

ADVERTISEMENT FOR BIDS

Sealed bids for construction of Hickory T-Hangar 2 will be received by City of Hickory (Owner) at City of Hickory Council Chambers, until 2:00 p.m. (local time) on April 30th, 2024. At that time and place, bids will be opened and read aloud in public.

The project consists of approx. the site work and erection of a 12-unit T-Hangar.

The metal building with bi-fold doors for this project has been purchased by the City of Hickory and will be delivered to the site for construction to begin. Contractor will be responsible for the receiving and unloading of said building.

Contract documents are on file and may be examined at Clayton Engineering & Design.

Each bid must be accompanied by a certified check or bid bond by an acceptable surety company for not less than 5% of the amount of the bid, made payable to the Owner as a bid guarantee.

A performance bond and a payment bond, each in the amount of 100% of the contract price, will be required of each successful bidder.

In accordance with North Carolina law, bids will be accepted only from bidders who are licensed general contractors in the State of North Carolina. Small, female, minority, and local contractors are encouraged to bid on this project.

No bid may be withdrawn for a period of 60 days after the actual bid opening date.

The Owner reserves the right to reject any or all bids or any part of a bid, and to waive informalities and technicalities in the bid.

The City of Hickory encourages small, female, minority and local contractors to bid on this project. The City also promotes fair housing, is an equal opportunity employer, and encourages others to provide equal employment opportunities. M/WBE goal of 4% has been set.

A mandatory pre-bid meeting will be held on April 18th, 2024 at 10:00am onsite.

ENGINEER
CLAYTON ENGINEERING & DESIGN, PLLC

1209 9th Ave NE
Hickory, NC 28602
Telephone (828)-455-3456

OWNER
City of Hickory

76 North Center St
Hickory, NC 28601

State of North Carolina AFFIDAVIT A – Listing of Good Faith Efforts

County of _____

(Name of Bidder)

Affidavit of _____

I have made a good faith effort to comply under the following areas checked:

Bidders must earn at least 50 points from the good faith efforts listed for their bid to be considered responsive. (1 NC Administrative Code 30 I.0101)

- 1 – (10 pts)** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
- 2 --(10 pts)** Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due.
- 3 – (15 pts)** Broken down or combined elements of work into economically feasible units to facilitate minority participation.
- 4 – (10 pts)** Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- 5 – (10 pts)** Attended prebid meetings scheduled by the public owner.
- 6 – (20 pts)** Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
- 7 – (15 pts)** Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- 8 – (25 pts)** Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- 9 – (20 pts)** Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- 10 - (20 pts)** Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

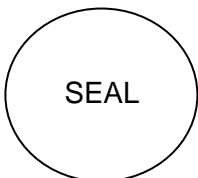
The undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon scope of contract to be executed with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d) Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

State of North Carolina --AFFIDAVIT B-- Intent to Perform Contract with Own Workforce.

County of _____

Affidavit of _____

(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the _____

_____ contract.

(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

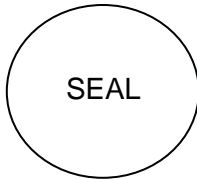
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement. The Bidder agrees to make a Good Faith Effort to utilize minority suppliers where possible.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

State of North Carolina - AFFIDAVIT C - Portion of the Work to be Performed by HUB Certified/Minority Businesses

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the portion of the work to be executed by HUB certified/minority businesses as defined in GS143-128.2(g) and 128.4(a),(b),(e) is equal to or greater than 10% of the bidders total contract price, then the bidder must complete this affidavit.
 This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

Affidavit of _____ I do hereby certify that on the _____
 (Name of Bidder)

_____ (Project Name)
 Project ID# _____ Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the contract with minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. Attach additional sheets if required

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

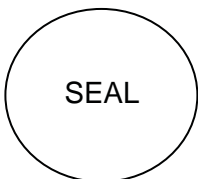
*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____



Signature: _____

Title: _____

State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

State of North Carolina AFFIDAVIT D – Good Faith Efforts

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the goal of 10% participation by HUB Certified/ minority business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

Affidavit of _____ I do hereby certify that on the _____
(Name of Bidder)

Project ID# _____ (Project Name) Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the contract with HUB certified/ minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. (Attach additional sheets if required)

