow Corning Corp.), "Minicel" (Haveq Industries) or prior approved equal; or open cell polyurethane (Denver Foam) or prior approved equal as recommended by the sealant manufacturer in published data.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS:

- A. Comply with manufacturer's printed instructions except where more stringent requirements are shown or specified and except where manufacturer's technical representative directs otherwise.

3.2 JOINT PREPARATION:

- A. Examination: Examine joints indicated to receive joint sealers for compliance with requirements for joint configuration, installation tolerances and other conditions affecting joint sealer performance. Do not proceed with installation of joint sealers until unsatisfactory conditions have been corrected.
 - 1. Clean joint surfaces immediately before installation of sealant or caulking compound. Remove dirt, insecure coatings, moisture and other substances which would interfere with bond of sealant or caulking compound.
 - 2. Prime or seal the joint surfaces wherever shown or recommended by the sealant manufacturer. Do not allow primer/ sealer to spill or migrate onto adjoining surfaces.
 - 3. Concrete, Stone, and Other Masonry:
 - a. Clean by grinding, sandblasting, or wire brushing to expose sound surface free of contamination and laitance.
 - 4. Wood:
 - a. Clean new and weathered wood. Scrape away loose paint to bare wood. If coatings cannot be removed, test coverage to verify adhesion of sealant and consult with manufacturer for appropriate primer.
 - 5. Metal:
 - a. Remove scale, rust, and coatings from metal to expose bright white surface. Remove protective coatings as well as chemical residue or film.
 - b. Aluminum Frames: Remove clear lacquer before application of joint sealants. If

coatings cannot be removed, test coverage to verify adhesion of sealant and consult with manufacturer for appropriate primer.

- c. Prime the following surfaces with primer recommended by joint sealant manufacturer:
 - i. Copper
 - ii. Stainless Steel
 - iii. Galvanized Steel
 - iv. Fluorocarbon (Kynar) Coatings
- d. Remove other protective coatings or finishes that could interfere with adhesion.

B. Priming:

1. Where circumstances or substrates require primer, comply with the following requirements:
 - a. Apply primer full strength with brush or clean, lint free cloth. Apply primer to a light, uniform coating. Porous surfaces require more primer. Do not over apply. Do not apply primer onto surfaces of substrate.
 - b. Allow primer to dry before applying joint sealants. Depending on temperature and humidity, primer will be tack free in 15 to 120 minutes.
 - c. Prime and seal on same workday.

3.3 INSTALLATION:

- A. General: Comply with joint sealant manufacturers' written installation instructions applicable to products and applications indicated, except where more restrictive requirements are specified.
- B. Preparation: Application surfaces shall be sound, clean and dry at time sealants are applied.
 1. Prime surfaces, if recommended by sealant manufacturer, using recommended material.
- C. Installation Standards: Comply with recommendations of ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- D. Backer Rods: Install sealant backer rod for sealants, except where shown to be omitted or recommended to be omitted by sealant manufacturer for the application shown. Backer rod shall be accurately positioned with the joint to establish and control the uniform designated thickness of the sealant.
 1. Exercise care in the installation of the joint backing to see that the backing is not set too far below the surface, thereby increasing the depth of the sealant.
 2. All joint backing shall be used 25-30%, as recommended by the sealant manufacturer, 30% under compression and care shall be taken that the backing is not stretched so that it will, at a later time, recover and damage the sealant applied over it.
- E. Bond Breaker Tape: Install bond breaker tape wherever required by manufacturer's

recommendations to ensure that elastomeric sealants will perform properly and when backer rod cannot be implemented.

F. Sealants: Install sealants to depths as shown, as recommended by the sealant manufacturer but within the following general limitations, measured at the center (thin) section of the bead:

1. For normal moving joints sealed with sealants, fill joints to a depth equal to 50% of joint width, but neither more than 1/2" deep nor less than 1/4" deep.

G. Apply sealant with sufficient pressure to completely fill the void space and to assure complete wetting of contact area to obtain uniform adhesion. During the application, keep the tip of nozzle at the bottom of joint, forcing sealant to fill from bottom to top. Move tip along joint at a rate as to completely fill the joint. Tool all caulking smooth and flush with adjacent surfaces unless detailed to be finished below the surface.

H. Spillage: Do not allow sealants or compounds to overflow or spill onto adjoining surfaces or to migrate into the voids of adjoining surfaces. Clean the adjoining surfaces by whatever means may be necessary to eliminate evidence of spillage.

3.4 EXTERIOR SEALANT – SHALL INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:

A. Exterior Openings and Penetrations: Caulk perimeter joints of all exterior openings, such as doors, louvers, windows, storefront, wall penetrations, connections, etc.

B. Thresholds: Set thresholds in bed of sealant; where thresholds have weep holes, keep the weeps clear and remove excess sealant.

C. Exterior Joints: Joints and gaps formed by the intersection of dissimilar materials.

D. Expansion, Control, and Construction Joints: Caulk all expansion, control, and construction joints in exterior wall and sheet metal construction.

3.5 INTERIOR CAULKING – SHALL INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:

A. Door Frames: Caulk perimeter joints of frames set in wall construction.

B. Windows: Caulk at perimeter of windows, storefront, etc. set in exterior and interior walls.

C. Interior Joints: Joints and gaps formed by the intersection of dissimilar finishes and materials.

D. Casework: Caulk at contact with wall construction where gaps occur with fungicidal, mildew-resistant silicone by approved manufactures listed herein, or prior approved equal.

E. Janitor's Sinks, Restroom Fixtures, and Water coolers: Caulk at contact with wall construction with fungicidal, mildew-resistant silicone by approved manufactures listed herein, or prior approved equal.

3.6 CURE, PROTECTION AND CLEANING:

A. Cure sealants and caulking compounds in compliance with manufacturer's instructions and recommendations to obtain high early bond strength, internal cohesive strength and

surface durability.

1. Advise the General Contractor of procedures required for the cure and protection of sealants during the construction period so that they will be without deterioration or damage (other than normal wear and weathering) at the time of Owner's acceptance.
- B. Remove excess sealants and sealant smears as work progresses by methods and with cleaning materials approved by manufacturers of joint sealers and of products in which joints occur.
 1. Remove and replace other materials which cannot be satisfactorily cleaned.
- C. Repair, remove or replace, other work damaged by joint sealer work and cleaning.

3.7 QUALITY CONTROL:

A. Standard Field Adhesion Test:

1. The field adhesion test is a simple screening procedure that may help detect application problems such as improper cleaning, use of improper primer, poor primer application or improper joint configuration. As a check for adhesion, a simple hand pull test is required at the job site after the sealant is fully cured (usually within 7 to 21 days). Field adhesion testing should be documented using the field Adhesion Testing Log. It is suggested that 5 tests for the first 300 meters (1000 feet) and one test per 300 meters (1000 ft) thereafter be submitted or one test per floor per elevation. The hand pull test procedure is as follows:
 - a. Make a knife cut horizontally from one side of the joint to the other.
 - b. Make two vertical cuts (from the horizontal cut) approximately 75 mm (3 in.) long, at both sides of the joint.
 - c. Place a 25 mm (1 in.) mark on the sealant tab.
 - d. Grasp 50 mm (2 in.) piece of sealant firmly just beyond the 25 mm (1 in.) mark and pull at a 90 degree angle.
 - e. If dissimilar substrates are being sealed, check the adhesion of sealant to each substrate separately. This is accomplished by extending the vertical cut along one side of the joint, checking adhesion to the opposite side, and then repeating for the other surface.
 - f. Pass/ fail criteria for each sealant are shown in Table below. If the sealant does not pass according to the guidelines provided, consult the manufacturer's representative.
 - g. Inspect the joint for complete fill. The joint should not have voids, and joint dimensions should match those shown in the weathersealing details. The manufacturer's representative can assist in determining when corrective action is required.
 - h. Record the test results in a field adhesion test log. This log will need to be retained as a part of the manufacturer's warranty procedure. Some building officials may also require it.
2. NOTE: When a sealant is used to weatherseal between two dissimilar substrates, it is

recommended that the sealant adhesion to each side of the joint be individually tested. (See step e).

B. Field Adhesion Hand Pull test Criteria:

1. Contractor shall perform field adhesion hand pull test in conformance with the sealant manufacturer's criteria requirements. Contractor shall have Architect present for approval of field adhesion hand pull test.

C. Sealant Repair in Adhesion Test Area:

1. Repair the sealant pulled from the test area by applying new sealant to the test area. Assuming good adhesion was obtained, use the same application procedure to repair the areas as was used to originally seal it. Care should be taken to ensure that the original sealant surfaces are clean and that the new sealant is in contact with the original sealant.

END OF SECTION

DIVISION

8

DOORS & WINDOWS

SECTION 08111

STANDARD STEEL DOORS AND FRAMES

PART 1 – GENERAL

1.1 SUMMARY:

A. Section Includes:

1. Steel doors and frames for exterior applications.

B. Related Section:

1. Section 07900 – Sealants
2. Section 08710 – Finish Hardware
3. Section 09900 – Painting

1.2 REFERENCES:

- A. ASTM A 653/A 653M Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc Iron Alloy Coated (Galvannealed) by the Hot Dip Process.
- B. ASTM A 924 Specification for General Requirements for Steel Sheet, Metallic Coated by the Hot Dip Process.
- C. ASTM A 1008/A 1008M Standard Specification for Steel, Sheet, Cold Rolled, Carbon, High Strength Low Alloy, High Strength Low Alloy with Improved Formability, Solution Hardened, and Bake Hardenable.
- D. ASTM E 90 - Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.
- E. ASTM E 413 - Classification for Rating Sound Insulation
- F. ANSI/DHI A 115 - Specifications for Hardware Preparations in Standard Steel Doors and Frames.
- G. ANSI A156.7 - Hinge Template Dimensions.
- H. ANSI A 250.3 - Test Procedure and Acceptance Criteria for Factory Applied Finish Painted Steel Surfaces for Steel Doors and Frames.
- I. ANSI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcing.
- J. ANSI A 250.8 - SDI100 Recommended Specifications for Standard Steel Doors and Frames.
- K. ANSI A 250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
- L. ANSI/SDI 250.11 - Recommended Erection Instructions for Steel Frames
- M. ANSI/DHI A 115.IG - Installation Guide for Doors and Hardware.
- N. SDI 105 - Recommended Erection Instructions for Steel frames.
- O. SDI 111 - Recommended Details and Guidelines for Standard Steel Doors and Frames and Accessories.
- P. SDI 111-H - High Frequency Hinge Preparation
- Q. SDI 112 - Zinc Coated (Galvanized/Galvannealed) Standard Steel Doors and Frames.
- R. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames.

- S. SDI 118 - Basic Fire Door Requirements.
- T. SDI 122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames.
- U. SDI 124 - Maintenance of Standard Steel Doors and Frames.
- V. HMMA 840 - Guide Specification for Installation and Storage of Hollow Metal Doors and Frames
- W. HMMA 820 TN01-03 - Grouting Hollow Metal Frames
- X. UL 1784 - Air Leakage Tests of Door Assemblies
- Y. UL - Building Materials Directory; Underwriters Laboratories Inc.
- Z. WH Certification Listings; Warnock Hersey International Inc.
- AA. Federal Emergency Management Agency (FEMA) 361 Guidelines
- BB. Miami Dade County test protocols PA 201, PA 202 and PA 203.
- CC. Florida Building Code test protocols TAS 201, TAS 202 and TAS 203

1.3 SUBMITTALS:

- A. All submittals to be submitted to the Architect for review per requirements in Division 1.
- B. Product Data: Submit manufacturer's specifications and catalog sheets for each type of product specified, including details of construction, materials, dimensions, hardware preparation, core, label compliance, sound ratings, profiles, and finishes.
- C. Shop Drawings: Include elevations, door edge details, frame profiles, metal thicknesses, preparations for hardware, and other details. Show anchorage and accessory items. Include all quantities, dimensions, specified performance, and design criteria, materials and similar data along with installation instructions.
- D. Schedule: Prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings.
- E. Label Construction Certification: For assemblies required to be fire-rated and exceeding label limitations, submit manufacturer's certification that each assembly has been constructed to conform to design, materials and construction equivalent to requirements for labeled construction.

1.4 QUALITY ASSURANCE:

- A. Steel Door and Frame Standard: Comply with ANSI A 250.8, unless more stringent requirements are indicated.
- B. Single Source Manufacturer: Provide doors and frames from a single manufacturer who is a member of the Steel Door Institute.
- C. Installer Qualifications:
 - 1. Select a manufacturer approved distributor and installer.
 - 2. The distributor must have an employed Architectural Hardware Specialist (AHS), a Certified Door Consultant (CDC), or an Architectural Openings Consultant (AOC) who will be available to consult with the Architect and Contractor regarding any matters affecting the door and frame opening.
 - 3. Must have minimum five (5) years documented experience installing products specified in this section.

- D. Manufacturer Qualifications: Manufacturer must be a member of the Steel Door Institute.
- E. Hurricane Doors: Door systems must comply with the Miami-Dade Count Product Control Approval System or the Florida Building Code Approval System meeting requirements of Miami-Dade County test protocols PA 201, PA 202, PA 203 and Florida Building test protocols TAS 201, TAS 202 and TAS 203.
- F. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at as close to neutral pressure as possible according to NFPA 252 or UL 10B.
 - 1. Temperature Rise Rating: Where indicated provide doors that have a temperature rise rating of 450 deg F (250 deg C) maximum in 30 minutes of fire exposure.

1.5 DELIVERY, STORAGE, AND HANDLING:

- A. Deliver doors and frames palletized, wrapped, or crated to provide protection during transit and Project-site storage. Do not use non-vented plastic.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Doors:
 - 1. Store doors vertically in a dry area, under proper cover. Place the units on at least 4" high wood sills on floors in a manner that will prevent rust and damage. Avoid use of non-vented plastic or canvas shelters, which create a humidity chamber and promote rusting. If the door becomes wet, or moisture appears, remove any protective wrapping immediately. Provide a 4" space between the doors to permit air circulation. Proper storage is required to meet the requirements of ANSI/SDI A250.10 and HMMA 840.
- D. Frames:
 - 1. Store frames in an upright position with heads uppermost under cover on 4" wood sills on floors in a manner that will prevent rust and damage. Do not use non-vented plastic or canvas shelters, which create a humidity chamber and promote rusting. Store assembled frames in a vertical position, five units maximum in a stack. Provide a 2" space between frames to permit air circulation.
 - 2. Provide proper storage for doors and frames, to maintain the quality and integrity of the factory applied paint, and maintain the requirements of ANSI/SDI A250.10 and HMMA 840.
 - 3. Sand, touch up and clean prime painted surfaces prior to finish painting in accordance with the manufacturer's instructions.

1.6 COORDINATION:

- A. Coordinate Work with other directly affected sections involving manufacture or fabrication of internal cutouts and reinforcement for door hardware, electric devices and recessed items.
- B. Coordinate work with frame opening construction, door and hardware installation.

- C. Sequence installation to accommodate required door hardware.
- D. Verify field dimensions for factory assembled frames prior to fabrication.

PART 2 – PRODUCTS

2.1 **MANUFACTURERS:**

- A. Manufacturers: Subject to compliance with requirements and approval by the Architect, provide products by one of the following:
 - 1. HEF Series Embossed Paneled Hurricane Rated Door by Steelcraft
 - 2. Prior approved equal.

2.2 **DOORS:**

- A. Construct doors with the following properties:
 - 1. Exterior Doors: Hot-dip galvanized steel, ASTM A 653, Class A60, 16 gauge [0.053” (1.3MM)] hot dip galvanized steel with closed tops.
 - a. Include galvanized components and internal reinforcements with galvanized doors.
 - b. Close tops of exterior doors to eliminate moisture protection. Galvanized top caps are permitted.
 - 2. Grain-Tech factory finished doors with field primed and painted exterior face.
 - 3. Hardware reinforcements: Factory prepare hollow metal work to receive templated mortised hardware according to the Door Hardware Schedule and templates as specified in Section 08710 Finish Hardware.
 - a. Hinge reinforcements for full mortise hinges: minimum 6 gauge.
 - b. Lock reinforcements: minimum 16 gauge.
 - c. Surface applied closer reinforcements: minimum 12 gauge.
 - d. Galvanized doors include galvanized hardware reinforcements.
 - e. Projection welded hinge and lock reinforcements to the edge of the door.
 - f. Provide adequate reinforcements for other hardware as required.
- B. Door Construction
 - 1. Door construction conforming to ANSI-A250.4 criteria and tested to 5,000,000 operating cycles.
 - 2. Approved door core construction:
 - a. Polystyrene: Reinforced, stiffened, sound deadened and insulated with a rigid polystyrene core bonded to the inside faces of both panels with contact adhesive. Fill voids around the perimeter of the door with honeycomb.

3. Finish: All Doors to have Grain Tech finish.
 - a. Fabricated from steel that has an embossed wood grain pattern extending the full height and width of the door.
 - b. Provide doors with continuous vertical mechanical interlocking joints at lock and hinge edges with visible edge seams.
 - c. The wood grain embossment minimum .005” deep.
 - d. The wood grain face sheets must be cleaned, phosphatized and prime painted with a stain absorbing primer.
 - e. Vertical edges must be stained using conventional stains to achieve selected wood finish.
 - f. After staining, the door must be clear coated with UV inhibitors. Applied grain pattern or material will not be permitted.
 - g. Color to be selected by Architect from manufacturer’s full line of available wood grain colors.
 - h. Exterior face of door to be prepared, primed, and painted using paints compatible with door finish, in color selected by architect.
 4. Vertical edge seams: Provide doors with continuous vertical mechanical interlocking joints at lock and hinge edges with visible edge seams, or a one piece full height 14 gage channel. Apply a continuous bead of structural epoxy in the internal vertical.
 - a. Filled Vertical Edges: Continuous vertical mechanical interlocking joint with internal epoxy seal and edge seams epoxy filled and ground smooth.
 5. Bevel hinge and lock door edges 1/8” (3mm) in 2 inches (50mm). Square edges on hinge and/or lock stiles are not acceptable.
 6. Reinforced top and bottom of doors with galvanized 14 gauge, welded to both panels.
- C. Hurricane Doors: Designed to resist the cyclic pressures, static pressures and missile impact loads as detailed in the Miami Dade County Product Control Approval System of the Florida Building Code Approval System and meets the requirements of Miami – Dade County test protocols PA 201, PA 202, PA 203 and Florida Building Code test protocols TAS 201, TAS 202 and TAS 203.

2.3 DOOR FRAMES:

- A. Construct doors with the following properties:
 1. Exterior Frames: Hot dip galvanized steel, ASTM A 653, Class A60, 14 gage [0.067” (1.7mm)] hot dipped galvanized steel.
 - a. Include galvanized components and internal reinforcements with galvanized frames.
- B. Flush Frames: Knocked down for field assembly or set-up and arc-welded with temporary shipping bars. Factory die-mitered corner connections reinforced with four

integral tabs to secure and interlock at jambs to head. Unless otherwise indicated, frame will have 2" faces and 5/8" stops. Frame depths per architectural door schedule.

1. Provide frames with a minimum of six wall anchors and two adjustable base anchors of manufacturer's standard design.
- C. Prepare all frames to receive inserted type door silencers (3) per strike jamb on single doors, and (2) per head for pair of doors. Stick-on silencers are not permitted.
- D. Frame Hardware Reinforcements: Mortise, reinforce, drill, and tap for hardware furnished under Section 08710 Finish Hardware. Obtain templates from hardware suppliers prior to preparing door.
1. Mortise hinge reinforcement: minimum 7 gage [0.180" (4.7mm)].
 - a. Provide high frequency hinge reinforcement for top hinge on all exterior, cross corridor, and stairwell frames, in accordance with SDI 111-H, Example "A" Application, where full mortise hinges are specified.
 2. Strike reinforcements: minimum 16 gage [0.053" (1.3mm)] and prepared for an ANSIA115.12 strike.
 3. Closer reinforcement: minimum 14 gage [0.067" (1.7mm)] steel.
 4. Projection weld hinge and strike reinforcements to the door frame.
 5. Provide metal plaster guards for all mortised cutouts.
 6. Provide adequate reinforcements for other hardware as required.
 7. Include galvanized hardware reinforcements in all galvanized frames.
- E. Jamb Anchors: Provide "existing opening" type jamb anchors as recommended by manufacturer for specific conditions of this project (verify on job). Type, size, and spacing shall be as determined by manufacturer for a hurricane tested assembly (but not less than 3 minimum per jamb).

2.4 FABRICATION:

A. Face Welded Frames:

1. Continuous face weld the joint between the head and jamb faces along their length either internally or externally. Grind, prime paint, and finish smooth face joints with no visible face seams.
2. Externally weld, grind, prime paint, and finish smooth face joints at meeting mullions or between mullions and other frame members as per ANSI/SDI A250.8 – 2003.
3. Provide two temporary steel spreaders (welded to the jambs at each rabbet of door openings) on welded frames during shipment. Remove temporary steel spreaders prior to installation of the frame.

2.5 FINISH:

- A. Frames and frame components are required to be cleaned, phosphatized, and finished with one coat of baked on rust inhibiting prime paint in accordance with the ANSI/SDI A250.10 “Test Procedures and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.”
 - 1. Prime Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

PART 3 – EXECUTION

3.1 INSTALLATION:

- A. Install doors and frames in accordance with Steel Door Institute’s recommended erection instructions for steel frames in ANSI A250.11.
- B. At fire-protection-rated openings, install frames according to NFPA 80.
- C. Remove temporary steel spreaders prior to installation of frames.
- D. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
 - 1. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
- E. Provide full height 3/8” to 1-1/2” strip of polystyrene insulation at frames requiring grouting where continuous hinges are specified. Apply the strip to the back of the frame, where the hinge is to be installed, to allow for field drilling or tapping.
- F. Where grouting is required in masonry, provide and install temporary bottom and intermediate wood spreaders to maintain proper width and avoid bowing or deforming of frame members. Refer to ANSI A250.11-2001, Standard.
 - 1. All frames set in masonry will have a 1/8 inch gap between frame flanges and masonry to allow for a full bed of caulk.
 - 2. Hollow Metal Frames to receive grouting comply with ANSI/SDI Standard A250.8.2003, 4.2.2, whereby grout will be mixed to provide a 4" maximum slump consistency and hand troweled into place. Do not use grout mixed to a thinner, pumpable consistency is not recommended and not be used. Refer to HMMA 820 TN0103 Grouting Hollow Metal Frames.
- G. Provide a vertical wood brace during grouting of frame at openings over 4’0” wider, to prevent sagging of frame header.
- H. Apply hardware in accordance with hardware manufacturers’ instructions and Section 08710 Finish Hardware. Install all hardware with only factory provided fasteners. Adjust door installation to provide uniform clearance at head and jambs, to achieve maximum operational effectiveness and appearance.
- I. Install door silencers in frames before grouting.

- J. Check plumbness, squareness, and twist of frames and shim as necessary to comply with installation tolerances.
- K. Prior to installation, adjust and securely brace welded hollow metal frames for squareness, alignment, twist, and plumbness to the following tolerances:
 - 1. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - 2. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
 - 3. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - 4. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a perpendicular line from head to floor.
- L. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.
 - 1. Non-Fire-Rated Standard Steel Doors:
 - a. Jambs and Head: Maximum 1/16 inch (1.6 mm), 2 credit card thickness.
 - b. Between Edges of Pairs of Doors: 1/8 inch (3 mm) maximum.
 - c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch (9.5 mm).
 - d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 1/2 inch.
- M. Install jamb anchors as recommended by manufacturer to suit existing construction, with anchors secured into solid building structure at each jamb.

3.2 ADJUSTING AND CLEANING:

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.
- B. Galvanized Surfaces: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

3.3 PROTECTION:

- A. Provide protective measures required throughout the construction period to ensure that door and frame units will be without damage or deterioration, other than normal weathering, at time of acceptance.

END OF SECTION

SECTION 08553

ALUMINUM-CLAD WOOD FIXED-FRAME WINDOWS

PART 1 – GENERAL

1.1 **SUMMARY:**

A. Section Includes:

1. Aluminum-clad wood fixed-frame windows.

B. Related Sections:

1. Section 06100 – Rough Carpentry
2. Section 06200 – Finish Carpentry
3. Section 07460 – Cementitious Boards and Trims
4. Section 07900 – Sealants

1.2 **REFERENCES:**

A. American Architectural Manufacturers Association (AAMA):

1. AAMA 502 - Voluntary Specification for Field Testing of Windows and Sliding Doors.
2. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
3. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

B. American Society for Testing and Materials (ASTM):

1. ASTM B 117 - Operating Salt Spray (Fog) Apparatus.
2. ASTM C 1036 - Flat Glass.
3. ASTM C 1048 - Heat-Treated Flat Glass – Kind HS, Kind FT Coated and Uncoated Glass.
4. ASTM D 1149 - Rubber Deterioration – Surface Ozone Cracking in a Chamber.
5. ASTM D 2803 - Filiform Corrosion Resistance of Organic Coatings on Metal.
6. ASTM D 4060 - Abrasion Resistance of Organic Coatings by the Taber Abraser.
7. ASTM E 283 - Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Difference Across the Specimen.
8. ASTM E 330 - Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
9. ASTM E 547 - Water Penetration of Exterior Windows, Curtain Walls and Doors by Cyclic Static Air Pressure Differential.
10. ASTM G 85 - Modified Salt Spray (Fog) Testing.

C. Window and Door Manufacturers Association (WDMA):

1. ANSI/AAMA/NWDA 101/I.S.2 - Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors.
2. ANSI/AAMA/NWDA 101/I.S.2/NAFS-02 - Voluntary Performance Specification for Windows, Skylights and Glass Doors.
3. WDMA I.S.4 - Industry Standard for Water-Repellent Preservative Non-Pressure Treatment for Millwork.