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Examples of documentation that may be required to demonstrate the Bidder's good faith efforts to meet the goals set forth in these provisions include, but are not necessarily limited to, the following:

- A. Copies of solicitations for quotes to at least three (3) minority business firms from the source list provided by the State for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.
- B. Copies of quotes or responses received from each firm responding to the solicitation.
- C. A telephone log of follow-up calls to each firm sent a solicitation.
- D. For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- E. Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.
- F. Copy of pre-bid roster
- G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.
- H. Letter detailing reasons for rejection of minority business due to lack of qualification.
- I. Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

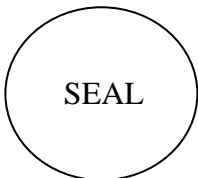
Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

APPENDIX E

MBE DOCUMENTATION FOR CONTRACT PAYMENTS

Prime Contractor/Architect: _____

Address & Phone: _____

Project Name: _____

SCO Project ID: _____

Pay Application #: _____ Period: _____

The following is a list of payments made to Minority Business Enterprises on this project for the above-mentioned period.

MBE FIRM NAME	* TYPE OF MBE	AMOUNT PAID THIS MONTH (With This Pay App)	TOTAL PAYMENTS TO DATE	TOTAL AMOUNT COMMITTED

*Minority categories: Black (B), Hispanic (H), Asian American (AA), American Indian (AI), White Female (WF), Socially and Economically Disadvantaged (SED)

Approved/Certified By:

Name

Title

Date

Signature

SUBMIT WITH EACH PAY REQUEST - FINAL PAYMENT - FINAL REPORT

RECEIPT AND OPENING OF BIDS: Bids will be received at the time and place as specified in the Invitation to Bid, and then at said office, reviewed by the Owner and Engineer.

LICENSES: The attention of Bidders is directed to the provisions of the acts for licensing of General Contractors for the State of North Carolina and all requirements of such acts which have bearing upon this work shall be deemed a part of the Specifications as if written therein in full.

A contractor's license is required for all contractors and subcontractors participating in work amounting to \$30,000 or more. The name, general contractor's license number, and bidders license number of all subcontractors whose work amounts to \$30,000 or more shall appear on the outside of the envelope containing the bid.

EXAMINATION OF DRAWINGS AND SPECIFICATIONS: Each Bidder shall carefully examine the Drawings and Specifications and all Addenda or other revisions thereto and thoroughly familiarize himself with the detailed requirements thereof prior to submitting a Bid. If any Bidder is in doubt as to the true meaning of any part of the Drawings, Specifications, or other Documents, or if any error, discrepancy, conflict, or omission is noted, the Bidder should immediately contact the Engineer in writing, on supplied form, and request clarification. The Engineer will clarify the intent of the Documents and/or correct such error, discrepancy, conflict, or omission, and will notify all Bidders by Addendum in cases where the extent of work or the cost thereof will be appreciably affected. No allowance will be made after Bids are received for oversight by a Bidder.

EXAMINATION OF SITE: Each Bidder shall visit the site of proposed work and fully acquaint himself with conditions relating to construction and labor so he may fully understand facilities, difficulties, and restrictions attending execution of work under contract. By executing the Agreement, the Contractor represents that he has visited the site, familiarized himself with the local conditions under which the work is to be performed, and correlated his observations with the requirements of the Contract Documents.

INFORMATION NOT GUARANTEED: All information given on the Drawings or in the Contract Documents relating to existing structures, location of utilities, or other information on existing facilities, is from the best sources at present available to the Owner. All such information is furnished only for the information and convenience of the Bidders. It is agreed and understood that the Owner does not warrant or guarantee that the conditions, pipes, or other structures encountered during construction will be the same as those indicated on the Drawings or in the Contract Documents. The Bidder must satisfy himself regarding the character, quantities, and conditions of the various materials and the work to be done.

It further is agreed and understood that the Bidder or the Contractor will not use any of the information made available to him or obtained in any examination made by him in any manner as a basis or ground of claim or demand of any nature, against the Owner or the Engineer, arising from or by reason of any variance which may exist between the information offered by the actual materials or structures encountered during the construction work, except as may otherwise be provided for in the Contract Documents.

If any work is performed by the Contractor, or any subcontractor, prior to adequate verification of applicable data, any resultant extra cost for adjustment of work necessary to conform to existing conditions, or damage to existing facilities, shall be assumed by the Contractor without reimbursement or compensation by the Owner.