1.3 PERFORMANCE REQUIREMENTS:

- A. Windows shall be Hallmark certified to a rating of FW-AW-PG90 specifications in accordance with ANSI/AAMA/NWDA I.S.2/A440-08.
- B. Window Unit Air Leakage, ASTM E 283, 6.24 psf (50 mph): 0.05 cfm per square foot of frame or less.
- C. Window Unit Water Penetration: No water penetration through window unit when tested in accordance with ASTM E 547, under static pressure of 14.2 psf (75 mph) after 4 cycles of 5 minutes each, with water being applied at a rate of 5 gallons per hour per square foot.
- D. General Performance: Aluminum-clad wood fixed-frame systems shall withstand the effects of the following performance requirements without exceeding performance criteria or failure due to defective manufacture, fabrication, installation, or other defects in construction:
 1. Movements of supporting structure, including, but not limited to, story drift and deflection from uniformly distributed and concentrated live loads.
 2. Dimensional tolerances of building frame and other adjacent construction.
 3. Failure includes the following:
 4. Deflection exceeding specified limits.
 5. Thermal stresses transferring to building structure.
 6. Framing members transferring stresses, including those caused by thermal and structural movements to glazing.
 7. Noise or vibration created by wind and by thermal and structural movements.
 8. Loosening or weakening of fasteners, attachments, and other components.
 9. Sealant failure.
 10. Failure of operating units.
- E. Loading: Design and size exterior components to withstand dead and live loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with applicable codes.
- F. Limit mullion deflection to 1/175; with full recovery of glazing materials.
- G. Movement: System to accommodate, without damage to system, components or deterioration of seals; movement within system; movement between system and perimeter framing components; dynamic loading and release of loads; deflection of structural support framing, shortening of building concrete structural columns, creep of concrete structural members and a mid-span slab edge deflection.
- H. Air Infiltration: Limit air infiltration through assembly to 0.06 cfm /m in/sq ft of crack length, measured at a reference differential pressure across assembly of 6.24 psf as measured in accordance with ASTM E283.
- I. Water Leakage: System shall meet a water test with no uncontrolled leakage at 8 psf

pressure differential with a water rate of 5 gallons/hr/sq. ft. when tested in accordance with ASTM E331.

1. Expansion and Contraction: System to provide for expansion and contraction within system components caused by a cycling temperature range of 100 degrees F over a 12 hour period without causing detrimental effects to system components.
- J. Condensation Resistance Factor (CRF) will be determined in accordance with AAM A Specification 1503.1-1988; CRF of 59.
- K. Drainage: Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to the exterior by a weep drainage network.

1.4 SUBMITTALS:

- A. Comply with Division 1 requirements.
- B. Product Data: Submit manufacturer's product data, including installation instructions.
 1. Manufacturer's standard details and fabrication methods.
 2. Data on finishing, hardware, and accessories.
 3. Recommendations for maintenance and cleaning of exterior and interior surfaces.
- C. Shop Drawings: Submit manufacturer's shop drawings, indicating dimensions, construction, component connections and locations, anchorage methods and locations, hardware locations, and installation details.
 1. Layout and installation details, including relationship to adjacent work.
 2. Elevations at 3-inch scale.
 3. Detail sections of typical composite members.
 4. Anchors and reinforcement.
 5. Hardware mounting heights.
 6. Provisions for expansion and contraction.
 7. Glazing details.
 8. Framed opening requirements and tolerances, anticipated deflection under load, affected related work, weep drainage network, expansion and contraction joint location and details, and field welding required.
- D. Samples: Submit actual samples of all finish options, including, but not limited to, aluminum exterior and wood interior.
- E. Warranty: Submit manufacturer's standard warranty.

1.5 QUALITY ASSURANCE:

- A. Installer Qualifications: Engage an experienced Installer who has completed installations of aluminum-clad wood windows similar in design and extent to those required for the project and whose work has resulted in construction with a record of successful in-service performance.
- B. Manufacturer's Qualifications: Provide aluminum-clad wood windows produced by a firm experienced in manufacturing systems that are similar to those indicated for this project and that have a record of successful in-service performance.

- C. Design Criteria: The drawings indicate the size, profile, and dimensional requirements of aluminum-clad wood windows required and are based on the specific types and models indicated. Windows by other manufacturers may be considered, provided deviations in dimensions and profiles are minor and do not change the design concept as judged by the Architect. The burden of proof of equality is on the proposer. See Section 01630 for product substitution procedures.
- D. Source Limitations for Aluminum Framed Systems: Obtain from single source from single manufacturer.
- E. Welding Qualifications: Qualify procedures and personnel according to AWS D1.2, "Structural Welding Code Aluminum."

1.6 DELIVERY, STORAGE, AND HANDLING:

- A. Delivery: Deliver materials to site undamaged in manufacturer's or sales branch's original, unopened containers and packaging, with labels clearly identifying manufacturer and product name. Include installation instructions.
- B. Storage: Store materials in an upright position, off ground, under cover, and protected from weather, direct sunlight, and construction activities. Cover components with waterproof paper, tarpaulin or polyethylene sheeting in a manner to permit circulation of air.
- C. Handling: protect materials and finish during handling and installation to prevent damage.

1.7 PROJECT CONDITIONS:

- A. Field Measurements: Check openings by accurate field measurement before fabrication. Show recorded measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of the work.

1.8 WARRANTY:

- A. Manufacturer's Warranty: Submit, for the Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights the Owner may have under the Contract Documents.
 - 1. Warranty: Include coverage for complete system for failure to meet specified requirements.
 - 2. Warranty Period: 3 years from Date of Substantial Completion.

PART 2 – PRODUCTS

2.1 MANUFACTURERS:

- A. Approved Products/ Manufacturers:
 - 1. Basis of Design: The materials and products specified herein are as manufactured by Pella Windows and Doors
 - 2. Acceptable Manufacturers: Prior approved equal, pending specific product approval

by Architect.

2.2 ALUMINUM-CLAD WOOD FIXED-FRAME WINDOWS:

- A. Aluminum-Clad Wood Fixed-Frame Windows: Pella ProLine 450 Series factory assembled, aluminum-clad wood, fixed frame windows.
- B. Frame:
 - 1. Select woods, water-repellent, preservative-treated with EnduraGuard in accordance with WDMA I.S.-4. EnduraGuard includes water-repellency, three active fungicides, and an insecticide applied to the frame.
 - 2. Interior Exposed Surfaces: Architect to select from full line of available woods to match existing (including, but not limited to, Clear Pine, Mahogany, Alder, and Douglas Fir) with no visible fastener holes.
 - 3. Exterior Surfaces: Clad with aluminum.
 - 4. Assembled with screws and concealed corner locks.
 - 5. Overall Frame Depth: 5 inches (127 mm).

2.3 GLAZING:

- A. Glazing:
 - 1. Type: Urethane-glazed, 5/8", dual seal, tempered, multi-layered Low-E coated with argon.
- B. Simulated-Divided-Light Grilles:
 - 1. Room Side Grilles: Solid 7/8" wide clear pine, water repellent, preservative-treated in accordance with WDMA I.S.4.
 - 2. Exterior Grilles: 7/8" wide extruded aluminum.
 - 3. Adhere bars to both sides of insulating glass with VHB acrylic adhesive tape.
 - 4. Finish: Finish color matches interior and exterior finish colors as selected by Architect.

2.4 TOLERANCES:

- A. Windows shall accommodate the following opening tolerances:
 - 1. Vertical Dimensions Between High and Low Points: Plus 1/4 inch, minus 0 inch.
 - 2. Width Dimensions: Plus 1/4 inch, minus 0 inch.
 - 3. Building Columns or Masonry Openings: Plus or minus 1/4 inch from plumb.

2.5 FINISH:

- A. Exterior Finish System: Pella EnduraClad Plus.
 - 1. Exterior aluminum surfaces shall be finished with the following multi-stage system:
 - a. Clean and etch aluminum surface of oxides.

- b. Pre-treat with chrome phosphate conversion coating.
 - c. Pre-treat with chromic acid sealer/rinse.
 - d. Top coat with baked-on 70% fluoropolymer-based enamel.
2. Color: Color to be selected by Architect from manufacturer's full line of available colors.
 3. Performance Requirements: Exterior aluminum finishes shall meet or exceed all performance requirements of AAMA 2605.
- B. Exterior Finish System Performance Requirements: Pella EnduraClad Plus.
1. Exterior aluminum finishes shall meet or exceed following performance requirements:
 - a. Ozone Deterioration, ASTM D 1149, Modified: 5 ppm ozone, 160 degrees F, 60 percent relative humidity, 100 hours exposure, little or no loss of cure.
 - b. Filiform Corrosion Resistance of Organic Coatings on Metal, ASTM D 2803: No corrosion.
 - c. Taber Abrasion Resistance, ASTM D 4060: 500 g weight, CS-10 wheel, 500 cycles, less than 25 g weight loss.
 - d. Cyclic Acidified Salt Fog Test, ASTM G 85, Appendix A-2.
- C. Interior Finish: Factory finished stain.
1. Color: Color to be selected by Architect from manufacturer's full line of available colors.

2.6 INSTALLATION ACCESSORIES:

- A. Flashing/Sealant Tape: Pella SmartFlash.
1. Aluminum-foil-backed butyl window and door flashing tape.
 2. Maximum Total Thickness: 0.013 inch.
 3. UV resistant.
 4. Verify sealant compatibility with sealant manufacturer.
- B. Interior Insulating-Foam Sealant: Low-expansion, low-pressure polyurethane insulating window and door foam sealant.
- C. Exterior Perimeter Sealant: "Pella Window and Door Installation Sealant" or equivalent high quality, multi-purpose sealant as specified in the joints sealant section.

PART 3 – EXECUTION

3.1 EXAMINATION:

- A. Examine areas to receive windows. Notify Architect of conditions that would adversely affect installation or subsequent use. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 INSTALLATION:

- A. Install windows in accordance with manufacturer's instructions and approved shop drawings.
- B. Install windows to be weather-tight and freely operating.
- C. Maintain alignment with adjacent work.
- D. Secure assembly to framed openings, plumb and square, without distortion.
- E. Integrate window system installation with exterior weather-resistant barrier using flashing/sealant tape. Apply and integrate flashing/sealant tape with weather-resistant barrier using watershed principles in accordance with window manufacturer's instructions.
- F. Place interior seal around window perimeter to maintain continuity of building thermal and air barrier using insulating-foam sealant.
- G. Seal window to exterior wall cladding with sealant and related backing materials at perimeter of assembly.

3.3 CLEANING:

- B. Clean window frames and glass in accordance with Division 1 requirements.
- C. Do not use harsh cleaning materials or methods that would damage finish.
- D. Remove labels and visible markings.

3.4 PROTECTION OF FINISHED WORK:

- A. Protect installed windows to ensure that, except for normal weathering, windows will be without damage or deterioration at time of substantial completion.

END OF SECTION

SECTION 08710

FINISH HARDWARE

PART 1 – GENERAL

1.1 SCOPE:

- A. Furnish all finishing hardware as shown or specified and as obviously necessary to complete the building in accordance with the intent of the Contract Documents. Items not specifically mentioned but necessary for the completion of the work shall be of the most suitable type, matching in quality and finish the items which are described. Keying system to match existing master keying system.
- B. Furnish all necessary adaptors, shoes, brackets and other devices for proper application of the hardware.

1.2 QUALITY ASSURANCE:

- A. Supplier: Hardware shall be furnished by those having appropriate experience competent to correctly interpret the floor plans, detailed drawings and specifications, to furnish appropriate and complete hardware and who shall be prepared at all times to promptly provide an efficient Builder's Hardware Technician regularly employed by them to intelligently help solve any hardware problems on the job as may be required. This individual shall be immediately available at all times after hardware contract has been awarded and until completion of the job by the Contractor and acceptance by the Owner.
- B. Installer: Assign the installation of hardware to experienced tradesmen, either at the door and frame fabrication plant or at the project site, at Contractor's option, except as otherwise indicated. It is assumed that the carpentry trade will install hardware items, except as otherwise required by the manufacturer, or otherwise directed by the Contractor, or otherwise specified.
- C. Scheduled Designations: Unless otherwise noted in Schedule, numeric designations in the hardware schedule are those of the first manufacturer listed below:
 - 1. Butts: Stanley, Hager, McKinney
 - 2. Lock Set: Schlage to match building standard
 - 3. Closers: LCN, Corbin-Russwin, Yale
 - 4. Stops: Ives, Hager, Glynn-Johnson, Rockwood
 - 5. Thresholds and Weatherstripping: National Guard, Zero, Pemko
 - 6. Kick Plates: Hager, Rockwood
- D. Fire-Rated Openings: Provide hardware for fire-rated openings in compliance with AIA (NBFU) Pamphlet No. 80 and NFPA Standard No. 80. This requirement takes precedence over other requirements for such hardware. Provide only hardware which has been tested and listed by UL for the types and sizes of doors required and complies with the requirements of the door and door frame labels.

1.3 SUBMITTALS:

- A. Product Data: Provide manufacturers product specifications and catalog cuts for each proposed item of hardware. Include information necessary to show compliance with requirements, and include instructions for installation and for maintenance of operating parts and finishes.
- B. Hardware Schedule: Submit five (5) copies of the final hardware schedule. Include a separate key schedule, showing clearly how final instructions on keying of locks have been fulfilled. Hardware schedules are intended for coordination of the work.
- C. Format of Schedule: The hardware schedule shall be in the following format or similar format acceptable to the Architect. Organize hardware schedule into "Hardware Sets" indicating complete designations of every item required for each door or opening. Include the following information:
 - 1. Type, style, function, size and finish of each hardware item.
 - 2. Name and manufacturer of each item.
 - 3. Fastenings and other pertinent information.
 - 4. Location of hardware set cross-referenced to indications on Drawings.
 - 5. Explanation of all abbreviations, symbols, codes, etc. contained in schedule.
 - 6. Mounting locations for hardware
 - 7. Door and frame sizes and materials.
 - 8. Keying information.
- D. Submit schedule to avoid delay to other work where acceptance of hardware schedule must precede fabrication of other work (e.g., metal frames) which is critical in the project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by finish hardware, and other information essential to the coordinated review of hardware schedule.
- E. Templates:
 - 1. Furnish dimensioned data to suppliers of doors, frames and other work to be factory-prepared for the installation of hardware. Hardware supplier shall check shop drawings of such other work, to confirm that adequate provisions are made for proper location and installation of hardware.

1.4 JOB CONDITIONS:

- A. Hardware Delivery: Hardware shall be received in the hardware supplier's warehouse for checking and consolidation prior to delivery to job site. No hardware shall be shipped directly from the manufacturer to the job site.
- B. Coordination: Coordinate hardware with other work. Tag each item or package separately with identification related to the final hardware schedule and include basic installation instructions in the package.
- C. Provide secure lock-up for hardware delivered to the project, but not yet installed. Control handling and installation of hardware items which are not immediately replaceable, so that completion of the work will not be delayed by hardware losses, both before and after installation.

PART 2 – PRODUCTS

2.1 FASTENERS:

- A. All hardware shall be furnished with necessary screws, bolts or other fastenings of suitable size and finish to anchor hardware in place. Furnish Phillips-head type for all exposed.

2.2 HARDWARE ITEMS:

- A. General: Unless otherwise indicated in the hardware schedule, hardware shall be as follows:

1. Butts: Quality and type as specified. Size of hinge shall be 3-1/2" high for 1-3/8" doors. Size of hinge shall be 4-1/2" high for 1-3/4" doors up to 36" wide; 5" high for doors up to 48" wide. Doors up to 90" high shall have one and one-half (1-1/2) pair of butts. Heavy weight butts shall be used as recommended by hinge manufacturer. Ball bearing butts to be used on doors with door closers. NRP for exterior doors opening out.
 - a. F179 and FBB179 by Stanley; 1279 and BB1279 by Hager; or prior approved equal.
2. Closers: Fully hydraulic with full rack and pinion action with built in stop. Closers shall have separate adjustments for latch speed, general speed and back-check. All closers shall be from one manufacturer and carry a five (5) year warranty.
 - b. Size of door closer as recommended by door closer manufacturer. All drop brackets, parallel arm brackets or special jamb plates shall be furnished as required.
 - b. 1460/1461 Series by LCN; 3500/4400 Series by Yale, or prior approved equal.
3. Door Silencers: Provide silencers for all interior swing doors in metal frames, including fire rated openings. Provide three (3) for each single door and four (4) for each pair of doors. Where flush transom panels are detailed, four (4) silencers shall be supplied for panel to assure proper alignment of door and panel.
4. Door Stops: Provide door stops at all locations required by conditions to prevent door or hardware from hitting fixed objects or walls of the building. Where floor type stops are required at carpet areas, special attention shall be given to proper door stop risers to assure firm and permanent installation. Provide types 436, 438, 406, or 406-1/2 as required by special conditions.
 - a. FS 436/438, WS406/407 by Ives; 440/442, 404/405 by Rockwood, or prior approved equal.
5. Exit Devices: Shall be furnished at all locations as required by codes and NFPA 80, NFPA 101, and RS40, even though hardware of other functions may have been listed in Schedule of Hardware through error.
 - a. Rim Exit/Panic Device (no exterior hardware) Von Duprin 98/99 Series, Yale 7000 Series or prior approved equal.
6. Doors Not Specifically Mentioned: Shall have hardware of equal quality, design, and function as required by intended use and conditions in keeping with codes and NFPA 80, NFPA 101, & RS40.

7. Half-Saddle Thresholds: 321 by National Guard Products; 252A by Pemko, or prior approved equal.
8. Thresholds: 896S by National Guard Products or prior approved equal.
9. Weatherstripping: 110NA by National Guard Products; 332CR by Pemko, or prior approved equal.
10. Drip: 16A Drip Strip by National Guard Products; 810S (MIL) Drip Guard by Hager, or prior approved equal.

2.3 FINISHES:

A. General: Unless otherwise indicated in the hardware schedule, finishes shall be as follows:

1. Butts (Exterior): Stainless Steel US32D
2. Butts (Interior): Bright Brass US3 (to match existing)
3. Locksets: Bright Brass US3 (to match existing)
4. Kick, Push, and Pull Plates: Bright Brass US3 (to match existing)
5. Door Stops & Misc.: Bright Brass US3 (to match existing)
6. Closers: Powder Coated Finish in Metallic Satin Brass US4 (to match exist. door hardware).

2.4 TYPES OF HARDWARE:

HW SET #1

Door B – Exterior from Reading Room 101

Remove and reinstall existing door alarm contact to new door and test for full operation.

- | | |
|------|--------------------|
| 3 ea | Butts |
| 1 ea | Rim Exit Device |
| 1 ea | Closer (with stop) |
| 1 ea | Threshold |
| 1 ea | Weatherstripping |
| 1 ea | Drip |

HW SET #2

Existing Door – Exterior from Corridor 104

- | | |
|------|-----------------------|
| 1 ea | Half-Saddle Threshold |
|------|-----------------------|

PART 3 – EXECUTION

3.1 HARDWARE MOUNTING HEIGHTS:

A. Mount hardware units at heights recommended in "Recommended Locations for Builders' Hardware" by NBHA, except as otherwise specifically indicated or required to comply with governing regulations, except as may be otherwise directed by Owner and coordinate with existing frames noted to remain.

3.2 INSTALLATION:

- A. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way, install each item completely and then remove and store in a secure place during the finish application. After completion of the finishes, re-install each item. Do not install surface-mounted items until finishes have been completed on the substrate.

3.3 ADJUST AND CLEAN:

- A. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. Lubricate moving parts with type lubrication recommended by manufacturer (graphite-type if no other recommended). Replace units which cannot be adjusted and lubricated to operate freely and smoothly as intended for the application made.

END OF SECTION

DIVISION

9

FINISHES

SECTION 09250

GYPSUM WALLBOARD SYSTEMS

PART 1 - GENERAL

1.1 SCOPE:

A. The scope of gypsum board systems in this project shall be as shown on drawings and as specified herein. It shall include all labor, materials, and equipment necessary for complete installation. This section includes, but not limited to, the following:

1. Gypsum board assemblies attached to framing and furring.

1.2 RELATED SECTIONS:

- A. Section 06100 - Rough Carpentry
- B. Section 06200 – Finish Carpentry
- C. Section 07900 – Sealants
- D. Section 08111 – Standard Steel Doors and Frames
- E. Section 08553 - Aluminum-Clad Wood Fixed-Frame Windows
- F. Section 09510 – Acoustical Ceiling System
- G. Section 09900 – Painting
- H. Division 15 – Mechanical
- I. Division 16 - Electrical

1.3 QUALITY ASSURANCE:

A. Industry Standard:

1. Gypsum Association (GA):

- a. GA-214 Recommended Levels of Gypsum Board Finish
- b. GA-216 Application and Finishing of Gypsum Board Finish
- c. GA-226 Application of Gypsum Board to Form Curved Surfaces
- d. GA-232 Painting New Gypsum Board
- e. GA-234 Control Joints for Fire-Resistant Rated Systems
- f. GA-801 Handling and Storage of Gypsum Panel Products: A Guide for Distributors, Retailers, and Contractors

2. Fire-Resistance Ratings:

- a. Where indicated, provide materials and construction identical to assemblies tested for fire resistance per ASTM E119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
- b. Provide indicated fire-resistance rated assemblies identified in UL "Fire Resistance Directory" or in the listing of another testing and inspecting agency acceptable to authorities having jurisdiction.

3. Allowable Tolerances: 1/8" offsets between planes of board faces, and 1/4" in 8'-0" for plumb, level, warp and bow.
4. Manufacturer: Provide gypsum/ composition board produced by one of the following:
 - a. National Gypsum Co.
 - b. USG Corp.
 - c. Georgia-Pacific Gypsum, LLC.
 - d. Prior Approved Equal
5. Manufacturer: Provide gypsum board reveal trims and shapes produced by one of the following:
 - a. Fry Reglet Architectural Metals
 - b. Gordon Interior Specialties
 - c. Trim-Tex Drywall Products
 - d. Gypsum/ Composition Board Manufacturer listed above
 - e. Prior Approved Equal

1.4 SUBMITTALS:

- A. Product Data: Provide manufacturers product brochures and cut sheets for all components and accessories as specified herein.
- B. Samples: Provide verification samples of all components and accessories for Architect review.
- C. Testing Data: Provide testing data from an independent testing agency indicating compliance with specified requirements.

1.5 DELIVERY, STORAGE, AND HANDLING:

- A. Notify manufacturer of damaged materials received prior to installation.
- B. Deliver materials in manufacturer's original, unopened, undamaged containers or packaging with identification labels intact.
- C. Protect materials from damage including corrosion, deformation, and other damage during delivery, storage, and handling.
- D. Store and handle materials in accordance with manufacturer's recommendations.

PART 2 - PRODUCTS

2.1 BOARD PRODUCTS:

- A. Gypsum Board: Thickness, 5/8" thick (match existing); Sheet Size: 4'-0" wide x maximum length available which will minimize number of end joints in work. All gypsum board shall be Type "X" gypsum core, with additives to enhance fire resistance as required. Complying with ASTM C1396 and Federal Specifications SS-L-30D Type III Grade X for exposed gypsum board, hereby defined to include work indicated for painted finish and similar forms of decoration as well as unfinished work.

1. Gold Bond Brand Fire-Shield Gypsum Board by National Gypsum Company
 2. Sheetrock Brand Gypsum Panels Firecode Core by USG Corporation
 3. Prior Approved Equal
- B. Water-Resistant Gypsum Board: ASTM C1278 and physical property requirements of ASTM C1396 and ASTM C1178, 5/8 inch thick (match existing), sheet size 4'-0" wide x maximum length available which will minimize number of end joints in work and as follows: Use water-resistant, impact resistant, Type "X" gypsum board, where indicated on drawings.
1. Gold Bond Brand e²XP Interior Extreme AR Gypsum Panel by National Gypsum Company
 2. USG Corporation
 3. Prior Approved Equal

2.2 ACCESSORY PRODUCTS (GYPSUM BOARD):

- A. Trim Accessories: Provide manufacturer's standard trim accessories of types necessary for complete and detailed drywall work (for conditions not specifically indicated below and as indicated on drawings), formed of galvanized steel with either knurled and perforated or expanded flanges for screwing and beaded for concealment of flanges in joint compound with hemmed edges where exposed. Provide beads (corner, casing, etc.), trims ("J", "U", "L", etc.) one-piece control joint, etc.
- B. Fasteners: Screws complying with GA-216 and with gypsum board manufacturer's recommendations. Comply with UL Assembly fastener requirements in fire rated walls and ceilings.
- C. Joint Treatment Materials:
1. Joint Tapes: Perforated; Comply with ASTM C475.
 2. Joint Compound: Adhesive with or without fillers complying with ASTM C475. Provide pre-mixed ready for application and as follows:
 - a. Single Compound Treatment: Provide manufacturer's single component compound for both bedding and finishing joints.

PART 3 - EXECUTION

3.1 UL RATED ASSEMBLIES:

- A. Contractor shall be responsible for complying with all installation requirements of applicable UL Assemblies for rated walls and/ or ceilings as shown in drawings to be provided. This shall include layout and spacing of studs and/ or furring members, type and spacing of fasteners, and application and fastening of gypsum board. UL Assembly (with installation standards) for each rated wall and/ or ceiling may be obtained from Architect prior to bidding.

3.2 INSTALLATION OF GYPSUM BOARD:

- A. Standards: Comply with ASTM C840 and "Recommended Specifications for the Application and Finishing of Gypsum Board," (GA-216, by the Gypsum Association), except where more detailed or more stringent requirements are indicated here or by the manufacturer's instructions and recommendations.
- B. Locate exposed end-butt joints as far from center of walls and ceilings as possible and stagger not less than 1'-0" in alternate courses of board.
- C. Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends without more than 1/16" open space between boards. Do not force into place.
- D. Locate either edge or end joints over supports, except in horizontal applications or where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that both tapered edge joints abut and mill-cut or field-cut end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.
- E. Gypsum board shall be held off structural floor slab 1/4" maximum (3/16" minimum; no slab contact allowed in any length).
- F. Attach gypsum board to framing and blocking as required for additional support at openings and cut-outs.
- G. Cutting: After scoring face paper and breaking core, cut back paper; do not tear or snap.

3.3 INSTALLATION OF DRYWALL TRIM ACCESSORIES:

- A. General: Coordinate and integrate the installation of trim accessories with the installation of gypsum board. Use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Install all trims, components and accessories in compliance with GA-216 Gypsum Association Guidelines.
- B. Install manufacturer's standard beads (corner, casing, etc.) at corners of drywall work (where specialty trims not indicated). Paint to match gypsum work.
- C. Install manufacturer's standard trims ("J", "U", "L", etc.) wherever edge of gypsum board would otherwise be exposed or semi-exposed (where specialty trims not indicated). Paint to match gypsum work.
- D. Install specialty trims (type and locations as indicated) in compliance with manufacturer's written recommendations for a complete, neatly detailed and finished condition. Use pre-formed corners, intersections, etc. when available.
- E. Install manufacturer's standard one-piece control joints in rated and non-rated walls at locations indicated below. Placement of control joints shall be in accordance with GA-216 Gypsum Association Guidelines (where not specifically located on drawings).
 - 1. Control joints shall be installed where a wall or partition runs in an uninterrupted straight plane exceeding 30 linear feet. Control joints shall be located at door jambs, extending from door head to ceiling, whenever possible (left side). When this is not possible in maintaining 30 foot maximum spacing, contact Architect for specific direction.
 - 2. Where a control joint occurs in an acoustical or fire-rated system, blocking shall be provided behind the control joint by using a backing material such as 5/8 inch type "X" gypsum panel products, mineral fiber or other tested equivalent.

3. Control joints shall be installed in ceilings to limit dimensions in either direction to 50 feet. Coordinate locations with Architect.
4. Control joints or intermediate blocking shall be installed when ceiling framing or furring members change direction.

3.4 DRYWALL FINISHING:

- A. Finish exposed drywall surfaces with joints, corners and exposed edges reinforced or trimmed as specified and with all joints, fastener heads, trim accessory flanges and surface defects filled with joint compound in accordance with manufacturer's recommendations for a smooth, flush surface. Form true, level or plumb lines, without joints, fastener heads, flanges of trim accessories or defects visible after application of field-applied decoration.
- B. Use joint tape to reinforce joints formed by tapered edges or butt ends of drywall units and at interior corners and angles. Set tape in joint compound then apply skim coat over tape in one application.
 1. Where open spaces of more than 1/16" width occur between abutting drywall units (except at control joints), pre-fill joints with joint compound and allow pre-fill to dry before application of joint tape.
- C. Application of Joint Compounds: After mixing, do not use joint compounds if recommended pot-life time has expired. Allow drying time between applications of joint compound in accordance with manufacturer's recommendations for the relative humidity and temperature levels at the time of application. In no case, allow less than 24 hours drying time between applications of joint compound. Apply not less than three (3) separate coats of joint compound over joints, fastener heads and metal flanges.
- D. Levels of Gypsum Board Finish: Provide the following levels of gypsum board finish per GA-214 from Gypsum Association.
 1. Level 4 for gypsum board surfaces indicated to receive paints, and high performance coatings.
 - a. Match existing finish of adjacent gypsum board (v.o.j.).

3.5 CLEANING AND PROTECTION:

- A. Cleaning: Promptly remove any residual joint compound from adjacent surfaces.
- B. Protection: Provide final protection and maintain conditions that ensure gypsum board assemblies remain without damage or deterioration at the time of Substantial Completion.

END OF SECTION

SECTION 09300

PORCELAIN TILE

PART 1 - GENERAL

1.1 SCOPE:

A. The scope of porcelain tile work in this project shall be as shown on drawings and as specified herein. It shall include all labor, materials, and equipment necessary for complete installation. This section includes, but is not limited to, the following:

1. Porcelain tile over concrete floors; latex portland cement mortar; epoxy grout; thin-set applications.
2. Mortar, grout, accessories, and thresholds

1.2 RELATED SECTIONS:

- A. Section 07900 - Sealants
- B. Section 09260 – Metal Studs and Gypsum Wallboard Systems

1.3 REFERENCES:

A. Industry Standards: The Industry Standards listed below refer to the latest date of issue or editions, unless otherwise indicated.

1. American National Standards Institute (ANSI):
 - a. ANSI A108/A118/A136.1 - Specifications for the Installation of Ceramic Tile
 - b. ANSI A137.1 - Specifications for Ceramic Tile
2. American Society For Testing And Materials (ASTM):
 - a. ASTM C150 - Standard Specification for Portland Cement
 - b. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes
 - c. ASTM C1028 - Standard Test Method for Determining the Static Coefficient of Friction or Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method
 - d. ASTM D4397 - Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications
3. Tile Council of North America (TCNA): TCNA Handbook for Ceramic Tile Installation

1.4 PERFORMANCE REQUIRMENTS:

A. Static Coefficient of Friction: For tile installed on walkway surfaces, only provide products with the following values as determined by testing identical products per

ASTM C1028:

1. Level Surfaces: 0.6 (wet)
2. Step Treads: 0.6 (wet)
3. Ramp Surfaces: 0.8 (wet)

1.5 SUBMITTALS:

- A. Product Data: Submit manufacturer's specifications, product data, and installation recommendations for each type of product proposed (tile, adhesive, grout, accessories, metal transition strips, etc.).
- B. Shop Drawings: Indicate tile patterns, locations and widths of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
 1. Locate precisely each joint and crack in tile substrates by measuring, record measurements on shop drawings, and coordinate them with tile joint locations, in consultation with Architect.
- C. Samples for Initial Selection: Actual tile samples of tile showing full range of colors, textures, and patterns available for each type and composition of tile indicated. Include samples of grout and accessories involving color selection.
- D. Samples for Verification: Sets showing full range of color and texture variations, in sets showing full range of variations expected.
 1. Each type and composition of tile and for each color and texture required, at least 12 inches square, mounted on plywood and grouted.
 2. Full-size units of each type of trim and accessory for each color required.
 3. Metal Transition Strips in 6 inch lengths.

1.6 QUALITY ASSURANCE:

- A. Single-Source Responsibility for Tile: For tile to be used throughout the project select a single source, which matches color, grade, finish, type, composition and variety of tile.
- B. Single-Source Responsibility for Setting and Grouting Materials: Obtain ingredients of a uniform quality from one manufacturer for each cementitious and admixture component and from one source or producer for each aggregate. Grouting materials shall include coloring agents to match grout to tiles included in the project.
- C. Installer Qualifications: Engage an experienced Installer who has successfully completed tile installations similar in material, design, and extent to that indicated for Project.
- D. Regulatory Requirements: All specifications for tile installation must conform to local building codes, ordinances, trade practices and climatic conditions.
- E. Mock-up: Submit mock-up of each tile with corresponding colored mortar and grout for approval before installation. Tile mock-ups shall be submitted on 24 inch by 24 inch plywood.
- F. Acceptance: When accepted, mock-up will demonstrate minimum standard for the Work.

1.7 DELIVERY, STORAGE, AND HANDLING:

- A. Delivery and Storage: Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirement of ANSI A137.1 for labeling sealed tile packages.
- B. Protection: Prevent damage or contamination to materials by water, freezing, foreign matter, and other causes.

1.8 PROJECT CONDITIONS:

- A. Environmental Conditions: Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's printed recommendations.
- B. Ventilation: Vent temporary heaters to exterior to prevent damage to tile work from carbon dioxide buildup.
- C. Temperature: Maintain temperatures at 50 °F (10 °C) or more in tiled areas during installation and for 7 days after completion, unless higher temperatures are required by referenced installation standard or manufacturer's instructions.

1.9 EXTRA MATERIALS:

- A. Deliver extra materials to Owner. Furnish extra materials that match products installed as described below, packaged with protective covering for storage and identified with labels clearly describing contents.
 - 1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed, for each type, composition, color, pattern, and size.

PART 2 - PRODUCTS

2.1 PRODUCTS, GENERAL:

- A. ANSI Standard for Ceramic Tile: Comply with ANSI A137.1 "Specifications for Ceramic Tile" for types, compositions, and grades of tile indicated.
- B. ANSI Standard for Tile Installation Materials: Comply with ANSI standard referenced with products and materials indicated for setting and grouting.
- C. Colors, Textures, and Patterns: Provide selections as indicated within Manufacturers Section and as indicated within drawings.
 - 1. Provide tile trim and accessories that match color and finish of adjoining flat tile unless otherwise indicated.
- D. Factory Blending: For tile exhibiting color variations within the ranges selected during sample submittals, blend tile in factory and package accordingly so that tile units taken from one package show the same range in colors as those taken from other packages and match approved samples.
- E. Mounting: Where factory mounted tile is required, provide back or edge mounted tile assemblies as standard with manufacturer unless another mounting method is indicated.

2.2 TILE PRODUCTS:

- A. Tile Products: Refer to the Manufacturer Section and Drawings for manufacturer, size, shape, color selections and additional information.
- B. Trim Units: Provide tile trim units to match characteristics of adjoining flat tile and to comply with following requirements:
 - 1. Size: As indicated, coordinated with sizes and coursing of adjoining flat tile where applicable.
 - 2. Standard Shapes: As follows, selected from manufacturer's standard shapes: cove base, bullnose, inside and outside corners, etc.
 - 3. Special Shapes: All special shapes and sizes as required to complete the installation as designed.
 - 4. External Corners: Pre-manufactured external corners or bullnose shape with a radius of at least 1/2 inch unless otherwise indicated. Coordinate with Architect.
 - 5. Internal Corners: Coved (round-in) styled; use bullnose base and cap angle pieces designed to member with stretcher shapes. Coordinate with Architect.

2.3 PORCELAIN TILE:

- A. Basis of Design: Porcelain tile as manufactured by American Olean.
- B. Other acceptable manufacturers, pending the specific product approval by Architect, are as follows:
 - 1. Prior Approved Equal
- C. Colors and Patterns: All tile and grout colors in individual spaces shall be as selected by Architect. See drawings for floor and wall patterns indicating where changes in tile colors occur.
 - 1. Porcelain Tile: Flat tile as follows for floor field tile:
 - a. Series: Shadow Bay
 - b. Composition: Colorbody Porcelain Tile
 - c. Surface: Meet Static Coefficient of Friction minimum of 0.6 (wet).
 - d. Module Size: 12 inch x 12 inch. See drawing finish plans for locations and patterns.
 - e. Nominal Thickness: 5/16 inch
 - f. Face: Textured
 - g. Manufacturer: American Olean
 - h. For Field Tile Color: Architect to select from full color line.
- D. Misc. Shapes and Trims: As required for a complete installation, matching tile (floor and walls) and/ or base as required for pattern continuity. This shall include, but not limited to, inside corners, outside corners, bullnose, cove base, etc.

2.4 TRIM AND TRANSITION ACCESSORIES:

- A. Extruded metal transition strips and trims at edge at adjacent materials and elevation

differences (floors and walls). Transitions shall be in compliance with ADA/ ABA Accessibility Guidelines.

1. Provide edge protection and transitions profiles by Schlutter Systems or prior approved equal. Architect to select trims and finishes for transition from manufacturer's full line. Trims and transitions shall include, but not limited to, the following:
 - a. Reno-TK AETK-100, Reno-T T9/14AE, or Deco AE-100-D, as applicable.
 - b. Or Prior approved Equal.

2.5 SETTING BED MATERIALS FOR TILE (FLOORS):

A. Latex Portland Cement Thin Bed Mortar for thin set and slurry bond coats to be weather, frost, shock resistant, non-flammable and meet the following physical requirements:

1. Compressive strength (ANSI A118.4): >2500 psi (17.2 MPa)
2. Bond strength (ANSI A118.4): >450 psi (3.1 MPa)
3. Smoke & Flame Contribution (ASTM E84 Modified): 0
4. Total VOC Content: < 0.05 mg/m³
 - a. Ker 121 as manufactured by Mapei Corp.;
 - b. 254 Platinum as manufactured by Laticrete International Inc.;
 - c. Prior Approved Equal

2.6 GROUT:

A. Epoxy Grout (Commercial/ Residential) shall be non-toxic, non-flammable, non-hazardous during storage, mixing, application and when cured and shall meet the following physical requirements:

1. Compressive Strength (ANSI A118.3): 3500 psi (24 MPa)
2. Shear Bond Strength (ANSI A118.3): 1000 psi (6.9 MPa)
3. Tensile Strength (ANSI A118.3): 1100 psi (7.6 MPa)
4. Thermal Shock (ANSI A118.3): >500 psi (3.5 MPa)
5. Water Absorption (ANSI A118.3): < 0.5 %
6. Vertical Joint Sag (ANSI A118.3): Pass
7. Total VOC Content: < 0.05 mg/m³
8. Cured Epoxy Grout to be chemically and stain resistant to ketchup, mustard, tea, coffee, milk, soda, beer, wine, bleach (5% solution), ammonia, juices, vegetable oil, brine, sugar, cosmetics, and blood, as well as chemically resistant to dilute acids and dilute alkalis.
 - a. Water-Cleanable, Tile-Setting and Grouting Epoxy (ALL FLOORS and WALL BASES): ANSI A118.3, grout color as selected by Architect from manufacturer's full range of colors.
 - 1) Kerapoxy as manufactured by Mapei Corp.;

- 2) SpectraLOCK as manufactured by Laticrete International Inc.;
- 3) Prior Approved Equal

2.7 EXPANSION AND CONTROL JOINTS SEALANT:

A. Expansion and Control Joint Sealant to be a one component, neutral cure, exterior grade silicone sealant and meet the following requirements:

1. Tensile Strength (ASTM C794): 280 psi (1.9 MPa)
2. Hardness (ASTM D751; Shore A): 25 (colored sealant) /15 (clear sealant)
3. Weather Resistance (QUV Weather-ometer): 10000 hours (no change)
 - a. Keracaulk U as manufactured by Mapei Corp.;
 - b. Lataasil as manufactured by Laticrete International Inc.;
 - c. Or Prior Approved Equal

2.8 TILE SEALERS:

A. Silicone Sealers: Colorless, penetrating, highly polymerized resin for use on grout joints and unglazed tile.

1. Approved Products/ Manufacturers:
 - a. Magic Seal as manufactured by Bostik Hydromet.
 - b. Silicone Grout Sealer as manufactured by L & M Manufacturing Co.
 - c. Prior Approved Equal

2.9 PATCHING AND LEVELING COMPOUNDS:

A. Self-Leveling Underlayment shall be mixed with water to produce a pumpable, fast setting, free flowing cementitious underlayment which can be poured from a feather-edge to 1 1/2" (38mm) thick in one pour.

1. 4 Hour Compressive Strength (ANSI A118.4 Mod.): >1500 psi (10.3 MPa)
2. 1 Day Compressive Strength (ANSI A118.4 Mod.): >2800 psi (19.3 MPa)
3. 28 Day Compressive Strength (ANSI A118.4 Mod.): >4300 psi (29.7 MPa)
4. Tensile Strength (ANSI A118.7): >500 psi (3.5 MPa)
5. Time To Foot Traffic: 3 – 4 Hours
6. Total VOC Content: < 0.05 mg/m³

B. Patching and Leveling Compounds: As recommended by tile manufacturer and compatible with both substrate and setting materials.

1. Approved Manufacturers:
 - a. Mapei Corp.
 - b. Laticrete International, Inc.
 - c. Ardex Group

d. Prior Approved Equal

2.10 MIXING MORTARS AND GROUT:

- A. Mixing: Mix mortars and grouts to comply with requirements of referenced standards and manufacturers including those for accurate proportioning of materials, water, or additive content; type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other procedures needed to produce mortars and grouts of uniform quality with optimum performance characteristics for application indicated. Mortars and grout for tile shall be pure white, grout for tile must be mixed to each separate tile color. Submit mock-up of each tile with corresponding colored grout for approval before installation

PART 3 - EXECUTION

3.1 EXAMINATION:

- A. Examination: Examine substrates and areas where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
1. Verify that substrates for setting tile are firm, dry, clean, and free from oil or waxy films and curing compounds.
 2. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in, or behind, tile has been completed before installing tile.
- B. Acceptance: Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION:

- A. Blending: For tile exhibiting color variations within the ranges selected during sample submittals, verify that tile has been blended in factory and packaged accordingly so that tile units taken from one package show the same range in colors as those taken from other packages and match approved samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

3.3 INSTALLATION, GENERAL:

- A. ANSI Tile Installation Standard: Comply with parts of ANSI 108 series of tile installation standards included under "Standard Specifications for the Installation of Ceramic Tile" that apply to type of setting and grouting materials and methods indicated.
- B. TCNA Installation Guidelines: TCNA "Handbook for Ceramic Tile Installation"; comply with TCNA installation methods indicated.
- C. Workmanship: Extend tile work into recesses and under or behind equipment and fixtures to form a complete covering without interruptions except as otherwise shown. Terminate work neatly at obstructions, edges, and corners without disrupting pattern

or joint alignments.

1. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so that plates, collars, or covers overlap tile.
- D. Jointing Pattern: Unless otherwise shown, lay tile in grid pattern. Align joints when adjoining tiles on floor, base, walls, and trim are same size. Lay out tile work and center tile fields in both directions in each space or on each wall area. Adjust to minimize tile cutting. Provide uniform joint widths unless otherwise shown.
1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so that extent of each sheet is not apparent in finished work.
- E. Expansion Joints: Locate expansion joints and other sealant filled joints, including control, contraction, and isolation joints, where indicated during installation of setting materials, mortar beds, and tile. Do not saw cut joints after installation of tiles.
1. Locate joints in tile surfaces directly above joints in concrete substrates and also spaced in large areas as recommended by TCNA.
 2. Prepare joints and apply sealants to comply with requirements of Section 07900 - Sealants.
- F. Grouting: Grout tile to comply with the requirements of ANSI A108.3 for epoxy grout.
- G. Mildew Resistant Sealant: Use where tile abuts plumbing fixtures, countertops, and items penetrating tile floor and walls, wainscots and bases, such as pipes and outlets. Refer to Section 07900 - Sealants.
- H. Patching/ Leveling Compounds: Install in accordance with manufacturer's strict written guidelines. Provide smooth level transitions between surfaces. Where patching/ leveling compounds are used for slope to drain, provide smooth transition and positive drainage.

3.4 PORCELAIN AND CERAMIC TILE INSTALLATION METHODS:

- A. General: Install mortar bed, tile, and grout in accordance with manufacturer's instructions and TCNA Handbook for Ceramic Tile Installation.
- B. All materials and methods shall be in strict accordance with the recommendations of TCNA and tile manufacturer for the specific installation conditions shown or referenced in drawings. This shall include, but not be limited to, bond coats, mortar beds, wire reinforcement, waterproofing membranes, fiberglass tape, expansion joints, etc. Subject to specific conditions of the job, setting materials/ methods shall be as follow.
 1. Floors – Thin Set: TCNA # F115
 2. Wall Base – Thin Set: TCNA # W244C
- C. Thin Bed Method: Install latex portland cement mortar in compliance with current

revisions of ANSI A108.02 (3.11), A108.1B and ANSI A108.5. Use the appropriate trowel notch size to ensure proper bedding of the tile, brick or stone selected. Work the latex portland cement mortar into good contact with the substrate and comb with notched side of trowel. Spread only as much latex portland cement mortar as can be covered while the mortar surface is still wet and tacky. When installing large format (>8" x 8"/200mm x 200mm) tile/ stone, rib/ button/ lug back tiles, pavers or sheet mounted ceramics/mosaics, spread latex portland cement mortar onto the back of (i.e. 'back-butter') each piece/ sheet in addition to troweling latex portland cement mortar over the substrate. Beat each piece/ sheet into the latex portland cement mortar with a beating block or rubber mallet to insure full bedding and flatness. Allow installation to set until firm. Clean excess latex portland cement mortar from tile or stone face and joints between pieces.

3.5 GROUTING OR POINTING:

- A. Chemical Resistant, Water Cleanable Tile-Grouting Epoxy (ANSI A118.3): Follow manufacturer's recommendations for minimum cure time prior to grouting. Store liquid components of Grout for 24 hours @ 70-80°F (21-27°C) prior to use to facilitate mixing and application. Substrate temperature must be 40-95°F (4-35°C). Verify joints are free of dirt, debris or grout spacers. Sponge or wipe dust/ dirt off tile faces and remove water standing in joints. Apply grout release to face of absorptive, abrasive, non-slip or rough textured ceramic tile, pavers, bricks, stone or trim units that are not hot paraffin coated to facilitate cleaning. Cut open pouch and pour Grout Part A Liquid into a clean mixing pail. Then open pouch and pour Grout Part B Liquid into the mixing pail. Mix by hand or with a slow speed (<300 rpm) mixer until the two liquids are well blended. Then, while mixing, add Grout Part C Powder and blend until uniform. Install Grout in compliance with current revisions of ANSI A108.02 (3.13) and ANSI A108.6 (3.0 - 4.0). Spread using a sharp edged, hard rubber float and work grout into joints. Using strokes diagonal (at 45° angle) to the grout lines, pack joints full and free of voids/ pits. Then hold float face at a 90° angle to grouted surface and use float edge to "squeegee" off excess grout, stroking diagonally to avoid pulling grout out of filled joints. Once excess grout is removed, a thin film/ haze will be left. Initial cleaning of the remaining film/ haze can begin approximately 20-30 minutes after grouting (wait longer at colder temperatures). Begin by mixing cleaning additive packet with 2 gallons (7.6 L) of clean water in a clean bucket to make cleaning solution. Dip a clean sponge into the bucket and then wring out cleaning solution until sponge is damp. Using a circular motion, lightly scrub grouted surfaces with the damp sponge to dissolve grout film/ haze. Then drag sponge diagonally over the scrubbed surfaces to remove froth. Rinse sponge frequently and change cleaning solution at least every 50 ft² (4.7m²). Discard sponges as they become "gummy" with residue. Within one (1) hour of finishing first cleaning, clean the same area again following the same procedure but utilizing a clean white scrub pad and fresh cleaning solution. Rinse scrub pad frequently. Drag a clean sponge diagonally over the scrubbed surfaces to remove froth. Use each side of sponge only once before rinsing and change cleaning solution at least every 50 ft² (4.7m²). Allow cleaned areas to dry and inspect tile/ stone surface. For persistent grout film/ haze (within 24 hours), repeat scrubbing procedure with undiluted white vinegar and clean pad. Rinse with clean water and allow surface to dry. Inspect grout joint for pinholes/ voids and repair them with freshly mixed Grout. Cautions:

Do not use undiluted white vinegar on polished marble or limestone unless a test spot in an inconspicuous area indicates no change in finish appearance; do not use acid cleaners on epoxy grout less than 7 days old.

3.6 EXPANSION AND CONTROL JOINTS:

- A. Expansion and Control Joints: Provide layout of proposed joint locations for Architect's approval prior to installation.
1. Substrate joints must carry through, full width, to surface of tile, brick or stone.
 2. Install expansion joints in tile, brick or stone work over construction/ cold joints or control joints in substrates.
 3. Install expansion joints where tile, brick or stone abut restraining surfaces (such as perimeter walls, curbs, columns), changes in plane and corners.
 4. Joint width and spacing depends on application - follow TCNA "Handbook for Ceramic Tile Installation" Detail "EJ-171 Expansion Joints" or consult sealant manufacturer for recommendation based on project parameters.
 5. Joint width: $\geq 1/8''$ (3mm) and $\leq 1''$ (25mm).
 6. Joint width: depth ~2:1 but joint depth must be $\geq 1/8''$ (3mm) and $\leq 1/2''$ (12mm).
 7. Layout (field defined by joints): 1:1 length: width is optimum but must be $\leq 2:1$. Remove all contaminants and foreign material from joint spaces/ surfaces, such as dirt, dust, oil, water, frost, setting/ grouting materials, sealers and old sealant/backer. Use manufacturer Primer for underwater and permanent wet area applications, or for porous stone (e.g. limestone, sandstone etc.) installations. Install appropriate Backing Material (e.g. closed cell backer rod) based on expansion joint design and as specified in Section 07900. Apply masking tape to face of tile, brick or stone veneer. Use caulking gun, or other applicator, to completely fill joints with sealant. Within 5-10 minutes of filling joint, 'tool' sealant surface to a smooth finish. Remove masking tape immediately after tooling joint. Wipe smears or excess sealant off the face of non-glazed tile, brick, stone or other absorptive surfaces immediately.

3.7 CLEANING AND PROTECTION:

- A. Cleaning: Upon completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
1. Remove epoxy grout residue from tile as soon as possible.
- B. Finished Tile Work: Leave finished installation clean and free of cracked, chipped, broken, unbonded, and otherwise defective tile work.
1. Joints shall be uniform in width; straight, level, plumb and aligned in both directions; neatly grouted without irregularities, holes and gaps.
 2. Tile, trim, and thresholds shall be the colors, patterns and textures indicated for each location, and shall match the approved samples.
 3. Exposed surfaces of tile and trim units shall be uniform and even in plane, without offsets over 1/32-inch in adjacent units.
 4. Cut edges of tile and trim units shall be concealed by joint grout, sealant, or

overlapping escutcheons of penetrating items.

- C. Grout and Tile Sealer: After grout has fully cured, apply sealer to grout joints and unglazed tile surfaces in accordance with manufacturer's instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer and sealer that has gotten on tile faces by wiping with soft cloth.
- D. Protection: Provide final protection and maintain conditions in a manner acceptable to manufacturer and installer that ensures that tile is without damage or deterioration.
 - 1. When recommended by tile manufacturer, apply a protective coat of neutral protective cleaner to completed tile walls, floors, and ceilings. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear.
 - 2. Prohibit foot and wheel traffic from tiled floors for at least 7 days after grouting is completed.
- E. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

END OF SECTION

SECTION 09490

TERRAZZO RESTORATION

PART 1 – GENERAL

1.1 **SCOPE:**

- A. The scope of terrazzo restoration shall be as shown on drawings and as specified herein. It shall include all labor, materials, and equipment necessary for a complete restoration. Terrazzo restoration shall include, but not limited to, the following:

- 1. Patching, cleaning, and refinishing of existing terrazzo flooring

1.2 **RELATED SECTIONS:**

- A. Section 02110 – Demolition
- B. Section 06200 – Finish Carpentry
- C. Section 07900 – Sealants
- D. Section 09680 – Carpet

1.3 **REFERENCE STANDARDS:**

- A. The National Terrazzo and Mosaic Association, Inc. (NTMA)
 - 1. Terrazzo Specifications, current adopted edition

1.4 **SUBMITTALS:**

- A. Product Data: Provide manufacturer's product data for all components and accessories required for terrazzo patching, repairing, and restoration. This shall include, but not limited to, cleaners, sealers, grout, aggregate, etc.
- B. Shop Drawings: Provide cleaning and maintenance data. Provide details of procedure and areas of work for the patching, repairing and restoration of the existing terrazzo flooring.

1.5 **QUALITY ASSURANCE:**

- A. Installer Qualifications: A qualified installer who is acceptable to Architect and company specializing in performing the work of this section with no fewer than three (3) years of documented experience.
 - 1. Installer shall be a contractor member of NTMA and shall perform all work in accordance with NTMA standards.

PART 2 – PRODUCTS

2.1 MATERIALS:

- A. Terrazzo Matrix: Terroxy Fill or prior approved equal and selected aggregates as recommended by Terroxy Resin Systems to match existing matrix composition and aggregate for patching and fill
- B. Cleaner: Terroxy Terra Clean or prior approved equal, a neutral cleaner with pH factor between 7 and 10 specifically designated for terrazzo and potable water, free of iron
- C. Sealer: Terroxy WB Penetrating Sealer or prior approved equal, a slip and stain resistant, high performance sealer that is chemically neutral with a pH factor of between 7 and 10, a standard coefficient of friction of 0.6 or higher, does not affect physical properties of terrazzo and complies with NTMA’s “Terrazzo Specification and Design Guide”. Penetrating liquid type to completely seal matrix surface
- D. Grout: Color to match existing matrix
- E. Surface Finish System: Terroxy Natural Finish System or prior approved equal, level of polish to be specified by Architect in accordance with desired appearance and level of reflectivity

2.2 EQUIPMENT:

- A. All work shall be executed with conventional terrazzo grinding equipment according to trade practice. No lighter type machines, such as floor scrubbing machines, will be accepted.

PART 3 – EXECUTION

3.1 GENERAL:

- A. Perform work in accordance with NTMA recommendations as posted within website and technical bulletins.