ADDENDA AND INTERPRETATIONS: No interpretation of the meaning of the Drawings, Specifications, or other Bid Documents will be made orally to any Bidder by the Engineer prior to award of the contract.

Every request for such interpretation should be submitted via Conflict Resolution Form. To be given consideration, such request must be received at least five (5) days prior to the date fixed for the opening of Bids. Any and all such interpretations and any supplemental instructions will be made in the form of written Addenda to the Specifications which, if issued, will be emailed to each bidder of record, not later than Three (3) days prior to the date fixed for the opening of Bids. Failure of any Bidder to receive any such Addendum or interpretation shall not relieve such bidder from any obligation under his Bid as submitted. All Addenda so issued shall become part of the Contract Documents.

COMPLETE WORK REQUIRED: The Drawings, Specifications, and all supplementary documents are essential parts of the Contract, and requirements occurring in one are as binding as though occurring in all. They are intended to be cooperative, to describe and provide for a complete work. In case of discrepancy on the Drawings, figured dimensions shall govern. In case of omissions from the Specifications as to items of equipment and materials or quantities therefore, the Drawings shall govern. It shall be the responsibility of the Bidder to call to the attention of the Engineer obvious omissions of such magnitude as to affect the strength, adequacy, function, completeness, or cost of any part of the work in ample time for amendment by Addendum prior to letting date.

LAWS AND REGULATIONS: All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included as though herein written out in full.

~~**ELECTRONIC MODIFICATIONS:** Any Bidder may modify his Bid by electronic communication at any time prior to the scheduled closing time for receipt of Bids, provided such electronic communication is received by the Owner prior to the closing time; and, provided further, the Owner is satisfied that a written confirmation of the electronic modification over the signature of the Bidder was mailed prior to the closing time. The electronic communication should not reveal the Bid price but should provide the addition or subtraction or other modification so that the final prices or terms will not be known by the~~

~~Owner until the sealed Bid is opened. If written confirmation is not received within 2 days from the closing time, no consideration will be given to the electronic modification.~~

WITHDRAWAL OF BIDS: Any Bidder may withdraw his Bid, either personally or by written request, at any time prior to the scheduled time for opening of Bids or authorized postponement thereof.

No Bidder may withdraw his Bid for a period of sixty (60) days after the date set for the opening thereof, and all Bids shall be subject to acceptance by the Owner during this period.

IRREGULAR BIDS: A Bid will be considered irregular and may be rejected for any one of the following reasons:

1. If the Bid is on a form other than that furnished by the Owner; or if the form is altered or any part detached.
2. If there are unauthorized additions, conditional or alternate bids, or irregularities of any kind which may tend to make the Bid incomplete, indefinite, or ambiguous as to its meaning.
3. If the Bidder adds any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.
4. If the Bid does not contain a price for each item listed.
5. If the Bid does not contain the aggregate of the Bid, obtained by adding the extended amounts of the various items, if applicable.
6. If the Bid contains obviously unbalanced bid prices.
7. If there is reason to believe that any Bidder is interested in more than one Bid on the same project or that there has been collusion among the Bidders.
8. Failure to acknowledge agenda.

DISQUALIFICATION OF BIDDERS: More than one Bid from an individual, a firm or partnership, a corporation or any association, under the same or different names, will not be considered. Reasonable grounds for believing that any Bidder is interested as a principal in more than one Bid for the work contemplated will cause the rejection of all Bids in which such Bidder is believed to be interested. Any or all Bids will be rejected if there is reason to believe that collusion exists among the Bidders. Contracts will be awarded only to responsible Bidders capable of performing the class of work contemplated within the time specified, and having sufficient resources and finances to carry on the work properly.

ABILITY AND EXPERIENCE OF BIDDER: It is the purpose of the Owner not to award this Contract to any Bidder who does not furnish satisfactory evidence that he has the experience of successfully completing projects of this type and magnitude and that he has sufficient capital, equipment, plant, and personnel to enable him to prosecute the work

JOB NO. 24003
DATE 03/01/2024

CE&D, PLLC.

successfully and to complete it in the time named. The Owner may make such investigation as it deems necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the Owner, under oath if so required, all such information and data for this purpose as the Owner may request.