3.2 TERRAZZO PATCHING/ REPAIRING:

- A. Patch/ Repair Allowance: For the purposes of this bid, General Contractor shall figure the equivalent of five (5) 3” x 3” areas in need of patch/ repair, dispersed throughout field of existing terrazzo.
- B. Preparation:
 - 1. Prepare void to receive new terrazzo by using a power saw or hand tools to cut a vertical wall into the existing terrazzo surrounding void.
 - 2. If the void or patch is of a small size, such as a 6 inch square or less, slightly undercut at the base of this edge. In some instances, a strip may be added next to the saw cut line for aesthetic purposes or for cracking and movement purposes. Verify aesthetics with Architect prior to proceeding.
 - 3. Remove all foreign matter from the surface and saturate void to achieve a proper bond. Apply cement paste and scrub into the surface. Do not allow cement paste to dry before placing terrazzo composition.

C. Color Matching:

1. Predetermine color of existing marble chips and matrix. Make any necessary modifications to achieve color match of existing terrazzo. Provide a sample for approval by Architect prior to terrazzo placement.

D. Placement:

1. With a ratio of two (2) parts blended marble chips to one (1) part of portland cement, add enough water to make mix plastic, place composition and level with a trowel. Seed additional marble chips of the same blend over the patch. Compact and extract excess cement and water from the composition.

E. Cure:

1. Cover with paper or polyethylene sheeting to prevent rapid dehydration.

F. Finish:

1. In the initial grinding, use a 40 of finer grit stone until aggregate is exposed. Next, pass over area using 80 grit stone. Then thoroughly clean area before grouting with the matching cement mixture. Cover grouted surface with paper or polyethylene for at least 72 hours unless a cement accelerator is used. Perform final polishing with an 80 or finer grit stone. Seal patch with penetrating type terrazzo sealer.

3.3 TERRAZZO RESTORATION:

A. Preparation:

1. Cover and protect all adjacent finished surfaces during restoration process.

B. Crack Repair:

1. Clean cracks by mechanical means (like metal dental pick or fine “dremel” tooling) to remove dirt, debris and sealers. Provide “V” shape routing out or significant widening is not recommended.
2. Grout cracks to match existing matrix prior to initial grinding.

C. Initial Grinding:

1. Grind with 24 or finer grit stones. Fine mesh silica sand can also be used if needed, all in the presence of water.
2. Follow initial grind with 80 or finer grit stones in the presence of water, but omit sand.

D. Grouting:

1. Cleanse floor with ample clean water and rinse.
2. Remove excess rinse water and machine or hand apply grout, with color added to

match the matrix of the terrazzo floor, taking care to fill voids.

E. Curing Grout:

1. The grout shall remain on the surface until fully cured, commonly a minimum of 72 hours unless a cement modifier is used.
2. To prevent rapid dehydration of the grout, cover commonly with polyethylene sheeting.

F. Final Grinding:

1. Grind with 120 grit stones until all grout has been removed from the terrazzo surface.

G. Surface Finish System:

1. Terroxy Natural Finish System or prior approved equal, level of polish to be specified by Architect in accordance with desired appearance and level of reflectivity

H. Cleaning and Sealing:

1. Rinse with clean water and allow to thoroughly dry.
2. Seal: Apply slip and stain resistant sealer that is chemically neutral with a pH factor between 7 and 10. Apply penetrating sealer as per the manufacturer's strict guidelines.
3. Upon completion, this work shall be ready for final inspection and acceptance by the Architect and Owner.
4. Remove protection and clean any adjacent surfaces effected by the refinishing process.

I. Protection:

1. General Contractor shall protect the finished floor from all site and construction activities until Substantial Completion.

END OF SECTION

SECTION 09510

ACOUSTIC CEILING SYSTEMS

PART 1 - GENERAL

1.1 SCOPE:

A. The scope of acoustical tile ceiling system work in this project shall be as shown on drawings, schedules, and as specified herein. It shall include all labor, materials, and equipment necessary for complete installation. This section includes, but is not limited to, the following:

1. Acoustical ceiling system (tile, grid, hanger wires, etc.).
2. Transition trims and accessories between gypsum board systems and acoustical ceiling systems, and elsewhere as shown in drawings.
3. Edge moldings, specialty suspension trims and accessories.

1.2 RELATED SECTIONS:

- A. Section 09260 – Gypsum Wall Board Systems
- B. Section 09900 – Painting
- C. Divisions 15 – Mechanical
- D. Division 16 – Electrical

1.3 QUALITY ASSURANCE:

- A. Standards for Terminology and Performance: Applicable publications by the Acoustical and Insulating Materials Association (AIMA), including "Performance Data, Architectural Acoustical Materials."
- B. Coordinate layout of acoustic ceilings with all other work which penetrates the ceiling or is supported by (or works to) ceiling suspension systems, i.e., light fixtures, grilles, registers, diffusers, sprinkler heads, uni-strut, etc.
- C. Fire Performance:

1. Acoustical Panels: Provide acoustical panels with surface burning characteristics specified below, based on ASTM E84 tests performed by UL or other independent agency acceptable to authorities having jurisdiction. Identify packaged products with approval markings of test agency.
 - a. Flame Spread: 25 or less.
 - b. Smoke Developed: 50 or less.

1.4 SUBMITTALS:

- A. Product Data: Manufacturer's specifications and installation instructions for each type of product proposed for use.

1. Include test reports to confirm fire performance and acoustical properties of proposed acoustical units.

B. Samples For Verification:

1. 12-inch-long samples of suspension system members and special shapes, including moldings, specialty trims, transition trims, etc., of color and system type proposed for use.
2. 12-inch square samples of each acoustical unit type, pattern and color proposed for use.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING:

- A. Deliver acoustic ceiling materials to the job site in original, unopened packages, bearing manufacturer's name and label identifying each type of acoustic unit.
- B. Storage Areas: Comply with acoustic material manufacturer's recommendations for storage of units to be used in the work.

1.6 PROJECT CONDITIONS:

- A. Installation Conditions: Do not install acoustical ceilings until space is enclosed and weatherproof, wet-work in space is completed and nominally dry, work above ceilings is complete, and temperature and humidity will be continuously maintained near levels intended for final occupancy.

PART 2 - PRODUCTS

2.1 SUSPENSION SYSTEM MATERIALS AND COMPONENTS:

- A. Quality Standard: Comply with the requirements of ASTM C635 and as further specified.
- B. Structural Classification: ASTM C635 Intermediate Duty
- C. Attachment Devices: Size for five times the design load indicated in ASTM C635, Table 1, Direct Hung, unless otherwise indicated.
- D. Hanger and Tie Wires: Galvanized carbon steel, ASTM A641, Class 1 zinc coating, soft temper, pre-stretched, with a yield-stress load of at least 3 times design load, but not less than 12 gauge (0.106").
- E. Beams and Tees: All main beams and cross tees shall be commercial quality hot dipped galvanized steel as per ASTM A653. Beams and tees shall be of double-web steel construction with exposed flange design. Exposed surfaces shall be chemically cleansed, capping prefinished galvanized steel in baked polyester paint. Main beams and cross tees shall have rotary stitching.
- F. Edge Moldings and Trim: Metal of extruded aluminum of types and profiles indicated or, if not indicated, Manufacturer's standard moldings for edges and penetrations, including light fixtures, that fit type of edge detail and suspension system indicated. Use manufacturer's standard angle molding with trims at flat ceilings at wall, shadow molding at wall where indicated, with finish to match beams and cross tees.
- G. Specialty Suspension Trim: Provide suspension structure and trim at lower ceiling planes and other specialty ceiling systems as indicated on drawings. Edge trim shall

- be height as indicated on drawings, of steel with finish to match beams and cross tees. Provide all required accessories and components associated with the systems as necessary for a complete, stable, and trimmed out installation.
- H. Material Transition Trim: Metal of extruded aluminum of types and profiles indicated or, if not indicated, Manufacturer's standard transition trim for edges and penetrations between different materials, that fit type of edge detail and suspension system indicated. Use manufacturer's standard transition molding with trims, with finish to match beams and cross tees.
- I. Manufacturers: Companies offering suspension systems to comply with the requirements include the following.
1. Armstrong World Industries, USG, or Prior Approved Equal.
- J. Suspension Systems (SS): Provide suspension systems complying with the following requirements.
1. For all areas receiving new acoustical ceiling tile:
 - a. Main Beams & Cross Tees:
 - i. Hot-dipped galvanized steel with baked enamel finish to match actual color of the selected ceiling tile, unless noted otherwise.
 - b. Acceptable Products:
 - i. Suprafine XL 9/16" Exposed Tee System, by Armstrong or prior approved equal.

2.2 ACOUSTIC UNIT MATERIALS:

- A. Manufacturers: Companies offering acoustical units to comply with the requirements include the following.
1. Armstrong World Industries, USG, or Prior Approved Equal
- B. Acoustic Panels (AP): Provide panels complying with the following requirements.
1. For all areas as indicated on drawings:
 - a. Size: 24" x 24" x 1", compatible with 9/16" suspension system
 - b. Description: Wet-formed mineral fiber, fine surface texture with factory-applied acrylic latex paint
 - c. Edge Profile: Beveled Tegular, for interface with specified suspension system
 - d. Features: Noise Reduction Coefficient (NRC) 0.80, Ceiling Attenuation Class (CAC) 35, Class A Flame Spread, Light Reflectance (LR) 0.87, sag resistance in high humidity, dimensional stability up to 120 degrees F and high humidity, mold/ mildew inhibitor
 - e. Acceptable Product: Ultima High NRC Item # 1942, by Armstrong or prior approved equal

PART 3 - EXECUTION

3.1 COORDINATION:

- A. Prior to start of acoustic ceiling work, research built conditions and consult other trades and contractors involved to determine areas of potential interference. Do not start installation of ceiling systems until all interferences have been resolved.
- B. Do not alter ceiling layouts or heights to accommodate other trades, without specific written permission from the Architect.
- C. Coordinate with work of other trades and outside contractors (ie. - Owner provided equipment) to insure that ceilings work neatly to built-in structure, specialty ceiling fixtures, equipment, etc. Do not start ceiling work in procedure rooms until pre-installation meetings with all parties have been held.

3.2 INSTALLATION OF SUSPENSION SYSTEMS:

- A. General: Install all components in accordance with the specific recommendations of the product Manufacturer.
- B. Compliance: Install suspension systems which are part of non-fire-related assemblies in accordance with manufacturer's instructions; the requirements of Article 2 "Installation of Components" of "Standard Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels" ASTM C636; and as further specified.
 - 1. Loading of any component shall not cause deflection of more than 1/360 of the span.
- C. Support main runners directly from hangers; do not bear on walls or partitions. Space main runners to support acoustic panels and other work resting in or on the ceiling, as required to comply with specified performance requirements. Interlock cross-runners with either main runners or with cross-runners structurally classified as main runners.
- D. Hangers: Space not more than 6" from each end and not more than 4'-0" o.c. between ends of members to be supported. Provide additional hangers at items to be supported by the ceiling suspension system as required to prevent eccentric deflection or rotation of supporting runners.
 - 1. Provide hangers at cross tees for each corner of all light fixtures.
 - 2. Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eye-screws or other devices which are secure and appropriate for the substrate and which will not deteriorate or fail with age or elevated temperatures.
- E. Moldings and Trims: Install as directed by product Manufacturer for each suspension system type specified herein. Provide where ceilings meet walls, partitions, columns, other vertical elements, and where indicated on drawings.
 - 1. Miter cut inside and outside corners.
 - 2. Unless otherwise noted (or recommended by Manufacturer) install angle type moldings with exposed leg in same plane as bottom flange of runners.

3. Provide specialty moldings and trims of shapes in specified colors and at locations where indicated on drawings and specified herein.

F. Multi-Level Ceilings:

1. When installing multi-level ceilings, comply with Manufacturer's strict installation guidelines to achieve the design effect as shown on drawings for a complete, and structurally sound, installation. Provide hangers, secured to building structure above, of sufficient gauge and spacing to carry all imposed live and dead loads.
2. Provide shop drawings, for Architect's prior approval, showing layout of each ceiling area prior to proceeding with work. Plans shall be dimensioned, with heights shown for each ceiling level.
3. Specialty suspension trim shall be used at all exposed edges of ceiling transitions and at all other locations as detailed. All radiuses shall be curved in a neat, uniform manner. Use Manufacturer's recommended components and installation details for a complete trimmed out job.

3.3 INSTALLATION OF ACOUSTIC PANELS:

- A. Prepare and Install all panels in accordance with the specific recommendations of the product Manufacturer.
- B. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out.
- C. Do not proceed with installation until building is climate controlled.
- D. Examine construction and conditions under which the system will be installed. Do not proceed with installation until unsatisfactory conditions have been corrected. Coordinate panel layout with mechanical and electrical fixtures.
- E. Proper design for both supply air and return air, maintenance of the HVAC filters and building interior space are essential to minimize soiling. Before starting the HVAC system, make sure supply air is properly filtered and the building interior is free of construction dust.
- F. Balance border areas to avoid units of less than 1/2-unit width wherever possible. Wherever ceiling area is a multiple of full-size acoustic units used in the work, balance alignment to be square and true and install only full-size units for entire ceiling, including borders.
- G. Install square edge panels to rest on flanges of grid tees with border units supported by moldings.
- H. Install panel hold down clips where indicated in drawings, in full accordance with Manufacturer's recommendations.
- I. Lay-in acoustic panels shall be neatly cut at penetrating work, adding additional grid were necessary for best visual effect. Provide escutcheon plates at all penetrations for final trim-out to match color of ceiling tile (prep. and paint at colored ceiling tiles).

3.4 COMPLETION:

- A. Ceilings: Clean, touch-up and repair exposed surfaces of acoustical ceilings, including trim, moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch-up of minor finish damage.

1. Remove and replace work that cannot be cleaned and repaired to permanently eliminate evidence of soiling, staining, and damage.
- B. Other Work: Touch-up with matching color, repair or remove and replace as necessary other items damaged due to acoustical ceiling work.
- C. Completed Work: Acoustical ceilings shall be clean, undamaged and complete. Suspension members and moldings shall be securely attached, with neat, aligned joints. Acoustical units shall be properly sized and supported by suspension system and wall moldings at all sides.
- D. Ceilings shall be level to tolerance of 1/8" in 12'-0".
- E. Additional Materials:
 1. Provide 2 boxes "attic stock" of each tile type and color used in the project. Also provide additional hold down clips (if specified) equal to 20% of total number used in job. Turn over to Owner with closeout documents.
 2. Provide ceiling touch-up latex paint to match white and colored ceiling tiles in quart size cans for each color.

END OF SECTION

SECTION 09680

CARPET

PART 1 - GENERAL

1.1 **SCOPE:**

A. The scope of carpet work in this project shall be as shown on drawings and as specified herein. It shall include all labor, materials, and equipment necessary for complete installation. This section includes, but is not limited to, the following:

1. Carpet tile for floors
2. Tactile connectors, accessories, and trims

1.2 **RELATED SECTIONS:**

- A. Section 06200 – Finish Carpentry
- B. Section 09260 – Gypsum Wall Board
- C. Section 09300 – Porcelain Tile
- D. Section 09490 – Terrazzo Restoration

1.3 **DEFINITIONS:**

- A. Shading: A localized change in appearance of the carpet brought about by the tufts leaning in different directions. Shading may be temporary or permanent.
- B. Temporary Shading: Localized surface effects where the pile is disturbed by normal conditions of use such as footmarks, scuffmarks and vacuum marks, which can be removed or changed in appearance by brushing or vacuuming.
- C. Permanent Shading: A type of pile reversal that exhibits itself visually and is permanent.
 1. Tracking: A form of permanent shading resulting from traffic patterns within an installation. The main lines of traffic and turning points of traffic are susceptible to this type of shading and are predictable.
 2. Random Permanent Shading: Other terms commonly used to describe this type of change in appearance include watermarking and pooling. Random permanent shading effects are not related to known traffic patterns within an installation. Areas of random permanent shading may vary in shape size and orientation through the installation resulting in a random patterning, which can cross seams. Areas appear light from one direction and dark from another. Carpet may look as though water has been spilled (in pools) on areas of the carpet in random, irregular patterns.

1.4 **PERFORMANCE REQUIREMENTS:**

- A. Test Reports: Test reports for the following performance assurance tests shall be submitted upon request. Submitted results shall represent average results for production goods of the referenced style. All carpet products shall meet the

following:

1. Carpets:

- a. Flooring Radiant Panel, ASTM E648: Class 1
- b. Smoke Density, ASTM E662: 450 Flaming Mode – Max.
- c. Electrostatic Propensity, AATCC 134: 3.0 KV or less

1.5 SUBMITTALS:

- A. Standards: All manufacturers' product submittals shall be in accordance with Division 0 and Division 1 requirements.
- B. Product Data: Submit manufacturer's product literature and delivery, storage, handling, and installation instructions for each type of carpet, accessory item, and installation material required. Include methods of installation for each type of substrate.
 - 1. Submit written data on physical characteristics and flame resistance characteristics.
 - 2. Submit written recommendations from carpet manufacturers on carpet adhesive.
- C. Installer Qualification: Qualification data for firms specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include list of completed projects of type, quantity, and installation methods similar to the Work of this Section.
- D. Samples for Initial Selection: Actual tile samples of carpet tile showing full range of colors, patterns, etc. available for each type and composition of tile indicated. Include samples of accessories involving color selection.
- E. Samples for Verification Purposes: Submit manufacturer's physical examples, showing full range of color, texture, and pattern variations expected. Prepare Samples from same material to be used for the Work. Submit the following:
 - 1. 18-inch-square Samples of carpet material.
 - 2. 18-inch-long Samples of carpet edge guard
- F. Shop Drawings: Show the following:
 - 1. Seaming Diagrams: Dimensioned drawings showing carpet layout (seam locations, carpet orientation, etc.). Verify field conditions and include field measurements. Comply with manufacturer's instructions for seam location and for lay of carpet. Clearly indicate the following:
 - a. Seam locations, types, and methods
 - b. Carpet type, color, and dye lot
 - c. Pattern type, repeat size, location, direction and center point
 - d. Type, color and location of carpet insets and borders
 - e. Critical pattern match relationships between carpet types
 - f. Direction and lay of pile
 - g. Installation starting point and sequencing

- h. Installation method for each space, location, or carpet type
- i. Pattern match relationship at stair installations
- j. Type and location of edge, transition, and other accessory strips
- k. Transition details to other flooring materials
- l. Location of building expansion joints and joint/ carpet details
- m. Indicate columns, doorways, enclosing walls/ partitions, built-in cabinets, and locations where cutouts are required in carpet
- n. Installation details at any special conditions
- o. Type, location and installation of carpet wall base with bound top

G. Standard Product Samples: Submit the following for Architect's approval:

- 1. 12-inch-long Samples of each type of exposed edge stripping and accessory item.

H. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention in submittal.

I. Certification: Submit manufacturer's certificate stating that materials furnished comply with specified requirements for fire performance characteristics and physical properties and warranty requirements.

- 1. Test Reports: Submit certified laboratory test data and reports evidencing material compliance with requirements for the following:

- a. Fire performance characteristics

J. Acceptance of Substrate: Provide letter of substrate acceptance, signed by Contractor, manufacturer, and Installer as defined herein.

- 1. Manufacturer, Contractor, and Installer shall review substrate testing including results of ASTM E1907 and bond and adhesion test reports and any other tests required by manufacturer prior to accepting substrate.

K. Bond and Adhesion Test Reports: Submit certified test data and reports on bond and moisture tests for concrete subfloors. Distribute copies to Installer, carpet manufacturer, Contractor, adhesive manufacturer, and Architect for review prior to installation.

L. Floor Flatness Documentation:

- 1. Submit certification that floor flatness criteria established herein has been maintained in areas to receive carpet.
- 2. Maintenance Manual: Submit copies of manufacturers' instructions for daily and periodic maintenance of all installed carpet types. Include methods and frequency recommended for maintaining carpet in optimum conditions under anticipated traffic and use conditions. Include cleaning and stain removal products and procedures recommended. Include precautions against products and methods, which may be detrimental to appearance and performance. Include instructions for repairing materials.

M. Maintenance Training: Prior to Substantial Completion, review maintenance manual

with Owner's maintenance staff and demonstrate recommended methods for cleaning and maintaining carpet.

N. Warranty: Submit manufacturers and Installer's sample warranties.

1.6 QUALITY ASSURANCE:

A. Source of Materials:

1. Carpet Materials: To ensure matching of quality, color, pattern, and texture, install materials produced from same dye lot and production run. Where materials cannot be obtained from a single lot or production run, notify the Architect so that the extent and use of each lot or run can be controlled.
2. Carpet and Installation Materials and Accessories: Provide material obtained from one source for each type of material used in the Work. Do not change source or brands of materials during progress of Work.

B. Qualifications:

1. Carpet Manufacturer Qualifications: Firm (material producer) with not less than five (5) years of production experience in materials of types and quantities similar to the work of this Section, whose published literature clearly indicates compliance of products with requirements of this section.
2. Installer Qualifications: Firm specializing in commercial carpet installation with not less than five (5) years experience in installation of carpet of type, quantity, and installation methods similar to the work of this Section.
3. Installer must be approved and certified by the Floor Covering Installation Board.
4. Installer must be approved and certified by the manufacturer.

C. Manufacturer Qualifications: Company specializing in manufacturing specified carpet with minimum ten (10) years documented experience.

1. Upon request by Architect, manufacturer shall provide representative to assist in project start-up and to inspect installation while in process and upon completion.

D. Fire-Test-Response Characteristics: Provide products with the critical radiant flux classification indicated herein, as determined by testing identical products per ASTM E648 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

E. Test concrete subfloors for compliance with ASTM F710 and for determining adhesion and dryness characteristics.

F. ADA/ ABA Accessibility Guideline Compliance: Carpet, as installed, shall be securely attached to the subfloor in compliance with ADA/ ABA.

G. Pre-installation Conference: One week prior to commencing Work of this Section, conduct pre-installation conference at Project site to comply with requirements in Divisions 0 and 1.

1. Required Attendees: Manufacturer's representative, Installer, Contractor, and Architect.
2. Inspect condition of substrate and other preparatory work performed by other

trades. Discuss any corrections required to substrates or other work required for installation of carpet.

3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review special carpet designs and patterns.
5. Review dust control procedures.
6. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions.

1.7 DELIVERY, STORAGE, AND HANDLING:

- A. General: Comply with CRI 104, Section 5, "Storage and Handling."
- B. Delivery: Deliver materials to Project site in original factory wrappings and containers, labeled with identification of manufacturer, brand name, and lot number.
- C. Storage: Store materials in protective packaging to prevent damage prior to installation. Comply with manufacturer's instructions and recommendations.
 1. Lay flat, on continuous blocking off ground.
 2. Keep materials dry at all times. Protect against exposure to weather and contact with damp or wet surface.
 3. Protect adhesives from freezing. Follow manufacturer's recommendations for minimum temperatures to which adhesives are exposed.

1.8 PROJECT CONDITIONS:

- A. General: Comply with CRI 104, Section 6.1, "Site Conditions; Temperature and Humidity."
- B. Space Enclosure and Environmental Limitations: Do not install carpet until space is enclosed and weatherproof, wet-work in space is completed and nominally dry, work above ceilings is complete, and ambient temperature and humidity conditions are and will continuously be maintained at values anticipated for final occupancy.
- C. Subfloor Moisture Conditions: Do not install carpet over concrete slabs until slabs have cured and are sufficiently dry. The moisture emission rate shall be acceptable to carpet and carpet adhesive manufacturers, but in any case not more than 3 lb/1000 sq.ft./24 hours when tested by calcium chloride moisture test in compliance with CRI 104, 6.2.1, with subfloor temperatures not less than 55 °F.
 1. Application substrates shall show no condensation within 48 hours on underside of 4 foot by 4 foot polyethylene sheet, fully taped at perimeter to substrate.
- D. Subfloor Alkalinity Conditions: A pH range acceptable to carpet and carpet adhesive manufacturers, but in any case not outside the range of 5 to 9, when subfloor is wetted with distilled water and pHydration paper is applied.

1.9 CARPET WARRANTIES:

- A. Manufacturer's Warranty: Carpet warranty shall be the sole responsibility of the manufacturer. Second source warranties and warranties that involve parties other

than the carpet manufacturer are unacceptable.

1. Warranty Period: Warranty shall be for lifetime (20 years minimum) and shall cover against:
 - a. Excessive Surface Wear: More than 15 percent loss of pile fiber wt
 - b. Excessive Static Electricity: More than 3.0 kV per AATCC 134
 - c. Resiliency Loss of the Backing: > than 10% loss of backing resiliency
 - d. Delamination
 - e. Edge Ravel
 - f. Zippering
2. If the product fails to perform as warranted when properly installed and maintained, the affected area shall be repaired or replaced at the discretion of the manufacturer.
3. Chair pads are not required for carpet warranty coverage.
4. Warranty shall not exclude carpet product installed on stairs provided it is properly installed and maintained.
5. Tuft bind warranty in lieu of edge ravel and zippering is not acceptable.
6. Provide certification and warranty that product is 100 percent recyclable through manufacturer's recycling program into infinitely recyclable products. Warranty and certification shall include that no part of the product will be landfilled or incinerated.
 - a. Warranty is not intended to include manufacturer's responsibility for recycling in any way.

B. Installer's Warranty: Flooring contractor shall provide Owner a written installation warranty that guarantees the completed installation to be free from defects in materials and workmanship.

1. Warranty Period: One (1) year from date of Substantial Completion.

1.10 EXTRA MATERIALS:

- 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: Equal to 5 percent of amount installed for each color indicated, but not less than 10 sq. yd.
 - a. Provide percent overage of calculated yardage for each type of carpet (include carpet needed for complete installation plus waste and usable scraps in calculated yardage) as specified by Architect and/or Owner.
- B. Usable Scraps: Upon completion of the carpet installation, deliver usable scraps to the Owner. Package usable scraps per manufacturer's instructions and clearly label and identify packages. "Usable scraps" will not be accepted as inventory requirement for

replacement/maintenance materials.

PART 2 - PRODUCTS

2.1 **MANUFACTURERS:**

A. Field Carpet and Accents:

1. Basis of Design: The products in this Section are as manufactured by Interface, Inc.
2. Other acceptable manufacturer's products, pending approval of specific products by the Architect, are as follows:

- a. Prior Approved Equal

3. For field carpet, Architect to select from manufacturer's full line of available colors:

- a. **Roy G Biv**, as manufactured by Interface.

1) Product Type:	Modular
2) Size:	50cm x 50cm tiles
3) Backing Material:	GlasBac Tile
4) Yarn System:	Post-Consumer Content Type 6,6 Nylon
5) Yarn Manufacturer:	Universal
6) Dye Method:	100% Solution Dyed
7) Construction:	Tufted Textured Loop
8) Lifetime Antimicrobial:	Intersept
9) Soil/Stain Protection:	Protekt
10) Yarn Weight:	14 oz per square yard
11) Machine Gauge:	1/12
12) Pile Thickness:	0.065 in. (1.7 mm)
13) Stitches:	8 per inch
14) Pile Density:	7,754 oz per cubic yard
15) Total Recycled Content:	51%
16) Flammability:	ASTM E 648 Class I
17) Smoke Density:	ASTM E 662 Less than 450
18) Lightfastness:	AATCC 16-E Greater than 4 at 60 AFUs
19) Static Propensity:	AATCC-134 Under 3 KV

4. For accent carpet, Architect to select up to four (4) colors from manufacturer's full line of available colors. This shall be figured in to General Contractor's bid.

- a. **Viva Colores**, as manufactured by Interface.

1) Product Type:	Modular
2) Size:	50cm x 50cm tiles
3) Backing Material:	GlasBac RE Tile
4) Yarn Manufacturer:	Universal

5) Dye Method:	100% Solution Dyed
6) Construction:	Tufted Textured Loop
7) Lifetime Antimicrobial:	Intersept
8) Soil/Stain Protection:	Protekt
9) Yarn Weight:	18 oz per square yard
10) Machine Gauge:	1/12
11) Pile Thickness:	0.101 in. (2.6 mm)
12) Stitches:	10 per inch
13) Pile Density:	6,416 oz per cubic yard
14) Total Recycled Content:	69%
15) Flammability:	ASTM E 648 Class I
16) Smoke Density:	ASTM E 662 Less than 450
17) Lightfastness:	AATCC 16-E Greater than 4 at 60 AFUs
18) Static Propensity:	AATCC-134 Under 3 KV

2.2 ACCESSORIES:

- A. Transitions, Trims, Accessories: Provide ADA / ABA compliant transitions between materials changes.
1. Trims, transitions and accessories shall include, but not limited to, the following where indicated on drawings:
 - a. See Section 09300 and drawings for transition strips.
- B. Leveling and Patching Compound: Latex type recommended by carpet manufacturer and acceptable to adhesive manufacturer.
- C. TacTile Connector: Carpet it to be secured in place using manufacturer's TacTile Connector adhesive squares.

PART 3 - EXECUTION

3.1 INSPECTION:

- A. Substrate Conditions: Inspect application surfaces to determine that they are free from defects impairing performance or appearance of the installed materials. Application surfaces shall be:
1. Straight and true to plane within 1/8 inch in 8 feet, without local irregularities and abrupt changes in plane which could telegraph through new materials.
 2. Smooth and free from cracks, holes, ridges and similar defects.
 3. Clean and free from foreign materials including incompatible curing compounds, paint, oils, waxes, sealers, grease and similar substances which would prevent adhesive bond.
- B. Testing: Perform tests on concrete substrates to determine if surfaces are sufficiently cured and dry as well as to ascertain presence of curing compounds and other coatings, which would prevent adhesive bond. Floor testing shall include but may not be limited to:

1. pH level analysis
 2. Moisture content analysis as required by manufacturer's instructions to ensure pH readings of no more than 9. Moisture transmission of 5.0-lbs/sq. ft per 24 hours is acceptable. If values exceed this level, follow manufacturer's recommendations for moisture transmission mitigation. Do not proceed until unsatisfactory conditions have been corrected.
- C. Acceptance: Start of carpet installation will be considered acceptance by Installer, Contractor, and manufacturer of conditions as satisfactory for proper installation. Do not proceed with carpet installation until application surfaces are free from defects that would impair the in-use performance and appearance of carpet.

3.2 PREPARATION:

- A. General: Prepare unsatisfactory application surfaces as follows:
1. Allow new concrete to cure for 90 days before carpet installation starts.
 2. Fill, level and make smooth cracks 1/16 inch or more, holes, unevenness, and roughness with compatible latex floor patching compounds recommended by carpet manufacturer. Feather floor filling or leveling compound a minimum of 4 feet. Sweep floor of loose granular debris prior to filling. After filling, allow filler to dry. Damp mop floor with warm water and allow to dry. Vacuum after mopping to ensure that loose granular debris is removed and to provide a proper substrate to install carpet. Prohibit traffic until filler is cured.
 3. Remove ridges and surface irregularities by grinding or sanding.
 4. Remove foreign materials and coatings by grinding, scraping, sanding and then washing as necessary.
- B. Cleaning: Vacuum floor again immediately before installation of carpeting, re-inspect substrates, and perform additional preparation work if necessary.
- C. Sealing: Apply sealer, if recommended by carpet/ adhesive manufacturers, prior to application of adhesive. Apply in compliance with manufacturer's directions.
- D. Adhesive: Confirm compatibility of adhesive (as recommended by manufacturer) with curing compounds on concrete floors.
- E. Preheat areas to receive carpet to a minimum temperature of 68 °F for 72 hours prior to installation, with a relative humidity of not more than 65 percent. Maintain minimum temperature of 50 °F thereafter. Carpet and adhesive must be stored at a minimum temperature of 68 °F, for 72 hours prior to installation.
- F. Store adhesive and other liquid materials in same atmospheric conditions as carpet, 68 °F for at least 72 hours.

3.3 INSTALLATION, GENERAL:

- A. General: Follow manufacturer's instructions for installation. Butt edges tight to form seams without gaps. Roll entire area lightly to eliminate air pockets and ensure uniform bond.
- B. Layout: Comply with Architect approved seam and pattern layout as submitted. Comply with manufacturer's recommendations for seam locations and layout and quantity of TacTile Connectors; maintain uniformity of carpet direction and lay of

- pile in relation to Architect's approved layout.
- C. Extent of Flooring: Extend flooring materials into toe spaces, door reveals, alcoves, closets, and similar openings.
 - 1. Extend carpet under furniture and furnishings, movable equipment, operable partitions, removable flanges and similar non-fixed items.
 - D. Cutouts: Provide cutouts where required, and bind cut edges where not concealed by protective edge guards or overlapping flanges.
 - E. Base: Install carpet tight to existing and new wood wall base as indicated on drawings and in accordance with manufacturer's instructions.
 - F. Edge Guard: Install carpet edge guard where edge of carpet is exposed; anchor guards to substrate.
 - G. Pattern: Install with pattern parallel to walls and borders, unless otherwise indicated. Orient matching carpet pattern in adjacent spaces in same direction. Coordinate with Architect for approval of pattern layout. See drawings.

3.4 INSTALLATION METHOD:

- A. Manufacturer's Instructions: Comply with manufacturer's recommendations and instructions.
- B. Installation Method: Install manufacturer's adhesive TacTile squares compatible with carpet tiles specified. Use manufacturer's approved quantity of adhesive connectors spaced accordingly for carpet layout.
 - 1. Butt edges to form tight seams without gaps. Roll entire area lightly to eliminate air pockets and ensure uniform bond.

3.5 CLEANING AND PROTECTION

- A. Cleaning: Remove and dispose of debris and scraps. Vacuum with commercial machine with face-beater element. Remove soil. Replace carpet where soil cannot be removed. Remove protruding face yarn.
- B. Protection: Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, to ensure carpet is not damaged or deteriorated at time of Substantial Completion.
- C. Workmanship: Completed carpet work shall be clean and free from damage and defective materials and workmanship. Seams shall be snug, and carpeting shall be smooth and uniform, without humps and wrinkles. Edge strips shall be securely fastened and neatly fitted. There shall be no excess adhesive on carpeting and other surfaces.
 - 1. Removal and replacement of such defects will be required throughout the period specified for correction of defective work for this Project.

END OF SECTION

SECTION 09900

PAINTING

PART 1 - GENERAL

1.1 **SCOPE:**

- A. The scope of painting work in this project shall be as shown on drawings and specified herein. It shall include all labor, materials, and equipment necessary for a complete finished installation.
- B. If the schedule herein requires two or more types of painting on the same substrate, the type will be distinguished by the term "paint" meaning an opaque finish (flat, satin, semi-gloss, gloss sheens) and "transparent" meaning a non-opaque, transparent finish (varnishes, stains).

1.2 **RELATED SECTIONS:**

- A. Section 05500 – Metal Fabrications
- B. Section 06200 – Finish Carpentry
- C. Section 07460 – Cementitious Boards and Trims
- D. Section 07900 – Sealants
- E. Section 09250 – Gypsum Wallboard Systems
- F. Division 15 – Mechanical
- G. Division 16 – Electrical
- H. Shop coats on fabricated items and structural steel
- I. Factory-applied finishes

1.3 **DEFINITIONS:**

- A. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, coatings, stains, sealers and fillers.
- B. "Exposed surfaces" include portions of the completed construction which are visible when permanent and built-in fixtures and equipment are in place.
- C. "Exterior" includes portions of the completed construction which are subject to outdoor ambient temperature and humidity conditions, including covered but unenclosed areas.
- D. Surfaces to be Painted: Complete coverage of all exposed surfaces is intended, unless indicated "no paint" on drawings. Without restricting the extent of the work to be performed, the work shall include, but is not limited to, the following:
 - 1. Wood: Painting of all exposed woodwork and finish carpentry, interior and exterior, doors and of all architectural woodwork and finish carpentry, except that specified to be pre-finished.
 - 2. Structural Steel: Touch-up after erection (concealed work only), and complete painting for all exposed work.
 - 3. CMU, Masonry, and Plaster: All exposed surfaces.
 - 4. Ferrous Metal: All exposed surfaces of all ferrous metal work, including galvanized, both exterior and interior of building which is not finished painted under other sections, to include steel frames, steel doors, access panels, guards, lintels, gutters,

- gravel guards, metal flashings, railings (unless otherwise indicated), roof accessories, steel supports, sprinkler riser, roof hatch and grates, bollards, etc.
5. Concrete Slab: Concrete sealer for slabs scheduled to remain a concrete surface.
 6. Gypsum Drywall: All exposed surfaces.
 7. Concrete: Sidewalk curbs, handicapped ramps, site light bases, parking striping, directional arrows, etc. (when indicated on drawings).
 8. All Previously Painted Surfaces.

E. Surfaces Not to be Painted: The following areas or items will not require painting under this Section, unless otherwise noted:

1. Concealed duct shafts, concealed spaces, concealed pipes and ducts.
2. Acoustical tile and suspension system.
3. Pre-finished panels.
4. Structural steel work concealed by interior building finish.
5. Gypsum drywall surfaces to receive other finish materials.

1.4 QUALITY ASSURANCE:

- A. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.
- B. Compatibility: Review other Sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information on finish materials to be used, to enable use of compatible prime coats. Notify the Architect of anticipated problems using the specified materials.
- C. Industry Standards: Comply with the recommendations of the Painting and Decorating Contractors of America, as contained in "PDCA Architectural Specification Manual", except where conflicting and more stringent requirements are specified in this Section.
- D. Applicator Qualifications: Engage an experienced applicator who has completed painting system applications similar in material and extent to those indicated for the Project that have resulted in a construction record of successful in-service performance.
- E. Cooperation with Other Trades: This work shall be scheduled and coordinated with other trades and shall not proceed until other work and/ or project conditions are as required to achieve satisfactory results. The Contractor shall examine the Specifications for the various other trades and materials and shall thoroughly familiarize himself with all their provisions regarding painting.

1.5 QUALIFICATIONS:

A. Manufacturers:

1. Basis Of Design: For purposes of designating type and quality for the work under this Section, drawings and specifications are based on products manufactured or furnished by Sherwin-Williams Company, except as noted specifically otherwise.
2. Acceptable Manufacturers: Products from the following approved manufacturers having equal quality to those as specified herein will be acceptable as approved, upon specific product review by the Architect:

- a. Benjamin Moore & Company
- b. PPG Industries
- c. Prior Approved Equal

1.6 SUBMITTALS:

- A. Product Data: Submit manufacturer's technical information including paint label analysis with handling, storage and application instructions for each material proposed for use. Identify purpose (primer, intermediate or finish coat) and substrate for each paint material.
- B. Samples: Prior to beginning work submit samples for review of color and texture only. Provide a listing of material for each coat of each finish sample.
 - 1. On 12" x 12" gypsum board and CMU, provide one sample of each color and material. Resubmit samples as requested by Architect until acceptable sheen, color, and texture is achieved.
 - 2. On 12" x 12" section of plaster, provide one sample of each color and material. Resubmit samples as requested by Architect until acceptable sheen, color, and texture is achieved.
- C. Provide one sample of natural and stained wood finish. Use wood samples approved for Sections 06100, 06200, and 08210 (where applicable). Label and identify each as to location and application.
- D. On completed wall surfaces and other building components, where directed by the Architect, duplicate painted finishes of approved samples. Provide full-coat finish samples on at least 100 sq. ft. of surface, until required sheen, color and texture is obtained; simulate finished lighting conditions for review of in-place work.
 - 1. Final acceptance of colors will be from samples applied on the job.
 - 2. Approved on-site samples will be the standard for acceptance of the permanent work, which shall match approved samples in color, sheen, texture, hiding powers, application workmanship, and other appearance characteristics. Identify, preserve and protect on-site samples.

1.7 PRODUCT HANDLING:

- A. Storage of Materials:
 - 1. Store all materials in a single place designated by the General Contractor. The storage place shall be kept neat and clean and all damage shall be made good. Remove soiled or used rags, waste and trash from the building every night and take every precaution to avoid the danger of fire.
 - 2. Emulsion paints shall be protected from exposure to cold weather by storing in shelters so as to prevent freezing of the paint.

1.8 ENVIRONMENTAL CONDITIONS:

- A. Maintain temperature in building at a constant 65 °F or above during drying of plaster and masonry and provide adequate ventilation for escape of moisture from building in order

to prevent mildew, damage to other work and improper drying of paint. Once painting has commenced, provide a constant temperature of 65 °F or above and prevent wide variations in temperature which might result in condensation on freshly painted surfaces.

- B. Exterior painting shall not be performed when the temperature is below 50 °F, while the surface is damp, during cold, rain or frosty weather, or when temperature is likely to drop to freezing within 24 hours. Avoid painting surfaces while they are exposed to hot sun.
- C. Cleaning Area: Before painting is started in any area, it shall be broom-cleaned and dust shall be removed from all areas to be painted. After painting operations begin in a given area, broom cleaning will not be allowed. Cleaning shall then be done only with commercial vacuum cleaning equipment.

1.9 PROTECTION:

- A. Drop Cloths: Protect adjacent areas and installation by the use of drop cloths or other approved precautionary measures.
- B. Hardware and Fixtures: Remove and protect hardware, accessories, device plates, lighting fixtures, factory finished work and similar items or provide ample in-place protection. Upon completion of each space, carefully replace all removed items. This work shall be done only by skilled mechanics, using adequate tools commensurate with the work to be done.

1.10 MAINTENANCE MATERIALS:

- A. Extra Stock: Provide minimum of 1 gallon of each paint type and color used. Provide in sealed, labeled containers.

PART 2 - PRODUCTS

2.1 PAINT MATERIALS:

- A. Provide materials as specified in Painting Schedule herein. Paint shall arrive at the project site ready-mixed, except for tinting of undercoats and possible thinning. Tinting materials shall be as recommended by the manufacturer for the particular materials tinted.

2.2 APPLICATION EQUIPMENT:

- A. Equipment shall be adequate and commensurate for the work and workmanship required herein.

2.3 ACCESSORY MATERIALS:

- A. This shall include all required ladders, scaffolding, drop cloths, masking, scrapers, tools, sandpaper, dusters, cleaning solvents and other items required to perform the work and achieve the results herein specified.

PART 3 - EXECUTION

3.1 PREPARATION OF SURFACES:

A. General Requirements for Preparations:

1. Hardware, hardware accessories, machined surfaces, plates, lighting fixtures and similar items in contact with painted surfaces (and not to be painted) shall be removed (where possible), masked or otherwise protected prior to surface preparation and painting operations. Such removal and reinstalling shall be done by workmen skilled in the trades involved.
2. Exposed nails and other ferrous metal on surfaces to be painted with water-thinned paints shall be spot-primed with zinc-dust-oxide or zinc chromate primer.
3. Surfaces to be painted shall be clean before applying paint or surface treatments. Oil and grease shall be removed with clean cloths and cleaning solvents prior to mechanical cleaning, except when sand blasting is employed. Cleaning and painting shall be so performed that dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
4. Paints shall be applied only to surfaces that are completely free of surface moisture as determined by sight or touch. In no case shall paint be applied to surfaces upon which there is visible frost or ice.
5. Concrete, Masonry, And Stucco/ Plaster: Surfaces to be painted shall be prepared by removing efflorescence, chalk, dust, dirt, grease, oil, excessive mortar, unsound paint coatings, and other material detrimental to painting. Surfaces shall be thoroughly dry, properly cured and clean before application of paint. Concrete, Masonry and Stucco/ Plaster Prep.: S-W-3, S-W-4, S-W-11, and/ or S-W-12.
 - a. Use abrasive blast-cleaning methods if recommended by the paint manufacturer.
 - b. Test alkalinity and moisture content of surfaces. If surfaces are sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's printed directions.
6. Concrete Surfaces To Be Sealed: Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust and other foreign material to achieve adequate adhesion. Minimum substrate cure is 28 days at 75 °F. Remove all form release agents, curing compounds, salts, efflorescence, laitance, and other foreign matter by sandblasting, shotblasting, mechanical scarification or suitable chemical means. Refer to ASTM D4260. Rinse thoroughly to achieve a final pH between 6.0 and 10.0. Allow to dry thoroughly prior to coating.
 - a. Surface Preparation of Concrete to be Sealed: SSPC-SP13/ NACE 6
7. Wood Surfaces to Receive Paint Finish: Wood surfaces shall be primed and finish-coated as specified in the Painting Schedule herein. Wood surfaces to be painted shall be cleaned of dirt, oil, unsound paint coatings, and other foreign substances with mineral spirits, scrapers and/ or sandpaper. Wood Prep.: S-W-23 (Exterior), S-W-24 (Interior), and/ or S-W-12.

- a. After priming, all holes and imperfections in finish surfaces shall be filled with putty or plastic woodfiller, colored to match the finish coat, allowed to dry and sandpapered smooth.
 - b. Unless otherwise approved, painting shall proceed only when the moisture content of the wood does not exceed 12% as measured by a moisture meter.
8. Wood Surfaces to Receive Transparent Finish: Except as hereinafter specified, prepare properly to the approved shade. Lightly sand each varnish coat prior to application of subsequent coat.
9. Ferrous Surfaces: Surfaces that have not been shop-coated shall be solvent cleaned to remove oil and grease. Surfaces that contain loose rust, loose mill scale, unsound paint coatings, and other foreign substances shall be mechanically cleaned by power wire-brushing or sandblasting in accordance with SSPC specifications. Minor amounts of residual rust that cannot be removed by applying a sharp knife to any edge will be permitted. Ferrous Surfaces Prep.: S-W-13 through S-W-15 (as applicable) and/ or S-W-12.
 - a. After cleaning, apply one coat of ferrous metal primer to all ferrous surfaces that are to receive paint. Protect shop-coated metal from corrosion before and after installation by treating corroded areas immediately upon detection. Abraded or corroded spots on shop-coated surfaces shall be wire brushed and touched up with the same materials as the shop coat. All edges of repair shall be carefully feathered out on exposed surfaces.
10. Galvanized Metals: Surfaces shall be solvent-cleaned, treated, and otherwise prepared in accordance with the paint manufacturer's directions. Galvanized Surfaces Prep.: S-W-10 and/ or S-W-12.
11. Aluminum and Aluminum-Alloy: Surfaces shall be solvent cleaned to remove oil and grease and then treated in accordance with paint manufacturer's directions before painting. Aluminum Prep.: S-W-1 and/ or S-W-12.
12. Drywall: Fill minor irregularities with spackling compound. Sand to a smooth, level surface. Exercise care to avoid raising nap of paper. Gypsum board joint treatment and finishing shall be as specified in Section 09260. Drywall Prep.: S-W-8 and/ or S-W-12.
13. Previously Coated Surfaces: Maintenance painting will frequently not permit or require complete removal of all old coatings prior to repainting. However, all surface contamination such as oil, grease, loose paint, mill scale, dirt, foreign matter, rust, mold, mildew, mortar, efflorescence, and sealers must be removed to assure sound bonding to the tightly adhering old paint. Glossy surfaces of old paint films must be clean and dull before repainting. Thorough washing with an abrasive cleanser will clean and dull in one preparation, or wash thoroughly and dull surface by sanding. After preparation, coat entire surface with primer (including well adhered previous coatings). Check for compatibility by applying a test patch of the recommended coating system, covering at least 2 to 3 squares feet. Allow to dry one week before testing adhesion per ASTM D3359. If the coating system is incompatible, complete removal is required. Provide test results for Architect's review showing compliance prior to ordering materials.

3.2 TIME BETWEEN SURFACE PREPARATION AND PAINTING:

- A. Surfaces that have been cleaned, pre-treated and/ or otherwise prepared for painting shall be given a coat of the specified first-coat material as soon as practicable after such preparation has been completed, but in any event prior to any deterioration of the prepared surface.

3.3 MIXING:

- A. Quality: At time of application, paint shall show no signs of hard settling, excessive skinning, livering or other deterioration.
- B. Consistency: Paint shall be thoroughly stirred, strained and kept at a uniform consistency during application.
- C. Prohibited Mixing: Paint of different manufacturers shall not be mixed together.
- D. Thinning: Where necessary to suit conditions of surface, temperature, weather and method of application, packaged paint may be thinned immediately prior to application in accordance with the manufacturer's directions, but not in excess of one (1) pint of suitable thinner per gallon. The use of thinner for any reasons shall not relieve the Contractor from obtaining complete hiding coverage.
- E. Colorant: Primer may be tinted with a colorant recommended by the manufacturer.

3.4 APPLICATION:

- A. Method of Application: Paint shall be applied in accordance with manufacturer's recommendations. On masonry surfaces, filler coat and other first coats shall be applied by brush. Subsequent coats shall be applied by brush (or roller, on smooth faced units). On all other surfaces, prime and finish coats may be applied by brush or roller.
- B. Sequence of Coats: Sufficient time shall elapse between successive coats to permit proper drying. This period shall be modified as necessary to suit adverse weather conditions.
- C. General Requirements for Workmanship:
 - 1. Coverage and hide shall be complete. When color, stain, dirt or undercoats show through final coat of paint, the surface shall be covered by additional coats until the paint film is of uniform finish, color, appearance, thickness and coverage, at no additional cost to the Owner.
 - 2. Rate of application shall not exceed average rate of coverage recommended by manufacturer for the type of surface involved less ten percent (10%) allowance for losses, unless manufacturer's printed recommended specifications state that the recommended rate included normal expected losses.
 - 3. Minimum dry film thickness per coat shall not be less than thickness recommended by the manufacturer.
 - 4. The finished surfaces shall be free from runs, drops, ridges, waves, laps, brush marks and free of variations in color, texture and finish.
 - 5. All interior wood trim shall be back-primed before installation with enamel undercoat or penetrating sealer, as required.
 - 6. Sand enamel or varnish finish applied to wood or metal with fine sandpaper and then clean between coats to produce an even, smooth finish.
 - 7. Remove electrical panel box covers and doors before painting wall. Paint separately

and reinstall after all paint is dry.

3.5 TOUCH-UP WORK:

- A. A minimal amount of touch-up work to newly painted surfaces will be allowed (one touch-up per every 10 square feet of wall area), but only if the repair is not visible upon close inspection. Contractor must refinish a whole wall rather than spot-finish where there are numerous repairs to be made, or where remedial work is unsatisfactory.

3.6 PAINING SCHEDULE - EXPLANATION:

- A. Except as specified under the "Surfaces Not to be Painted" paragraph, the surfaces listed in the painting schedule shall receive the surface treatment, paints and number of coats indicated. Piping and ductwork shall not be painted until the piping and ductwork have been tested and approved.

3.7 PAINING SCHEDULE:

A. EXTERIOR PAINTING:

1. Steel and Ferrous Metals (Including Piping):

- a. First Coat: Fabricator's shop coat or Pro-Industrial Pro-Cryl Universal Primer (B66-310) at 2.0 - 4.0 mils dry per coat.
- b. Second and Third Coats: Pro Industrial Acrylic Semi-Gloss (B66-650 Series), Semi-Gloss Sheen at 2.5 – 4.0 mils dry per coat.

2. Galvanized Metal (Sheet Metal, Decking, Piping, Conduit, Etc.):

- a. First Coat: Fabricator's shop coat or Pro-Industrial Pro-Cryl Universal Primer (B66-310) at 2.0 - 4.0 mils dry per coat.
- b. Second and Third Coats: Pro Industrial Acrylic Semi-Gloss (B66-650 Series), Semi-Gloss Sheen at 2.5 – 4.0 mils dry per coat.

3. Cementitious Boards and Trims:

- a. First Coat: Loxon Block Surfacers (A24W00200) at 8.0 mils dry per coat.
- b. Second and Third Coats: A-100 Exterior Latex Satin (A82-100 Series), Satin sheen at 1.5 mils dry per coat.

4. Wood (Painted):

- a. First Coat: Exterior Latex Wood Primer (B42W8041) at 1/4 mils dry per coat.
- b. Second and Third Coats: A-100 Exterior Latex Satin (A82-100 Series), Satin sheen at 1.5 mils dry per coat.

B. INTERIOR PAINTING:

1. Steel and Ferrous Metals (Including Piping):
 - a. First Coat: Fabricator's shop coat or Pro-Industrial Pro-Cryl Universal Primer (B66-310) at 2.0 - 4.0 mils dry per coat.
 - b. Second and Third Coats: Pro Industrial Acrylic Semi-Gloss (B66-650 Series), Semi-Gloss Sheen at 2.5 – 4.0 mils dry per coat.
2. Galvanized Metal (Sheet Metal, Decking, Piping, Conduit, Etc.):
 - a. First Coat: Fabricator's shop coat or Pro-Industrial Pro-Cryl Universal Primer (B66-310) at 2.0 - 4.0 mils dry per coat.
 - b. Second and Third Coats: Pro Industrial Acrylic Semi-Gloss (B66-650 Series), Semi-Gloss Sheen at 2.5 – 4.0 mils dry per coat.
3. Interior Surfaces of Ductwork and All Other Items Visible Through Air Distribution Devices (As Noted on Mechanical Drawings):
 - a. First Coat: Fabricator's shop coat or ProMar 200 Zero VOC Latex Primer (B28W02600) at 1.0 mils dry per coat.
 - b. Second and Third Coats: ProMar 200 Zero VOC Interior Latex Flat (B30-2600 series), Flat sheen at 1.6 mils per dry coat.
4. Gypsum Board (Ceilings):
 - a. First Coat: ProMar 200 Zero VOC Latex Primer (B28W02600) at 1.0 mils dry per coat.
 - b. Second and Third Coats: ProMar 200 Zero VOC Interior Latex Flat (B30-2600 series), Flat sheen at 1.6 mils per dry coat.
5. Gypsum Board (Walls):
 - a. First Coat: ProMar 200 Zero VOC Latex Primer (B28W02600) at 1.0 mils dry per coat.
 - b. Second and Third Coats: ProMar 200 Zero VOC Interior Latex Eg-Shel (B20-2600 series), Eg-Shel sheen at 1.7 mils per dry coat.
6. Wood (Stained with Clear Finish):
 - a. First Coat (Softwoods Only): Minwax Pre-Stain Wood Conditioner.
 - b. Second and Third Coats: Minwax Wood Finish (250 VOC Compliant) Interior Wood Stain. (Stain shall be selected by Architect from full line of 18 available colors.)
 - c. Fourth, Fifth, and Sixth Coats: Minwax Fast-Drying Polyurethane Satin Clear Varnish, Satin sheen at coverage rate of 600-700 square feet per gallon.

3.8 CLEANING:

- A. Cloths and cotton waste that might constitute a fire hazard shall be placed in closed metal containers or destroyed at the end of each day. Upon completion of the work, all staging, scaffolding and containers shall be removed from the site or destroyed in an approved manner. Paint spots, oil or stains upon adjacent surfaces shall be removed and the entire job left clean and acceptable.

END OF SECTION

DIVISION

15

MECHANICAL

SECTION 15050 - BASIC MATERIALS AND METHODS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements apply to the work specified in this Section.
- B. Separation of specifications into sections is for convenience only and is not intended to establish limits of work or liability. The following are the Sections that will apply to this project.

- 15050 - Basic Materials and Methods
- 15250 - Piping and Equipment Insulation
- 15800 - Heating, Ventilation and Air Conditioning
- 15850 - Testing, Adjusting, and Balancing of Air Systems

1.2 DESCRIPTION OF WORK

- A. The work to be done under this heading includes the furnishing of labor, materials, equipment, and service necessary for and reasonably incidental to the proper completion of all mechanical work as shown on the drawings and herein specified.
- B. Visit and examine the job site, and with all authorities concerned in order to become familiar with all existing conditions pertinent to the work to be performed thereon. No additional compensation will be allowed for failure to be so informed.
- C. Materials and equipment shall be new, except where otherwise indicated, of the best quality, with same brand of manufacturer for all similar material. All equipment shall be installed in accordance with manufacturer's requirements. Equipment with electrical components shall be laboratory tested.
- D. All work shall be performed in a neat and workmanlike manner, and in accordance with all codes, standards, and requirements of the industry. All workers shall be trained in the tasks they perform. Training shall be by an industry accepted trade school.
- E. In general, provide the installation of HVAC systems and building renovations complete with all ductwork, equipment, etc.
- F. Regardless of titles and subdivisions herein employed, consider these specifications as one complete document with General Section applying to all other sections. All

bidders are cautioned to read entire specifications and to thoroughly familiarize themselves with all requirements thereof.

- G. Check all specifications and all drawings and bring to attention any conflicts or variations as shown as noted.
- H. Specifications and accompanying drawings apply to all contracts or sub-contracts entered into for supplying material or labor for construction of work specified herein and shown on drawings.
- I. Protect Owner and his agents including Construction Manager, Architect and/or Engineer from any and all damages and expense arising from fulfillment of contract and at completion of work repair all damages done.
- J. For any points which are not clear, or for items and/or details which the Contractor feels are in need of clarification, consult the Architect before submission of a proposal.
- K. The drawings and the specifications are complementary and what is shown and/or called for on one shall be furnished and installed the same as if shown and/or called for in the other.
- L. In case of discrepancies and/or ambiguities in the drawings and/or in the specifications, the Architect shall be consulted prior to submission of a proposal. Failure to do so on the part of the successful bidder shall be construed as explicit agreement on his part to abide by the Architect's decision in such matters.
- M. The word "provide" as used in these Specifications and on the Drawings shall be termed to mean "furnish and install".
- N. Contractor shall include in base bid the connection of all sewer, storm drain and water piping to mains as shown on the drawings. Contractor shall include all material and all costs for complete installation.
- O. If the Contractor notices during the bidding any items of the contract documents which will violate any applicable code, these items shall be brought to the attention of the Architect before the bid date. Failure to bring these items to the attention of the Architect shall be construed as explicit agreement that the Contractor has included in his bid price any and all modifications necessary to complete the project in accordance with all applicable codes.

1.3 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. All exposed piping, ductwork and other equipment requiring painting will be painted under PAINTING SECTION. Leave all these surfaces clean of oil, dirt, plaster, etc., ready for painting section's work.
- B. Power wiring for all equipment shall be done under ELECTRICAL SECTION.
- C. Provide approved wiring diagrams to the Electrical Contractor showing interlocking of all equipment and controls, assisting in all wiring problems affecting his equipment, checking and verifying that same is wired correctly under the Electrical Section for proper operating of all mechanical items.
- D. Furnish under this section all heating, air conditioning, ventilating and other mechanical systems controls, starters, firestats, relays, and related equipment.
- E. Openings for all access doors, relief and return air grilles, etc., shall be provided under the respective trade sections.
- F. Curbs, flashings, etc., for exhaust fans, vents, etc., shall be provided under the respective sections.
- G. All HVAC control wiring shall be furnished and installed by Building, Automation and Temperature Control Contractor.
- H. Piping and ductwork penetrations through fire rated partitions/floors shall be fire sealed in accordance with the UL fire resistance directory. See Sealant Specification for materials. The integrity of the fire rating, as indicated on the architectural drawings, shall be maintained.

1.4 QUALITY ASSURANCE

- A. The Contractor bidding on this portion of the work must be fully experienced in installations of equal size, complexity, and quality, and must be licensed to perform such work as required by the Louisiana State Legislature, R.S.37:2152-2163.
- B. In bidding he acknowledges that he fully understands the scope of work and design, and has the ability for the contract price to assemble and install the equipment, piping and ductwork shown or specified, so as to mold same into a satisfactory workable system and arrangement.
- C. Contractor shall recognize that a fault or error in his work remains his responsibility regardless of whether such difficulty was discovered after the work had progressed, and shall make corrections at no cost to the Owner.
- D. Adequate and competent constant supervision shall be provided by Contractor to assure that work is done in accordance with good standard practice and workmanship

and with intent of drawings and specifications. Contractor shall recognize that amount of information and detail could be provided to contract documents is limitless and could extend into every minute detail and sequence of operations, to a point where only workmen would be required, without drawing on ability, experience and ingenuity of the Contractor.

- E. All work shall be installed in strict accordance, with all existing local and state codes and ordinances, with National Board of Fire Underwriters
- F. This Contractor shall secure all permits and inspections and shall pay all fees and taxes and shall provide Owner with certificates of approval from agencies having jurisdiction over various phases of work.
- G. Contractor shall maintain and service all equipment until time of acceptance by Owner. Contractor shall include all required service access in the installation as required by the manufacturer and governing codes.
- H. Prior to starting any work, the Contractor shall submit a quality assurance plan for approval by the Architect. In the quality assurance plan, the Contractor shall provide the following information:
 - 1. List of all sub-contractors and equipment suppliers.
 - 2. List of all foreman and job superintendents including job experience for all trades.
 - 3. Construction time schedule demonstrating coordination with other trades and showing detailed time lines for test and balance and commissioning being completed prior to final punch list inspection.

1.5 SUBMITTALS

A. Shop Drawings and Submittal Data required:

- 1. Submit to the Architect for review, complete descriptive information and dimensional data on all items of equipment, materials and accessories, including duct, equipment and sprinkler layouts. Piecemeal submissions shall not be approved. Written approval thereof must be obtained before ordering or installation. The following shall be submitted:
 - Ductwork Layout
 - Insulation
 - Diffusers, Grilles & Registers
- 2. Shop drawings and submittal data shall be considered to be instruments of service only and submitted for the sole purpose of convenience to the Contractor to assist him in the performance of the contract. The Architect's review of the shop

drawings and submittal data shall not supersede these specifications, the accompanying drawings, or the contract terms, unless specifically covered by a properly executed change order, and then only to the extent specifically and explicitly stipulated therein.

3. Submit in accordance with requirements of Architectural Sections, Division 1.
 4. Ductwork shop drawings shall be at a minimum 1/4" scale. Duct shop drawings shall show the following:
 - a. All structural members larger than 4".
 - b. All hydronic piping 2" or larger.
 - c. All conduit 2" or larger
 - d. All duct fittings, take-offs, volume dampers, control devices and fire dampers.
 - e. All grilles, louvers, registers and diffusers.
 - f. Duct dimensions and insulation methods.
 - g. Duct dimensioned from structural beams and columns.
 - h. Architectural ceiling heights, furrings, chases, etc.
 - i. Cross-sections in areas of congestion or conflict.
 - j. Installation details for all duct and related equipment.
 - k. Lights, speakers, smoke detectors and other ceiling mounted devices.
- B. After completion of project Contractor shall turn over to the Architect complete operating and maintenance instructions including listing of supply and repair items and locations of places to purchase same. Comply with requirements of Division 1 Sections.
- C. Substitutions:
1. All material, equipment, methods, and accessories entering into the work under this section of contract are subject to approval or disapproval of the Owner. Approval of any manufacturer, material, or product shall not constitute a waiver of Owner's right to demand full compliance with contract requirements, including shape, size, quality and performance.
 2. Equality of materials is that established by opinion of Owner. Decision of Owner is final.
 3. Whenever a material or article of equipment is specified by use of a proprietary name, or by naming the manufacturer or vendor, any material or article which will perform adequately the duties imposed by the design will be considered for substitution, providing it is of equal substance, and function, meets specifications, and is aesthetically acceptable to the Owner. Refer to Division 1 Sections for approval procedures.

4. Literature, technical data, etc., includes complete data and samples if necessary, with submissions for substitutions. Burden of proof that material offered for substitution is equal, or superior, in construction and efficiency to that named, rests on Contractor, and unless proof is satisfactory to Architect, substitution will not be approved. Contractor shall note any deviations from specified equipment with the substituted submittal. Failure to note deviations will result in rejection of substituted equipment and materials.

D. See Architectural Specifications for "As-Built" requirements.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

Take necessary precautions to protect all material, equipment, apparatus and work from damage. Failure to do so to the satisfaction of the Architect will be sufficient cause for the rejection of the material, equipment or work in question. Contractor is responsible for the safety and good condition of the materials installed until final acceptance by the Owner. Comply with equipment manufacturer's requirements. No insulation or electrical components, shall be subject to water damage.

1.7 JOB CONDITIONS

- A. Accompanying drawings, including plans, details, diagrams, notes, etc., are shown to limit and explain structural conditions, construction requirements, sizes, capacities and method of installation and erection. Structural and other conditions may require certain modifications and adjustments from conditions shown. Such deviations are permissible; however, specific sizes capacities and requirements affecting the satisfactory performance and operation of the installation shall remain unchanged. Make allowance for normal job conditions and interferences.
- B. Whenever it becomes necessary to shift ducts or pipes or to change shape of ducts, such changes shall be referred to Architect for approval.
- C. Ask for details whenever uncertain about method of installation. Lack of details not requested shall not excuse improper installation and correction shall be responsibility of Contractor. Contractor shall consult manufacturer for details specific to their items of equipment.
- D. Furnish detailed duct layout and equipment room shop drawings based on field measurements and actual job conditions.
- E. Schedule and perform all mechanical work to avoid delays to the Contractor and other trades.

- F. All piping, cleanouts and covers, and other mechanical items in way of construction or remodeling, shall be rerouted, relocated or otherwise adjusted to work out with such construction or changes shown or specified in any or all of various sections of specifications. Unknown piping that is encountered will be referred immediately to Architect for method of disposition before continuation of work.
- G. The Contractor shall review the architectural drawings to become familiar with the phasing of construction required for this project.

1.8 GUARANTEE AND SERVICE

- A. Guarantee all equipment, materials, and workmanship for a period of one (1) year following date of acceptance.
- B. During the period of guarantee any defects in equipment, materials, or workmanship shall be promptly corrected without cost to the Owner.
- C. Guarantee includes equipment capacity and performance ratings specified without excessive noise levels. Any deficiencies in equipment capacity specified shall be promptly corrected.
- D. Guarantee does not include maintenance items.

PART 2 - PRODUCTS

2.1 ACCESS PANELS

- A. Provide all access panels necessary for proper access to valves, traps, fixture connections, control devices or other items installed under this contract.
- B. Panels to be Milcor, Type M, or KARP Model D3C-214M hinged with screwdriver lock or as indicated on drawings for special locations, minimum size 12" x 12" or larger as required for proper access.
- C. Exact locations for panels to be directed by Architect.

2.2 TOOLS AND SCAFFOLDING

Furnish all tools, equipment, scaffolding and other facilities required to properly and expeditiously perform the work.

2.3 SIPHON PREVENTORS

Furnish and install on all equipment and fixtures requiring same, backflow preventors or vacuum breakers of a type approved by the Louisiana Health and Human Resources. Water connections to fixtures and equipment shall be made in such a way as to prevent back siphonage when the water supply is out or the pressure drops. Provide reduced pressure type back flow preventors where indicated on drawings. They shall be Watts series 900 or Febco Series 825, size as indicated on drawings.

2.4 SLEEVES AND THIMBLES

- A. Pipe sleeves - wrought iron or cast iron of sufficient size for piping and installation to be installed in floors, walls below grade, and grade beams where piping passes through.
- B. Thimbles above grade - heavy galvanized steel of proper size to allow freedom of piping and insulation, set in floor or roof slab as work progresses, also to be installed in wall and partitions where piping passes through.
- C. Thimbles below grade - same as pipe sleeves above.
- D. Sleeves through floors extend 1" above finished floor. Caulk around and seal all piping in chases and piping passing through floor slab.
- E. Provide sleeve seals and shields for all pipe penetrations of ground floor slab.
- F. Provide UL listed fire-stopping in all pipe penetrations of rated floors and walls, see Architectural Specifications for Requirements.

2.5 BUCKS, GROUNDS AND CHASES

- A. Be responsible for proper location and sizes or for any errors or omission in placing same.
- B. Failure to inform the General Contractor promptly of such requirements shall not relieve the Mechanical installer of the responsibility for providing a complete mechanical system.

2.6 HANGERS

- A. Horizontal piping above grade without hubs shall be rigidly supported. Distance between pipe supports:

1. 1/2" pipe 6'-0" maximum
2. 3/4" pipe 7'-0" maximum
3. 1" pipe 8'-0" maximum
4. 1 1/4" pipe 9'-0" maximum
5. 1 1/2" pipe and over 10'-0" maximum

- B. Hangers shall be similar to "Split Ring" type.
- C. Metal strap or wire will not be acceptable.
- D. For two or more systems of piping run parallel and with same grade trapeze hangers may be used.
- E. Use #22 gauge galvanized sheet steel saddles, minimum 18" long between the pipe covering and each pipe hanger on all insulated lines. Saddles shall extend along pipe runs and at least half way up piping on each side.
- F. All above grade horizontal sewer drain, vent, waste and similar piping shall be hung at every hub using the same type hangers as specified for other piping.
- G. All underground piping under building shall be hung from slab with stainless steel hangers. See detail on drawings.
- H. Rods supporting pipe hangers shall have the following dimensions:

1/2" to 2" pipe	3/8" rod
2-1/2" to 3" pipe	1/2" rod
4" to 5" pipe	5/8" rod
6" pipe	3/4" rod
8" through 12"	7/8" rod

Rods for trapeze hangers shall be a minimum of 3/8" and shall have the equivalent cross section, listed above, per pipe supported.

2.7 PAINTING AND IDENTIFICATION

- A. Equipment, including pumps, motors, and similar factory fabricated and assembled units shall be furnished with factory applied protective prime coat paint of finished baked enamel. Equipment surfaces damaged during course of construction or shipment shall be refinished by the Mechanical Contractor.
- B. Uncoated black ferrous piping and fittings shall be cleaned under this section and painted with one coat of enamel paint under PAINTING SECTION. Color of piping shall be selected by Architect. Hangers and supports shall be coated by dipping or

brush painting with one coat of asphalt varnish. Steel frame equipment supports shall be cleaned and painted with one coat of aluminum paint.

- C. Detached motor controllers, disconnects, etc., shall be identified with metal or plastic plates with etched letters to completely identify service of electrical equipment.
- D. Major control and sectionalizing valves shall be identified by means of etched brass plates bracketed to valve handle. Contractor shall prepare schedule of such identifying plates for Architect's approval.
- E. Exposed ductwork shall be cleaned under this Section and painted under Painting Section.

PART 3 - EXECUTION

3.1 FLASHING AND COUNTERFLASHING

All pipes and ducts that pass through roof and walls shall run so as not to interfere with the structural system and to permit proper application of base and counterflashing. All plumbing vents are to be finished with 2-1/2 pound sheet lead turned down into pipe. Other pipes to be provided with suitable curbs and flashed to roof or walls as indicated. Flues shall be properly flashed and counterflashed with approved type jacks. Roof drains shall have 2-1/2 pound lead sheet base secured to drain clamp and extending minimum of 2'-0" in all directions.

3.2 CLEANING, STERILIZING AND PIPING

- A. When all work has been finally tested, Contractor shall clean all fixtures, pipes and exposed work.
- B. All pipes shall be free from all obstructions.
- C. All plated and other finished products shall be thoroughly cleaned and polished.
- D. New water piping shall be sterilized as required by State Sanitary Code. Provide detailed reports describing sterilization method and duration for each piping section.
- E. All piping shall be installed so that it may expand and contract freely without damages to equipment, other work, or injury to piping system. All necessary swing joints, expansion joints, or offsets to protect piping, etc., shall be installed whether indicated or not. Piping shall be graded to allow for system drainage.

- F. Stainless steel or chromium plated floor, wall and ceiling plates shall be furnished on all exposed piping passing through floor, walls, or ceilings. Plates shall be secured in place with round head screws or toggle bolts of proper size and type for adjacent construction.
- G. All piping shall be installed and sized as indicated on plans and be of equivalent materials to piping as hereinafter specified.
- I. All piping shall be installed with runs arranged parallels or perpendicular to walls and ceilings with symmetrical and equal spacing between parallel pipes. Offsets shall be made using factory fittings, bending of piping shall not be accepted.
- I. Notify Engineer a minimum 72 hours prior to enclosing piping in concealed spaces so that piping may be inspected.

3.3 TESTING AND INSTRUCTION

- A. Piping shall be tested to pressure hereinafter specified. Where pressures are not mentioned, it shall be understood that testing to 1-1/2 times service conditions, before insulation is applied, will be acceptable. All tests shall be held for a minimum of 24 hours before inspection. Test pressures shall not exceed the rated working pressure of any system component.
- B. Furnish all necessary gauges, pumps, test plugs, and temporary connections and shall test sections of the building as work progresses.
- C. All new underground sewerage, waste and storm drainage piping shall be plugged at outlets and tested hydrostatically to 10 psi before being covered. Notify Engineer a minimum 72 hours prior to any backfill of underground piping so that piping may be inspected. Failure to notify Engineer prior to backfill will constitute a rejection of the underground piping installation. All other drainage piping, vent and waste risers shall be plugged and tested by filling with water from top to bottom of each floor prior to being connected to fixtures. Tests shall be held a minimum of 24 hours.
- D. All new cold and hot water supply piping shall be tested hydrostatically to 125 pounds per square inch before application of insulation. Test shall be held a minimum of 24 hours.
- E. All new gas piping shall be air tested to a pressure of 75 PSI. During the test, all joints shall be painted with a soap solution to test for leak. The test shall be held a minimum of 24 hours.
- F. All tests shall be made in the presence of the Architect or his representative. Where pipes or connections in new piping are found to leak, they shall be made tight and the tests repeated.

- G. Make all necessary adjustments to controls, dampers, valves, etc., to obtain best operation first with empty building and later under actual conditions. A minimum of two job site visits required.
- H. Thoroughly check the operation of each item of equipment and controls while testing, without waiting first for the Owner or Architect to complain about their operation. Verify that same are wired correctly and completely, notifying the proper parties for necessary corrections. Thoroughly instruct the Owner's representative in the operation and care of controls, individual equipment, and entire system. Provide training for each equipment item to include recommended maintenance procedures, control adjustments and system installation specifics.
- I. Provide Architect with six (6) copies of balance reports as hereinafter specified. See Section 15850.
- J. After adjustment period and before acceptance replace construction filters specified in 3.7 with specified type.

3.4 CUTTING AND PATCHING

Cooperate to the fullest extent with all other trades to reduce to a minimum the amount of cutting and patching of other work necessary for this installation. Do not cut or patch the work of other trades but arrange to provide cutting templates in time, or otherwise pay the respective other contractors for changing theirs, to accommodate this work. No cutting into any structural units likely to impair the strength shall be done without the approval of the Architect.

3.5 CLEAN UP

Remove debris, surplus and waste materials, oil, grease or stains resulting from the work performed and leave the premises in a broom clean condition AT THE END OF EACH WORKING DAY. All debris, surplus and waste material shall be removed completely from the job site.

3.6 COMMISSIONING

- A. Contractor shall install all items of equipment as identified in this specification in strict accordance with manufacturer's requirements (whether identified in this specification or not), shop drawings and contract documents. Contractor shall coordinate with Electrical and Building Automation and Temperature Control System Contractors to insure a complete installation. Start-up of all equipment shall be by manufacturer authorized representative. Start-up services shall be provided for as long a period of time as is

necessary to insure proper operation of the equipment items. The start-up technician shall conduct all operating tests as required to insure the equipment is operating in accordance with design parameters. Complete testing of all safety and emergency control devices shall be made. The start-up technician shall submit a written report to the engineer (prior to final punch list inspection) containing all test data recorded as required above and a letter certifying that the equipment is operating properly.

B. Other specific items of commissioning shall be as follows:

1. Visually inspect insulation system to verify that insulation is continuous and vapor barrier is complete. Verify there is no condensation or hot spots.
2. Ductwork shall be tested by the balancing Contractor. See Section 15850.
3. Provide written reports for all startup and commissioning tests listed above for Engineer review prior to final punch list inspection.

3.7 OPERATION OF AIR-HANDLING UNITS DURING CONSTRUCTION

Contractor shall provide 4"-85% efficient filters for units with 1.0" ESP and greater or (sets of 2) MERV 12, 1" filters for units under 1.0" ESP for air-units operated during construction. In addition roll type filter media shall be provided on all return air grilles and unit openings. Contractor shall be responsible for changing media as required. The Contractor is to protect the air unit coils and keep air-unit and duct interior surfaces clean. If the Contractor fails to comply with the filtration requirements, the Contractor shall clean and/or replace the coils and duct system at his expense.

END OF SECTION 15050

SECTION 15250 - PIPING AND EQUIPMENT INSULATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Provide a complete system of insulation, as herein specified, for both inside and outside of building.
- B. The General Provisions of the Contract including General and Supplementary Conditions and General Requirements apply to the work specified in this Section.
- C. Refer to Section BASIC MATERIALS AND METHODS, which is applicable to this Section.
- D. Insulation shall include insulating materials, their applications, finish, bands, tie wire and weather protection for all piping, fittings, valves, and equipment as indicated and specified herein.

1.2 GENERAL

- A. All insulation shall be applied in a workmanlike manner by skilled workmen regularly engaged in this type of work.
- B. All pipe insulation shall have COMPOSITE flame and smoke hazard ratings as tested in accordance with standard testing methods (NFPA) 255 and UL 723).
- C. Composite ratings shall not exceed: flame spread 25, smoke developed 50.
- D. Accessories such as adhesive, mastic, cement, tapes and asbestos cloth shall have the same component ratings as listed above.
- E. THE INSULATION CONTRACTOR SHALL CERTIFY IN WRITING, PRIOR TO INSTALLATION, THAT ALL PRODUCTS TO BE USED WILL MEET THE ABOVE CRITERIA.

PART 2 - PRODUCTS

2.1 AIR CONDITIONING DRAINS AND REFRIGERANT PIPING

- A. Insulate all air conditioning condensate drains and refrigerant pipe, fittings, flanges and valves with flexible foamed plastic tubing insulation, J-M Aerotube 11, Rubatex, or approved equal. Thickness to be 3/4 inch.
- B. Insulate all horizontal waste piping (new or existing) above ground that receives A/C condensate from drain to vertical stack. Also insulate the "P" trap of those drains. Insulation shall be same as specified for above ground domestic cold water piping, fitting flanges and valves except thickness shall be 1/2 inch for all pipe sizes.

2.2 DUCT INSULATION

- A. DUCT SIZES SHOWN ON DRAWINGS ARE FREE AREA SIZES. See Section 15800 for insulation and duct material and type required for each application. Insulation shall be as per the following:
- B. Lined Duct system - All lined ducts shall be lined with Knauf Duct Liner E-M, Manville Lina-Coustic ductliner, or approved equal. Duct Lining shall be applied in strict accordance with the latest edition of SMACNA's "HVAC Duct Construction Standard Metal & Flexible." Mechanical fasteners shall meet "Standards for Mechanical Fasteners MF-1-1975." Length of mechanical fasteners shall not compress the insulation more than 1/8" and shall be installed perpendicular to the duct surface. Adhesive shall conform to ASTM C 916 and be applied to the sheet metal with a 90% minimum coverage. All exposed edges of the duct liner material shall be coated with the same adhesive. All rips and tears shall also be repaired using adhesive. All internal duct areas shall be covered with duct liner. Transverse joints shall be firmly butted with no gaps, and coated with adhesive. Longitudinal corner joints shall be overlapped and compressed. For velocities from 4001 to 6000 FPM, metal nosing shall be applied to all upstream transverse edges to additionally secure the insulation." Liner shall be 1" thick, 1.5 PCF.
- C. Exterior Duct Wrap - Exterior insulation duct wrap shall be 2" thick .75 PCF fiberglass wrap with F.S.K. jacket.

PART 3 - EXECUTION

3.1 WORKMANSHIP AND INSTALLATION

- A. All insulation shall be applied per manufacturer's specifications and installation requirements.
- B. Insulation shall be applied over clean dry surfaces after all test have been performed and approved.

- C. Methods of application and other details not specified herein shall be in accordance with manufacturer's recommendations, which shall constitute minimum standards.
- D. Sheet Metal Saddles - 10" long shall be provided on all hangers supporting insulated lines. They shall be fabricated to conform with the outside diameter of the pipe covering and shall be fabricated from 22 gauge sheet iron for pipe through 2-1/2" 20 gauge sheet iron for pipes through 8" and 16 gauge for all pipes over 8".
- E. A rigid insulation material shall be used at each pipe hanger as an insert and the pipe covering shall pass full thickness through the hangers.
- F. On all outdoor piping insulation above ground (including refrigerant piping), provide aluminum jacket 0.016 inch thick with longitudinal z-joint secured with preformed 2" wide butt strips, as manufactured by KNAUF, MANVILLE or approved equal. Provide preformed aluminum fitting cover on all fittings.

END OF SECTION 15250

SECTION 15800 - HEATING, VENTILATION AND AIR CONDITIONING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements apply to the work specified in this Section.
- B. Refer to Basic Materials and Methods Section 15050 which shall apply to work in this Section.

1.2 DESCRIPTION OF WORK

- A. The work to be done under this Section includes the furnishing of all labor, tools, materials, equipment and services necessary for and reasonable incidental to the installation of complete air conditioning and heating and ventilation equipment as shown on plans and herein specified, excepting only work and/or materials indicated as being done and/or furnished under other sections.
- B. Contractor shall refer to other Sections of the Specifications which may be applicable to or associated with this Section.

1.3 RELATED WORK SPECIFIED IN OTHER SECTION

- A. Electrical Section will provide all power wiring including furnishing and installing of disconnect switches where specified. Control wiring for air conditioning equipment shall be provided by Building Automation and Temperature Control Contractor.
- B. Other Sections will provide and install structural supports for equipment. These supports must be checked and coordinated by this Section so that they suit the equipment which is to be supported.
- C. Other Sections will provide all platforms slabs, lintels and curbs, as directed by this Section, to accommodate the mechanical equipment.
- D. Mechanical Contractor shall provide starters for motors furnished under this Section.

1.4 QUALITY ASSURANCE

- A. These specifications with accompanying drawings, require complete apparatus, fully erected and in successful operating condition. Perform all work in best, most substantial manner.
- B. All equipment furnished and installed under this Section shall be U.L. or E.T.L. approved and labeled where applicable.
- C. All unfired pressure vessels furnished under this Section shall be ASME and National Board stamped.
- D. All manufacturers products shall comply with the requirements of this Section.
- E. Employ qualified sheet metal workers in accordance with SMACNA Duct Construction Standards.
- F. Qualify welding/brazing process and welder/brazer performance in accordance with AWS B2.2, Standard for Brazing Procedure and Performance Qualification, or ASME Boiler and Pressure Vessel Code, Section IX (See 15050). Provide copy of certification for welding and brazing processes.
- G. Soldering processes shall conform to ASME B 31.3, Process Piping and Copper Development Association recommended practices.

1.5 SUBMITTALS

- A. Contractor, before beginning work, shall submit dimensional shop drawings (in accordance with requirements of Division 1), for approval, for all duct systems. Contractor is responsible to coordinate all plumbing, piping, sprinkler, ductwork and electrical to avoid all conflicts. Conflicts encountered after work has started will be corrected at Contractor's expense.
- B. Where the equipment installed is of a different configuration and/or size than that shown on the drawings, Contractor shall assume all responsibility to conform with the intent of the contract documents. The Architect shall be advised of any changes and deviations for his approval. The same shall be true for any field modification required because of "on job" construction conditions.

PART 2 - PRODUCTS

2.1 HVAC DUCTWORK

- A. Provide and install a complete system of ductwork as herein specified to include, but not limit to supply, return, exhaust and fresh air with grilles, registers, diffusers

and appurtenance to provide a complete functional and operational system. Duct sizes shown on drawings are free area dimensions. Design shall be as described in the latest edition of SMACNA manuals and as per the following:

1. Galvanized sheet metal shall be lock form quality per ASTM A653 with a G90 zinc coating.
2. Outside air and exhaust air ducts shall be galvanized sheetmetal with air-tight seams and as per applicable sections of SMACNA manuals for low velocity ducts. Insulate outside air and exhaust air ducts with internal liner as per SECTION 15250.
3. Supply and return ducts for low pressure system and, low velocity systems shall be galvanized sheetmetal with airtight seams and as per applicable section of SMACNA manuals for low velocity ducts. All ducts shall be insulated with 2" exterior wrap as per Section 15250.
4. Rectangular ductwork for medium pressure, high velocity systems shall be galvanized sheetmetal with airtight seams and as per applicable section of SMACNA manuals for high velocity ductwork. Insulate with 2" exterior duct wrap as per Section 15250.
5. Round rigid ductwork shall be all round single wall spiral pipe and fittings, galvanized steel, as per applicable sections of SMACNA manuals for high velocity duct. Insulate with 2" exterior duct wrap as per Section 15250. Seal all seams, joints and wall penetrations with hardcast as herein specified.
6. All ducts shall be sealed per SMACNA Seal Class A. All joints, longitudinal seams and wall penetrations of all supply, return outside air and exhaust ducts shall be sealed with an elastomeric tape which shall consist of a pressure sensitive layer of modified butyl rubber sealer laminated to a foil backing material which shall conform to surface variations and irregular areas and shall not harden crack or peel. The sealant shall be waterproof and shall be a minimum of 15 mils thick. All ductwork shall be cleaned and prepared and sealant shall be applied strictly in accordance with manufacturer's instructions and recommendations. Sealant shall be Hardcast FG-1402, Suretape #653 or approved equal, at Contractor's option flanged gasketed duct system may be used for POSITIVE PRESSURE SYSTEM ONLY.
7. Flexible round duct where indicated on plans shall be listed by Underwriters' Laboratories, Inc., under UL-181 standards as Class I flexible Air Duct Material complying with NFPA Standards 90A. Ducts shall be rated on maximum pressure of 6 inches WG positive and 2 inches WG negative. The duct shall be factory fabricated assembly composed of: an inner duct of woven and coated fiberglass providing an air seal and bonded permanently to corrosion resistant coated steel wire helix: a 2" thick fiberglass insulating blanket and low permeably

outer vapor barrier of fiberglass reinforced metalized film laminate. Pressure drop not to exceed .15" SP at 500 Fpm through 6" or larger duct. Maximum length of flexible duct shall not exceed 8'-0". Connect flexible round duct with ½" wide nylon positive locking nylon straps on inner duct and outer duct.

8. Splitter dampers shall be installed where branches take off of main trunk ductwork, where ducts divide or where shown on the drawings. Splitters shall be fitted with nickel plated damper regulators in finished areas. Splitters shall be factory fabricated in accordance with SMACNA Duct Construction Standards.
- B. Flexible connections shall be provided between each fan unit and ductwork on supply side and also on return side. Material shall be flexible fire-resistive material, minimum 4" wide, UL listed, with no metal to metal contact.
 - C. Duct supports for rectangular ducts shall be a minimum 1" X 18 gauge galvanized steel bands. Hanger bands shall be bent under lower corners and secured with self-tapping screws at corners and six (6") inch intervals up the sides. Distance between hangers shall be as recommended by SMACNA manual for low and medium ductwork. Ductwork shall be rigidly supported to prevent vibration. Duct attachments to structure, lower hanger attachments, ducts traps and rods and trapeze angles shall be in accordance with SMACNA Low Pressure and High Pressure Duct Standards.
 - D. Where the ducts pass through walls, draft stops or partitions, the space shall be packed with non-combustible materials, filling all voids around duct.
 - E. Fire dampers with fusible links shall be installed at all points in ductwork where indicated on drawings, and/or as required by NFPA, 90-A, AND MECHANICAL CODE OF THE IBC.
 - F. Provide radius elbows unless specifically indicated otherwise or space prohibitive. Rectangular radius elbows shall be factory fabricated with a centerline radius of not less than the width of the duct. Round duct elbows shall have a minimum center line radius of 1-1/2 times the diameter of the duct and shall be smooth where possible. Provide square elbows where indicated or space prohibits the use of radius elbows. Square elbows shall be factory fabricated with double thickness airfoil turning vanes pre-assembled and securely attached to runners.
 - G. In general, vertical risers and other duct runs, where the method of support specified above is not applicable, or not specifically detailed on drawings, shall be supported by substantial angle brackets designed to meet field conditions, installed to allow for duct expansion and approved by Architect.
 - H. Provide exposed operators for operation of dampers and splitters in inaccessible ceilings, operators shall be chrome plated.

- I. Maximum duct leakage shall be +/- 5%, SMACNA Seal Class A. Ductwork between AC unit and diffuser shall be designed for 1.0" static pressure. Outside air, return air and exhaust air systems shall be designed for 1.0" static pressure. Construct ductwork in accordance with SMACNA Duct Construction Standards for the specified pressure class.

2.3 DIFFUSERS, GRILLES, REGISTERS AND LOUVERS

- A. All sizes shall be as indicated on drawings.
- B. All outlets shall be balanced to obtain specific air quantities free of all objectionable draft and noises.
- C. Diffusers, grilles and registers shall be of normal commercial grade as indicated on Schedule on drawings.
- D. Louvers shall be as scheduled and/or detailed on drawings.
- E. Insulate the back of all diffusers, grates and registers with ¾ Armaflex or Rubatex.

2.4 FIRE DAMPERS

Fire dampers shall be solid sheet curtain type, dynamic closure type corrosion resistant galvanized steel construction. Dampers mounted in the horizontal position shall be closed by a stainless steel negate spring. Damper to be easily reset through standard access panel for required periodic maintenance. Access panels are required for access to all fire dampers, minimum size 12 X 12 inches. Dampers shall be 100% out of air stream. Provide fusible links rated at 160 degrees F.

2.5 ACCESS DOORS

Access doors shall be installed in ductwork wherever required for ready access to any operating part. Doors shall not be smaller than 12 X 12 inches, with brass hinge and sash type fasteners. Ducts 30" or larger shall be supplied with minimum 18 X 18 inch access doors. Doors shall be double wall insulated type, hinged with sash locks and gaskets.

2.6 PIPING AND FITTINGS

- A. Furnish and install all piping related to air conditioning systems including make-up water piping, air conditioning condensation drains, and other miscellaneous piping.

- B. All piping shall be installed parallel and square with building lines and shall be sloped to permit drainage, with suitable provision for drainage at all low points.
- C. Piping shall be arranged to maintain headroom and keep passageways clear and where necessary shall be offset to maintain the required clearance and conform with the structural features of the building. Contractor shall determine in advance of construction locations for all piping sleeves, hangers, etc. No allowance will be made for extra due to inaccurate location of sleeves, piping or equipment.
- D. All piping shall have provisions for expansion and contraction with anchorage at each point shown on the plans and/or as required.
- E. Full length pipe shall be used where possible, short lengths and couplings will not be permitted. After cutting, all pipes shall be reamed out to full bore and before erection, all cutting and foreign matter shall be removed from the inside of pipes. Screwed joints shall be made tight without caulking or the use of lead or paint and no lubricant shall be used except flake granite and cylinder oil paste, or approved pipe compound applied to make threaded pipe.
- F. Pipe sleeves shall be provided for the passage of all pipe through walls, floors and partitions.
- G. All condensate drain piping shall be installed using ASTM B88 type "L" hard drawn copper with wrought copper sweat fittings. Changes in direction of piping shall be made with short turn tee pattern or 45 degree wye fittings with brass cleanout plug. Insulate drain piping per Section 15250, minimum drain on fan coil units – 3/4", air handling units – 1-1/4".
- H. See Section 15900 for valves, fittings, unions, gaskets, bolts and nuts.
- I. See Section 15050 for hangers.

2.7 PIPING AND PIPING IDENTIFICATION

All piping at each piece of equipment shall be stencil to show the service and direction of flow. Stencils shall be black on a white background with letters one (1") inch high spaced at approximately forty-eight (48") inches apart by equipment or 10 foot intervals along piping runs.. Pressure-sensitive pipe markers ANSI Standard A 13.1 may be used in lieu of stenciling.

2.8 EXHAUST FANS AND OUTSIDE AIR INTAKES

- A. Size and quantity shall be provided as indicated on drawings.

- B. All roof exhaust fans and roof outside air intakes shall be provided with factory prefabricated curbs. Curbs shall be pitched as required for the roof slope. Verify with Architectural roof plan.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. All equipment and controls shall be installed in accordance with manufacturer's recommendations. Installation, adjustments and starting shall be done under supervision of manufacturer's representative.
- B. All ductwork and equipment shall be installed in a neat and workmanlike manner in accordance with the guidelines of NFPA 90-A, SMACNA and the best practice of the trade.
- C. Provide manual firestats, set at 125 degrees F, in return inlets of all fans and blowers and all exhaust fans of 600 cfm and over.
- D. This Contractor shall furnish and install any and all mechanical items which are required to complete the temperature controls which are to be provided under other sections of the specifications.
- E. All piping as specified under this section shall be tested to the following pressures:
 - Refrigerant piping - As recommended by manufacturer
 - Condensate drain - 10 psi

The method of application of tests and duration shall be as described in SECTION 15050. Maximum of 5% pressure loss during the duration will be acceptable.

- F. Upon completion of the installation of all work and equipment the Contractor shall start all equipment and make all necessary tests and adjustments to place entire heating, ventilating and air conditioning systems in a satisfactory condition for continuous safe operation of facilities.
- G. All filters shall be replaced with specified type after period of test and adjustment.

END OF SECTION 15800

SECTION 15850 - TESTING AND BALANCING OF AIR SYSTEMS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The Contractor shall furnish all labor, equipment and services necessary for and incidental to Air Systems Testing and Balancing.
- B. The Contractor shall procure the services of an independent testing and balancing agency. The Testing and Balancing Agency (TBA) specializes in testing and balancing of heating, ventilating, air-moving equipment, air-conditioning system and Hydronic systems. The Mechanical Contractor shall award the test and balance contract to the above agency as soon as possible after receipt of contract.
- C. Testing and Balancing shall not begin until the systems have been completed and are in full working order.
- D. Shop drawings must be provided to the TBA firm no later than 30 days after the final, approved shop drawings have been returned by the Architect to the Contractor.
- E. Duct leakage testing shall be the responsibility of the TBA subcontractor.
- F. Fire and smoke damper testing shall be done by the contractor and witnessed by the TBA firm.
- G. The final and complete Test and Balance Report shall be submitted, for approval, not less than two weeks before a final inspection of the Project is requested by the General Contractor. Failure to provide the Report shall be cause to delay the final inspection until the Report is Approved .
- H. Contractor is cautioned that test and Balance Report shall include both Grille counts, and Supply, Return, Outside Air and Exhaust Duct Traverses so that duct leakage can be calculated.

1.2 REFERENCES

- A. AABC – National Standards for Total System Balance.
- B. NEBB – Procedural Standards for Testing, Adjusting, and Balancing.

1.3 SUBMITTALS

- A. Field Reports: Indicate deficiencies in systems that would prevent proper testing, adjusting, and balancing of systems and equipment to achieve specified performance.
- B. Submit draft copies of report for review prior to final acceptance of Project. Provide final copies for Architect/Engineer and for inclusion in operating and maintenance manuals.
- C. Provide reports in soft cover, letter size, binder manuals, complete with index page and indexing tabs, with cover identification at front and side. Include set of reduced drawings with air outlets and equipment identified to correspond with data sheets, and indicating, thermostat locations.

1.4 QUALITY ASSURANCE

Perform total system balance in accordance with AABC National Standards for Field Measurement and Instrumentation, Total System Balance or NEBB Standards – Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems or Testing Adjusting and Balancing Bureau (TABBB)-National Standards for Environmental Systems Balance.

1.5 QUALIFICATIONS

TBA shall be a Company specializing in the testing, adjusting, and balancing of systems specified in this Section with minimum three years experience..

PART 2 - PRODUCTS

2.1 ADJUSTMENT DEVICES

Replacement of adjustable pulleys, additional balancing dampers, additional fan belts, pressure taps and fitting, hydronic balancing valves and any other devices or equipment required to effect proper testing, adjusting and balancing shall be provided shall be provided by the Contractor at no additional cost to the Owner.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that systems are complete and operable before commencing work. Ensure the following conditions:
 - 1. Systems are started and operating in a safe and normal condition.
 - 2. Temperature control systems are installed complete and operable.
 - 3. Proper thermal overload protection is in place for electrical equipment.
 - 4. Final filters are clean and in place. If required, install temporary media in addition to final filters.
 - 5. Duct systems are clean of debris.
 - 6. Fans are rotating correctly.
 - 7. Fire and volume dampers are in place and open.
 - 8. Air coil fins are cleaned and combed.
 - 9. Access doors are closed and duct end caps are in place.
 - 10. Air outlets are installed and connected.
 - 11. Duct system leakage is minimized.
- B. Beginning of work means acceptance of existing HVAC conditions.

3.2 INSTALLATION TOLERANCES

- A. Air Handling Systems: Adjust to within plus or minus 5 percent of design for supply systems and plus or minus 5 percent of design for return and exhaust systems.
- B. Air Outlets and Inlets; Adjust total to within plus 5 percent and minus 5 percent of design to space. Adjust outlets and inlets in space to within plus or minus 5 percent of design.

3.3 ADJUSTING – GENERAL

- A. Ensure recorded data represents actual measured or observed conditions.
- B. Permanently mark setting of valves, dampers, and other adjustment devices allowing setting to be restored. Set and lock memory stops.
- C. After adjustment, take measurement to verify balance has not been disrupted or that such disruption has been rectified.
- D. Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.

- E. At the time of final inspection the TBA agency may be required to recheck, in the presence of the Owner's Representative, specific and random selections of data, air quantities, and air motion recorded in the certified report. Points and areas for recheck shall be selected by the Architect. Measurements and test procedures shall be the same as approved for the initial work for the certified report. Selections for recheck, specific plus random, shall not exceed 10% of the total number tabulated in the report.

3.4 AIR SYSTEMS PROCEDURE (MINIMUM REQUIREMENTS)

- A. Test and adjust fan RPM to design requirements.
- B. Test and record motor full load nameplate rating and actual ampere draw.
- C. Test and record system static pressures, fan suction and discharge.
- D. Adjust all main supply and return air duct to proper design CFM.
- E. Test and adjust each diffuser, grille and register (new and existing as indicated on drawings). Reading and tests of diffusers, grilles and registers shall include design velocity (FPM) and as adjusted velocity, design CFM and adjusted CFM.
- F. Test and record outside, mixed air and discharge temperatures (D.B. for heating cycle, D.B. and W.B. for cooling cycle).
- G. In coordination with the ATC contractor, set adjustments of automatically operated dampers to operate as specified, indicated and/or noted.
- H. Test and adjust air handling and distribution systems to provide required or design supply, return, outside and exhaust air quantities.
- I. Make air quantity measurements in ducts by Pitot tube traverse of entire cross sectional area of duct.
- J. Measure air quantities at air inlets and outlets.
- K. Adjust distribution system to obtain uniform space temperatures free from objectionable drafts and noise.
- L. Use volume control devices to regulate air quantities only to extend that adjustments do not create objectionable air motion or sound levels. Effect volume control by duct internal devices such as dampers and splitters.
- M. Vary total system air quantities by adjustment of fan speeds. Provide drive changes required. Vary branch air quantities by damper regulation.

- N. Provide system schematic with required and actual air quantities recorded at each outlet or inlet
- O. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across the fan. Make allowances for 50 percent loading of filters.
- P. Adjust outside air automatic dampers, outside air, return air and exhaust dampers for design conditions.
- Q. Measure temperature conditions across air, return air, and exhaust dampers to check leakage.
- R. Where modulating dampers are provided, take measurement and balance at extreme conditions.
- S. Measure and record pressure differentials between designated spaces.

3.5 REQUIRED REPORTS TO BE SUBMITTED

The following reports shall be submitted, as a minimum, with a complete Title Page, Summary, and Instrument List. All data and nomenclature shall be provided, as required by AABC and/or NEBB Procedure manuals, for each device tested and balanced.

1. Electric Motors.
2. V-Belt Motors.
3. Air Moving Equipment.
4. Return Air/ Outside Air Data.
5. Duct Traverses.
6. Air Distribution Test Sheets.

3.6 COMMISSIONING

- A. Balancing Agency shall coordinate with the Mechanical Contractor the Commissioning requirements as here-in-before specified.
- B. Contractor is cautioned that the Owner, thru the Architect, reserves the right to check and verify any and all points and readings of the Test and Balance report. If 15% or more of the points do not agree with the report, then the Contractor shall re-test and re-balance the entire project and submit a complete new Report. If 15% or more of this new Data is independently verified and still does not agree with the Contractor's new Report, then the Owner has the right to hire an Independent Test and Balance Contractor and the Original Contractor shall be held responsible to pay these costs.

- C. All TBA deficiencies shall be corrected when found. Any deficiencies that are (for whatever reason) not corrected immediately shall be shown in the TBA report and listed on a summary sheet in the front of the TBA report. The TBA report must be completed and accepted by the Mechanical Engineer before the project is accepted and all items on the summary sheet shall become punch list items with dollar values assigned to them.

END OF SECTION

DIVISION

16

ELECTRICAL

SECTION 16010 – BASIC ELECTRICAL REQUIREMENTS

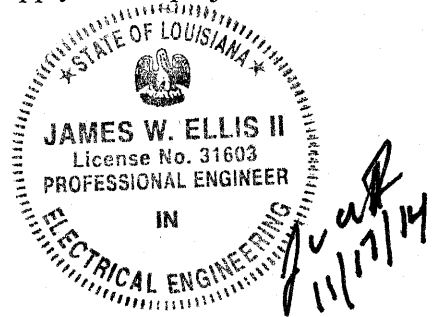
PART 1 - GENERAL

RELATED DOCUMENTS

All drawings and general provisions of the contract, including General Conditions, Supplementary Conditions, and other Division 1 Specifications, apply to this section.

Separation of Specifications into Sections is for convenience only and is not intended to establish limits of work or liability. The following sections apply to this project:

- 16010 – Basic Electrical Requirements
- 16100 – Basic Electrical Materials and Methods
- 16400 – Panelboards
- 16500 – Lighting Fixtures



DESCRIPTION OF WORK

Furnish all labor, tools, materials, fixtures, equipment, accessories, transportation, etc., required for a complete electrical lighting and power systems, complete with necessary auxiliaries as indicated on the drawings and specifications.

Also included in the work is the power wiring for connection of items indicated on the architectural plans, as well as power wiring for the equipment specified in DIVISION 15 – MECHANICAL.

Removal of existing electrical equipment not being reused.

DRAWINGS AND SPECIFICATIONS

The drawings showing the layout of electrical work indicate the approximate location of transformers, switchboards, panelboards, disconnects, outlets, and conduit routing. The contractor shall refer to architectural, structural, and mechanical drawings as well as equipment manufacturer's shop drawings and rough-in drawings, and adjust work accordingly to provide a coordinated installation. All adjustments and minor deviations necessary shall be made without additional cost to the owner. It shall be the electrical contractor's responsibility to see that all equipment such as pull boxes, junction boxes, panelboards, and other apparatus, that may require maintenance from time to time, is made accessible. Any condition that may occur during construction which conflicts with accessibility to the proposed installation of the electrical equipment, shall be brought to the Architect's attention prior to the point at which a change in location would require additional cost and delays to construction.

All electrical gear shall be mounted at or above the first floor slab or base flood elevation,

whichever is higher, unless noted otherwise.

The drawings and specifications are complementary and what is shown and/or called for on one shall be furnished and installed the same as if shown and/or called for on the other.

Where the Contractor is not certain about the method of installation, he shall ask the Architect for further installation details. Lack of details, not requested, will not be an excuse for improper installation.

When a color or other condition for a product is specified to be determined by the architect, the submittal for that item shall be clearly marked with the available options. (Do not select a color or other condition in the submittal) The architect shall be specifically asked by the contractor to provide the required information, and that product shall not be manufactured prior to obtaining such information.

LAWS, CODES, AND PERMITS

The latest accepted edition of the National Electrical Code (NFPA 70), National Fire Alarm Code (NFPA 72), and all State, Parish, City, and local building codes shall be considered a part of these specifications, and pertinent articles will not be repeated herein. These codes establish the minimum acceptable criteria where more stringent requirements have not been defined in these specifications and/or drawings.

The Contractor shall apply for all permits and pay all fees incidental to completing the electrical work. This Contractor shall give notice to the proper authorities in ample time for the work to be inspected and approved as it progresses, and no work shall be concealed until inspected and approved by authorized inspectors. If the plans or these specifications in any way conflict with the Code, State or Local Rules, these latter are to be followed, without expense to the Owner, but the Architect shall be notified of this condition and approval secured before changes are made.

Upon completion and before acceptance of work, a certificate of approval from the appropriate regulatory agency shall be furnished to the Architect.

No work shall be concealed until approved by the local inspector. Local regulations shall be adhered to.

The contractor shall assure that he does not install electrical equipment including raceways in or through areas restricted by the international building code and local building codes.

JOB SITE

Prior to submitting quotation for electrical work, Contractor shall visit and examine the job site with all authorities concerned in order to become familiar with all existing conditions pertinent to the work to be performed thereon. No additional compensation will be allowed for failure to be so informed.

Where existing equipment including raceways and wiring is in conflict with work of this project, the contractor shall rework/reroute/relocate this equipment as necessary.

TEMPORARY POWER

The Contractor shall be responsible for providing temporary light and power to the construction site as necessary to meet all of the OSHA requirements for construction, and as required by the general contractor and various sub-contractors.

SERVICE INTERRUPTIONS

Services to the buildings shall be kept in operation at all times during construction. If a situation occurs that the service needs to be interrupted, the Contractor shall be responsible for contacting the proper authorities to schedule the outage at a time that is convenient to the occupants. It shall be understood that this outage may have to be scheduled after regular working hours or on the weekends. Allowances shall be added to the Contractors bid to cover the cost of any overtime work. This shall come at no additional cost to the Owner after the bid date.

WARRANTY

The contractor shall guarantee all labor and materials for a period of twelve (12) months from the date of final acceptance. All defective materials and work shall be replaced with new materials or equipment. This shall come at no additional cost to the Owner.

PART 2 – PRODUCTS

MATERIALS

Equipment and materials shall be new and shall be listed by Underwriters Laboratories for the purpose for which they are being used. All material of similar use shall be of the same manufacturer.

Substitutions to materials listed on the drawings and specifications can be made as long as they are approved as acceptable by the Architect. Requests for prior approval shall be submitted no later than seven working days prior to bidding. All requests for prior approval shall be in writing by providing a hard copy of the submittal data to the engineer's office.

All termination lugs shall be rated 75 degree C minimum and shall be compatible with the number and size of wires to be terminated.

SUBSTITUTIONS

Names of manufacturers or catalog numbers are mentioned herein in order to establish a standard as to design quality. Other products similar in design and of equal quality may be used if submitted to the architect and found acceptable by him. Refer to the general conditions for additional information.

Any substitution to items specified, that are not approved prior to bidding, shall be brought to the attention of the architect and engineer as an alternative product prior to the official submittal of electrical products along with the specific reason for the proposed substitution. Refer to the general conditions for additional information.

When the contractor elects to use an acceptable alternate manufacturer's equipment, the contractor shall be responsible to coordinate the change with all trades affected and pay for any additional work required under this or any other division affected by the substitution.

SUBMITTALS

Within thirty days of the award of the contract, the Contractor shall be responsible for submitting six (6) copies of submittals containing catalog cuts and performance data for all material and equipment proposed for use. These submittals shall be reviewed by the Architect for general compliance to the contract documents. The Architect's review of these submittals in no way modifies the contract or relieves the Contractor from compliance with the contract unless a difference is clearly stated in the submission and specific acceptance is given by the Architect as a change to the contract.

Submittals shall be identified with the project name and the contractor's name and have the contractor's stamp showing that he has reviewed the submittal and found it to be in accordance with the plans and specifications. Submittals shall be bound.

Items of division 16 shall be submitted in one package.

Submittals that do not comply with the above may be returned, without review, for resubmission.

All shop drawings must be reviewed before the various factories start fabrication. The contractor shall allow a minimum of 30 days for this review.

Developing electronic or CAD files shall be the responsibility of the contractor. Electronic CAD drawings will not be provided to the contractor.

PART 3 – EXECUTION

INSTALLATION

Ask for details whenever uncertain about installation methods. Lack of details requested shall not excuse proper installation and corrections shall be the responsibility of the contractor.

AS-BUILT DRAWINGS & OPERATING INSTRUCTIONS

The Contractor shall be responsible for providing As-Built drawings to the Architect at the completion of the project. The Contractor shall make a reproducible set of the original contract drawings, and in a neat and understandable manner, show any significant changes made during construction. Unless noted otherwise in the contract documents, the Contractor shall provide one additional copy of these drawings to the Architect. The Contractor shall pay for all reproduction costs. Final payment shall be withheld until these drawings are accepted by the Architect.

The Contractor shall furnish two bound sets of any operating instructions and maintenance manuals to the Architect upon completion of the project.

CUTTING AND PATCHING

The Contractor shall be responsible for all cutting and patching that is required to complete the installation of the electrical systems. All work shall be coordinated between trades with strict accordance with the requirements of the General Conditions. Structural members shall not be cut or modified without the approval of the architect.

The Contractor shall be responsible for covering, caulking, or otherwise to make weatherproof all openings left in the structure for electrical work. This includes openings around conduit penetrations.

EXCAVATING AND BACKFILLING

The Contractor shall be responsible for all excavating and backfilling required to complete the installation of the electrical systems. All excess material and debris shall be removed. All backfilling shall be with sand. Backfilling shall be thoroughly tamped and compacted.

It shall be the Contractor's responsibility to locate all underground utilities before trenching and excavating. Care shall be taken to avoid damage to the existing utilities. Any damage shall be repaired or replaced by the Contractor at no expense to the Owner.

PAINTING

No painting shall be required under DIVISION 16, except for factory-finished items. Any damaged surfaces of factory items shall be repaired by the Contractor to an acceptable level determined by the Architect.

EXISTING EQUIPMENT

The Contractor shall be responsible for the removal and reinstallation of any electrical equipment, such as light fixtures, that shall be reused. Any existing electrical equipment that is removed and not reused shall be returned to the Owner. Any material that the Owner does not wish to keep shall be removed from the site by the Contractor.

When existing electrical items such as outlets are removed from service, care shall be taken to keep the integrity of the remaining electrical systems.

SERVICE EQUIPMENT MARKING

In addition to other marking requirements, all service equipment shall be marked with the available fault current and the date of calculation of the fault current. See other areas of these specifications for additional labeling requirements. Labels shall be engraved metal or laminated-plastic nameplate mounted with corrosion-resistant screws.

TESTING AND ADJUSTMENTS

For new panels, provide a complete fault current coordination study and an arc flash hazard study and tag all gear accordingly. Provide labeling on all switchgear and switch boards. Adjust all trip and parameter settings in accordance with the calculations.

END OF SECTION 16010

SECTION 16100 - BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

SUMMARY

This Section includes the following:

1. Raceways
2. Wires, cables, and connections
3. Wiring devices
4. Grounding
5. Safety Switches and fuses
6. Supporting devices for electrical components
7. Equipment for utility company's electricity metering

QUALITY ASSURANCE

Electrical Components, Devices, and Accessories shall be listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

Devices for Utility Company Electricity Metering shall comply with utility company published standards.

Comply with NFPA 70.

COORDINATION

Coordinate chases, slots, inserts, sleeves, and openings for electrical supports, raceways, and cable with general construction work.

Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work. Coordinate installing large equipment that requires positioning before closing in the building.

Coordinate electrical service connections to components furnished by utility companies.

Coordinate installation and connection of exterior underground and overhead utilities and services, including provision for service entrances and electricity-metering components.

Coordinate location of access panels and doors for electrical items that are concealed by finished surfaces.

Where electrical identification devices are applied to field-finished surfaces, coordinate installation of identification devices with completion of finished surface.

PART 2 - PRODUCTS

RACEWAYS

EMT: Electrical metallic tubing; ANSI C80.3, zinc-coated steel.

FMC: Flexible metal conduit; zinc-coated steel.

IMC: Intermediate metal conduit; ANSI C80.6, zinc-coated steel, with threaded fittings.

LFMC: Liquidtight flexible metal conduit; zinc-coated steel with sunlight-resistant and mineral-oil-resistant plastic jacket.

RMC: Rigid metal conduit; galvanized rigid steel; ANSI C80.1.

RNC: Rigid nonmetallic conduit; NEMA TC 2, Schedule 40 or 80 PVC, with NEMA TC3 fittings.

Raceway Fittings: Specifically designed for raceway type with which used.

SURFACE MOUNTED RACEWAY: Hubbell 4750, 2 channel, metal raceway system. Provide all accessories for a neat and clean installation. Coordinate with owner for installation of data in raceway prior to completion of installation. Provide cover plates for data outlets. Color by Architect.

WIRES, CABLES, AND CONNECTIONS

All conductors shall have 600V insulation type THHN/THWN

Conductors in outdoor underground raceways shall be type THWN

Conductors, No. 10 AWG and Smaller: Solid or stranded copper.

Conductors, Larger than No. 10 AWG: Stranded copper.

No wire shall be smaller than #12 awg unless noted otherwise.

All conductors shall be copper.

Insulation: Thermoplastic, rated 600 V, 90 deg C minimum, Type THHN-THWN, or USE depending on application.

Wire Connectors and Splices: Units of size, ampacity rating, material, type, and class suitable for service indicated.

WIRING DEVICES

Wall Switches shall be 20A, 277V, AC type designed for quiet operation.

Duplex receptacles shall be 20A/2 pole, 3-wire, 125V, grounding type.

All devices shall be specification grade Hubbell, Leviton, or equal.

All device plates shall be brushed stainless steel with matching counter sunk screws unless noted otherwise. All boxes shall have a cover plate.

Consult with the Architect for color selections before ordering devices.

Use multigang plates where devices are grouped together.

Boxes and fittings shall comply with article 314 of the NEC. Particular attention shall be paid to the number of conductors allowed in an outlet box or junction box. Contractor shall make provisions to prevent overcrowding outlet and junction boxes regardless of the number of conductors shown on the plans at the outlets.

In locations where power, combination, and tele/data outlets are mounted together, care shall be taken to minimize the overall spacing along the wall. Consult with the Architect for specific details.

GROUNDING

The grounding system shall be in accordance with N.E.C. Article 250.

A grounding conductor shall be provided in all conduit.

SAFETY SWITCHES AND FUSES

Safety switches shall be of the quick-make, quick-break, heavy-duty, fusible or non-fusible type with cover interlock to prevent opening of the door when the switch is in the "ON" position. Use NEMA 3R enclosures outdoors and NEMA 1 enclosures indoors, unless otherwise noted.

Provide a complete set of dual-element, class RK-1 or class J fuses of ampere rating shown on the drawings. Furnish the owner with 20% spare fuses with at least one set for every rating.

All fuses shall have a minimum interrupting rating of 200,000 A.

SUPPORTING DEVICES

Material: Cold-formed steel, with corrosion-resistant coating.

Metal Items for Use Outdoors or in Damp Locations: Hot-dip galvanized steel.

Slotted-Steel Channel: Flange edges turned toward web, and 9/16-inch- diameter slotted holes at a maximum of 2 inches o.c., in webs. Strength rating to suit structural loading.

Slotted Channel Fittings and Accessories: Recommended by the manufacturer for use with the type and size of channel with which used.

Raceway and Cable Supports: Manufactured clevis hangers, riser clamps, straps, threaded C-clamps with retainers, ceiling trapeze hangers, wall brackets, and spring-steel clamps or click-type hangers.

Pipe Sleeves: ASTM A 53, Type E, Grade A, Schedule 40, galvanized steel, plain ends.

Cable Supports for Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug for non-armored electrical cables in riser conduits. Plugs have number and size of conductor gripping holes as required to suit individual risers. Body constructed of malleable-iron casting with hot-dip galvanized finish.

Expansion Anchors: Carbon-steel wedge or sleeve type.

Toggle Bolts: All-steel springhead type.

PART 3 - EXECUTION

ELECTRICAL EQUIPMENT INSTALLATION

Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom.

Materials and Components: Install level, plumb, and parallel and perpendicular to other building systems and components, unless otherwise indicated.

Equipment: Install to facilitate service, maintenance, and repair or replacement of components. Connect for ease of disconnecting, with minimum interference with other installations.

Right of Way: Give to raceways and piping systems installed at a required slope.

RACEWAY APPLICATION

Outdoor Installations:

1. Exposed: RMC.
2. Concealed: RNC.
3. Underground, Single Run: RNC.
4. Underground, Grouped: RNC.

5. Connection to Vibrating Equipment: LFMC.
6. Boxes and Enclosures: NEMA 250, Type 3R or Type 4, unless otherwise indicated.

Indoor Installations:

1. Exposed: SURFACE MOUNTED RACEWAY, except EMT in electrical rooms, except in wet or damp locations, use IMC.
2. Concealed in Walls or Ceilings: EMT.
3. In Concrete Slab: RNC.
4. Below Slab on Grade or in Crawlspace: RNC.
5. Connection to Vibrating Equipment: FMC; except in wet or damp locations: LFMC.
6. Boxes and Enclosures: NEMA 250, Type 1, unless otherwise indicated.

RACEWAY AND CABLE INSTALLATION

Conceal raceways and cables, unless otherwise indicated, within finished walls, ceilings, and floors.

Exposed conduits shall be installed with runs arranged perpendicular to walls and ceilings.

Keep legs of raceway bends in the same plane and keep straight legs of offsets parallel.

Install pull wires in empty raceways. Leave at least 12 inches of slack at each end of pull wires.

Connect motors and equipment subject to vibration, noise transmission, or movement with a maximum of 72-inches flexible metallic conduit. Install LFMC in wet or damp locations. Install separate ground conductor across flexible connections.

Set floor boxes level and trim after installation to fit flush to finished floor surface.

Unless a larger size is indicated, raceways, troughs, and junction boxes shall be sized in accordance with the fill requirements of the NEC.

Provide color-coding of wires and mark panels in accordance with NEC article 210.5 (C) and NEC article 215.12 (C) when more than one voltage is present for branch circuits.

WIRING METHODS FOR POWER, LIGHTING, AND CONTROL CIRCUITS

Application: Use wiring methods specified below to the extent permitted by applicable codes as interpreted by authorities having jurisdiction.

Exposed Feeders: Insulated single conductors in raceway

Concealed Feeders in Ceilings, Walls, and Gypsum Board Partitions: Insulated single conductors in raceway.

Concealed Feeders in Concrete: Insulated single conductors in raceway.

Exposed Branch Circuits: Insulated single conductors in raceway.

Concealed Branch Circuits in Ceilings, Walls, and Gypsum Board Partitions: Insulated single conductors in raceway.

Concealed Branch Circuits: Insulated single conductors in raceway.

Underground Feeders and Branch Circuits: Insulated single conductors in raceway.

Remote-Control Signaling and Power-Limited Circuits, Classes 1, 2, and 3: Insulated conductors in raceway unless otherwise indicated.

Not Allowed: NM for branch circuits.

Type MC cable shall not be acceptable.

WIRING INSTALLATION

Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

No wires shall be pulled in until the conduit system is complete. Ideal “Yellow 77” or other approved pulling lubricant shall be used.

Each circuit/homerun shown shall have a separate neutral for each phase conductor. 3 or 4 wire homeruns for multiple circuits are not acceptable. This does not apply to multi-phase circuits. Do not route more than 1 multi-phase circuit in a raceway.

ELECTRICAL SUPPORTING DEVICE APPLICATION

Damp Locations and Outdoors: Hot-dip galvanized materials or nonmetallic, slotted channel system components.

Dry Locations: Steel materials.

Strength of Supports: Adequate to carry present and future loads, times a safety factor of at least four with, 200-lb minimum design load for each support element.

SUPPORT INSTALLATION

Support parallel runs of horizontal raceways together on trapeze- or bracket-type hangers.

Size supports for multiple raceways or cable runs so capacity can be increased by a 25 percent minimum in the future.

Support individual horizontal single raceways with separate, malleable-iron pipe hangers or clamps except use spring-steel fasteners for 1-1/2-inch and smaller single raceways above suspended ceilings and for fastening raceways to slotted channel and angle supports.

Install sleeves for cable and raceway penetrations of concrete slabs and walls unless core-drilled holes are used. Install sleeves for cable and raceway penetrations of masonry and fire-rated gypsum walls and of all other fire-rated floor and wall assemblies. Install sleeves during erection of concrete and masonry walls.

Secure electrical items and their supports to building structure, using the following methods unless other fastening methods are indicated:

1. Wood: Wood screws or screw-type nails.
2. Gypsum Board: Toggle bolts. Seal around sleeves with joint compound, both sides of wall.
3. Masonry: Toggle bolts on hollow block and expansion bolts on solid block. Seal around sleeves with mortar, both sides of wall.
4. New Concrete: Concrete inserts with machine screws and bolts.
5. Existing Concrete: Expansion bolts.
6. Structural Steel: Spring-tension clamps.
7. Light Steel Framing: Sheet metal screws.
8. Fasteners for Damp, Wet, or Weather-Exposed Locations: Stainless steel.
9. Light Steel: Sheet-metal screws.
10. Fasteners: Select so load applied to each fastener does not exceed 25 percent of its proof-test load.

IDENTIFICATION MATERIALS AND DEVICES

Install at locations for most convenient viewing without interference with operation and maintenance of equipment.

Coordinate names, abbreviations, colors, and other designations used for electrical identification with corresponding designations indicated in the Contract Documents or required by codes and standards. Use consistent designations throughout Project.

Install continuous underground plastic markers during trench backfilling, for exterior underground power, control, signal, and communication lines.

FIRESTOPPING

Penetrations through rated construction shall be sealed with a material capable of preventing the passage of flames and hot gases when tested in accordance with ASTM-EB14.

- a) Notify the Architect for inspection of all completed fire and/or smoke barrier walls before any construction is installed that would conceal construction and prevent a proper inspection. Access to random selected areas may be required by the Architect at the time of final inspection if this notification is not given.
- b) Provide detailed instructive cut sheets of the fire penetration sealing system used to the Architect at the time of inspection. Random selective sampling by the Contractor will be observed by the Architect and the Fire Marshall's inspector.

MOUNTING HEIGHTS

Unless otherwise noted on the drawings or required by the Architect, the following mounting heights shall apply. Unless noted otherwise, mounting heights are to the centerline of the device:

1. Receptacles 18" above floor
2. Toggle Switches 48" above floor
3. Panelboards 72" to top
4. Telephone Outlets 18" above floor
5. Data Outlets 18" above floor
6. Meter Can 60"-72" to centerline

Mounting heights may be adjusted in masonry applications to simplify installation where approved by the Architect.

Coordinate counter top outlets with the height of the back splash.

END OF SECTION 16100

SECTION 16400 - PANELBOARDS

PART 1 - GENERAL

SUMMARY

This Section includes distribution and branch-circuit panelboards.

SUBMITTALS

Product Data: For each type of panelboard, overcurrent protective device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

Shop Drawings: For each panelboard, including the following:

1. Dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings. Include the following data:
 - a. Enclosure types and details for types other than NEMA 250, Type 1.
 - b. Bus configuration, and current, and voltage ratings.
 - c. Short-circuit current rating of panelboards and overcurrent protective devices.
 - d. Features, characteristics, ratings, and factory settings of individual overcurrent protective devices.
2. Wiring Diagrams: Power, signal, and control wiring.

Panelboard Schedules: For installation in panelboards. Submit final versions after load balancing.

Operation and maintenance data.

QUALITY ASSURANCE

Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

Comply with NEMA PB 1.

Comply with NFPA 70.

PART 2 - PRODUCTS

MANUFACTURERS

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. Siemens Energy & Automation, Inc.
2. Square D Co.
3. General Electric

FABRICATION AND FEATURES

Enclosures: Flush- and surface-mounted cabinets. NEMA PB 1, Type 1, suitable for environmental conditions at installed location.

1. Outdoor Locations: NEMA 250, Type 3R.
2. Other Wet or Damp Indoor Locations: NEMA 250, Type 4.
3. Hazardous Areas Indicated on Drawings: NEMA 250, Type 7C.

Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.

Finish: Manufacturer's standard enamel finish over corrosion-resistant treatment or primer coat.

Directory Card: A clear plastic directory holder shall be mounted inside panelboard door.

Provide arc flash hazard warning labels on all sections.

Bus: Hard-drawn copper, 98 percent conductivity.

Equipment Ground Bus: Adequate for feeder and branch-circuit equipment ground conductors; bonded to box.

Panelboard Short-Circuit Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

Panelboards with Main Service Disconnect: Listed for use as service equipment.

Spaces for Future Devices: Mounting brackets, bus connections, and necessary appurtenances required for future installation of devices.

Feed-through Lugs: Locate at opposite end of bus from incoming lugs or main device.

LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

Doors: Front mounted with concealed hinges; secured with flush latch with tumbler lock; keyed alike.

DISTRIBUTION PANELBOARDS

Doors: Front mounted, and secured with vault-type latch with tumbler lock; keyed alike.

Branch overcurrent protective devices shall be one of the following:

1. Bolt-on circuit breakers.
2. Fused switches.

INTEGRATED TRANSIENT VOLTAGE SURGE SUPPRESSION DEVICES

Surge Protective Device (SPD)

1. SPD shall be Listed and Component Recognized in accordance with UL 1449 Second Edition to include Section 37.3 highest fault current category. SPD shall be UL 1283 listed.
2. SPD shall be installed by and shipped from the electrical distribution equipment manufacturer's factory.
3. The TVSS devices in lighting and appliance panelboards shall be bus mounted between the main and branch devices. TVSS devices bussed off the end of the panelboard are not allowed. Panelboards with TVSS will accommodate thru-feed lugs and sub-feed circuit breakers in single section and multi-section panelboards.
4. The TVSS devices in power distribution panelboards shall be cable connected.
5. SPD shall provide surge current diversion paths for all modes of protection; L-N, L-G, N-G in WYE systems.
6. SPD shall be modular in design. Each mode including N-G shall be fused with a 200kAIR UL recognized surge rated fuse and incorporate a thermal cutout device. TVSS shall safely reach an end-of-life condition when subjected to fault current levels between 0 and 200 kA, including low level fault currents from 5 to 5000 amperes.
7. Audible diagnostic monitoring shall be by way of audible alarm. This alarm shall activate upon a fault condition. An alarm on/off switch shall be provided to silence the alarm. An alarm push to test switch shall be provided.
8. SPD shall meet or exceed the following criteria:
 - a. Minimum surge current capability (single pulse rated) per phase shall be:
 - 1) Service Entrance Panelboard locations: 240kA per phase
 - 2) Distribution and lighting and Appliance Panelboard locations: 160kA per phase
 - b. UL 1449 Suppression Voltage Ratings:

<u>VOLTAGE</u>	<u>LOCATION</u>	<u>L-N</u>	<u>L-G</u>	<u>N-G</u>
208Y/120V	Distribution:	400V	400V	400V
480Y/277V	Distribution:	800V	800V	800V

9. SPD shall have a minimum EMI/RFI filtering of up to -30 dB over the range of 100 kHz to 100 MHz.
10. SPD shall be provided with one set of NO/NC dry contacts.
11. The manufacturer of the electrical equipment in which the TVSS is installed shall warrant the integrated TVSS device to be free from defects in material and workmanship for a period of ten (10) years from the date of invoice the manufacturer or its authorized sales channel.

OVERCURRENT PROTECTIVE DEVICES

Molded-Case Circuit Breaker: NEMA AB 1, with interrupting capacity to meet available fault currents.

1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
2. GFCI Circuit Breakers: Single- and two-pole configurations with 5mA trip sensitivity.
3. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HACR for heating, air-conditioning, and refrigerating equipment.
4. Shunt Trip: 120-V trip coil energized from separate circuit, set to trip at 55 percent of rated voltage. Verify exact voltage of shunt trip with fire alarm vendor.

Fused Switch: NEMA KS 1, Type HD; clips to accommodate indicated fuses; lockable handle.

PART 2 - EXECUTION

INSTALLATION

Install panelboards and accessories according to NEMA PB 1.1.

Mounting Heights: Top of trim 86 inches above finished floor, unless otherwise indicated. Highest switch or breaker at 72" max above finished floor.

Mounting: Plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish.

Install filler plates in unused protective device spaces.

Wiring in Panelboard Gutters: Arrange conductors into groups and bundle and wrap with wire ties after completing load balancing.

Locate panelboards so that ratings are not reduced by heat from external sources.

IDENTIFICATION

Identify field-installed conductors, interconnecting wiring, and components; provide warning signs as specified in Division 16 Section "Basic Electrical Materials and Methods."

Panelboard Nameplates: Label each panelboard with engraved metal or laminated-plastic nameplate mounted with corrosion-resistant screws.

Circuit Directory: Create a directory to indicate installed circuit loads after balancing panelboard loads. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.

FIELD QUALITY CONTROL

Testing and Inspection: After installing panelboards and after electrical circuitry has been energized, demonstrate product capability and compliance with requirements.

Balancing Loads: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes as follows:

1. Measure as directed during period of normal system loading.
2. Perform load-balancing circuit changes outside normal occupancy/working schedule of the facility and at time directed. Avoid disrupting critical 24-hour services such as fax machines and on-line data-processing, computing, transmitting, and receiving equipment.
3. After circuit changes, recheck loads during normal load period. Record all load readings before and after changes and submit test records.
4. Tolerance: Difference exceeding 20 percent between phase loads, within a panelboard, is not acceptable. Rebalance and recheck as necessary to meet this minimum requirement.

END OF SECTION 16400

SECTION 16500 – LIGHTING FIXTURES

PART 1 - GENERAL

SUMMARY

This Section includes the following:

1. Lighting fixtures with lamps and ballasts.
2. Emergency lighting units.
3. Exit signs.
4. Accessories, including fluorescent fixture dimmers, occupancy sensors, etc.

SUBMITTALS

Product Data: For each type of lighting fixture scheduled, arranged in order of fixture designation. Include data on features, photometric data, accessories, and finishes.

Product Certificates: For each type of ballast for dimmer-controlled fixtures, signed by product manufacturer.

Operation and maintenance data.

QUALITY ASSURANCE

Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

Comply with NFPA 70.

Fixtures for hazardous locations shall be listed by Underwriters' Laboratory and labeled for indicated class and division of hazard.

NFPA 101 Compliance: Comply with visibility and luminance requirements for exit signs.

PART 2 - PRODUCTS

LIGHT FIXTURES

All light fixtures shall be as specified on the drawings. Requests for prior approval shall be submitted no later than seven working days prior to bidding.

Fixtures to be installed in damp or wet locations shall be listed by Underwriters' Laboratory for that purpose.

Recessed incandescent fixtures shall be provided with thermal protectors to automatically deactivate the fixtures due to overheating (fixtures shall be labeled by Underwriters' Laboratory for that purpose).

Lamps shall be furnished and installed for all fixtures including fixtures furnished by others. Provide lamps of the proper type, wattage and voltage rating as specified in the contract documents.

Fluorescent dimmers and fluorescent dimming ballasts shall be manufactured by the same manufacturer.

Fixtures specified to have emergency ballasts shall have an integral test switch.

Ballasts for operation of all fluorescent lamps shall be HPF Electronic with Class A Sound Rating.

Fluorescent ballasts for operation of F32 T8 rapid start lamps shall be electronic high-efficiency type with the following characteristics:

1. Lamps shall be 800 series and 3500 degree color temperature.
2. Lamps may operate in instant start mode.
3. Operate multiple lamps as parallel circuit, operating remaining lamps at full light output upon failure of other lamps connected to the same ballast.
4. Individual ballasts specifically designed and UL Listed are to operate one, two, three, or four lamps as scheduled on the drawings.
5. Operate lamps at a frequency higher than 20 kHz.
6. Operate a rated circuit voltage (120 OR 277 VAC) at an input frequency of 60 Hz, and tolerate +/- 10% sustained voltage variation without damage to the ballast, and maintain light output at +/- 10% voltage variation.
7. Comply with EMI and RFI limits set by the FCC (CRF 47 Part 18) for non-consumer applications and not interfere with normal electrical equipment.
8. Power Factor shall be not less than 0.95.
9. Total Harmonic Distortion shall be less than 10%.
10. Lamp Crest Factor shall be 1.7 or less.
11. Ballast Factor shall be greater than 0.85 and less than 1.00.
12. Sound rating shall be "A".
13. Withstand transients shall be as specified by ANSI C.62.41 for location category A.

14. Shall comply with applicable ANSI standards.
15. Shall be provided with a three (3) year warranty.

General: Comply with UL 924; for sign colors and lettering size, comply with authorities having jurisdiction.

PART 2 – EXECUTION

INSTALLATION

Light fixtures shall be set level, plumb, and square with ceilings and walls.

Support for light fixtures in or on Grid-Type Suspended Ceilings shall be supported independently of the ceiling.

Fixtures to be installed in or on painted ceilings and/or walls shall not be installed until painting is completed. Fixtures installed with paint applied over factory finishes will be rejected.

Recessed fixtures shall be installed so that the trim flanges fit tightly and evenly against the surface of the ceiling.

All locations of fixtures are approximate. The contractor shall refer to architectural plans for exact locations.

In acoustical tile ceilings, recessed 2x2 and 2x4 fluorescent fixtures shall be installed so as to alleviate the necessity for cutting the tile.

For acoustical tile ceilings, surface fixtures shall be centered on a tile or a tile joint, unless noted otherwise.

All incandescent lamps shall be furnished inside frosted except where noted otherwise.

T8 fluorescent lamps shall be four (4') feet long, bi-pin, rapid or instant start, 3500 K, 85 CRI, except where noted otherwise.

All H.I.D. lamps shall be phosphor coated, wattage as specified in the drawings.

END OF SECTION 16500