INVITED BIDDER QUALIFICATIONS: The award of the contract will be premised on past performance of similar and/or like operations, professional aptitude and credentials as well as consideration of cost to the Owner.

In order to be considered, firms must complete a "Contractor Prequalification Statement" on forms provided by the Engineer and be approved by the Owner prior to receipt of an Invitation to Bid.

ACCEPTANCE OR REJECTION OF BIDS: The Owner reserves the right to reject any and all Bids when such rejection is in the interest of the Owner; to reject the Bid of a Bidder who has previously failed to perform properly or complete on time contracts of a similar nature; and to reject the Bid of a Bidder who is not, in the opinion of the Engineer, in a position to perform the Contract. The Owner also reserves the right to waive any informalities and technicalities in bidding. The Owner may also accept or reject any of the alternates that may be set forth on the Bid.

NOTICE TO PROCEED: It is the intent of the Owner to issue the Notice to Proceed within four (4) weeks of bid opening. Should there be reasons why the Notice to Proceed cannot be issued by this date, the time may be extended by mutual agreement between the Owner and Contractor.

FORM OF BID: All Bids must be submitted on the blank bid form provided therefor and must state the total price for which the Bidder will complete the work in accordance with the terms of the Contract Documents. All blank spaces must be filled in and there shall be no interlineations, alterations, or erasures. The Bid must be signed manually by a principal or an officer duly authorized to make contracts. The Bidder's legal name must be fully stated and the name and title of the person signing must be typed below his signature.

BASIS OF BID: The project will be awarded as a unit price job based on the TOTAL BASE BID.

If there is a discrepancy between the BID ITEMS and the TOTAL BASE BID, the TOTAL BASE BID shall govern. If there is a discrepancy in the TOTAL BASE BID between the amount written numerically and the amount written in script, the amount written in script shall govern.

SUBMITTING BIDS: Each Bid must be submitted on the prescribed bid form. All blank spaces for bid prices must be filled in, in ink or typewritten, and the Bid must be fully completed and executed when submitted. Only one copy of the bid form is required.

Bidders are cautioned that it is the responsibility of each individual Bidder to assure that his Bid is in the possession of the responsible official or his designated alternate prior to the

stated time and at the stated place of the bid opening. Owner is not responsible for Bids delayed for any nature.

END OF SECTION

JOB NO. 24003
DATE 03/01/2024

CE&D, PLLC.

01110-5

CONTRACT CHANGE ORDER

Date
Project No. 100.00
Location
Contract No.
Change Order No.

TO (Contractor)

You are hereby requested to comply with the following changes from the contract plans and specifications:

Item No. (1)	Description of changes – quantities, units, unit prices, change in completion schedule, etc. (2)	Decrease in contract price (3)	Increase in contract price (4)
Change in contract price due to this Change Order:			
Total decrease		\$	XXXXXXXXXX
Total increase		XXXXXXXXXX	\$
Difference between Col. (3) and (4)		\$	\$
Net (increase) (decrease) contract price		\$	\$

The sum of \$ _____ is hereby (added to) (deducted from) the total contract price, and the total adjusted contract price to date thereby is \$ _____.

The time provided for completion in the contract is (unchanged) (increased) (decreased) by _____ calendar days. This document shall become an amendment to the contract and all provisions of the contract will apply thereto.

Recommended by: _____ Architect/Engineer	_____ Date
Accepted by: _____ Contractor	_____ Date
Approved by: _____ Owner	_____ Date

NOTICE OF AWARD

TO: _____

PROJECT DESCRIPTION: **PROJECT TITLE**

The OWNER has considered the BID submitted by you on _____, 2024, for the above described WORK in response to its Advertisement for Bids and Information for Bidders.

You are hereby notified that your Base BID has been accepted for items in the amount of \$ _____

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, Payment BOND and certificates of insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said BONDS within ten (10) days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out to the OWNER'S acceptance of your BID as abandoned and as forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this _____ day of _____, 20____.

Owner

By: _____

Title _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by _____

This the _____ day of _____, 20____

By _____

Title _____

NOTICE TO PROCEED

TO: _____ Date: _____

PROJECT:

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 20____, on or before _____ 20____, and you are to complete the WORK within _____ consecutive calendar days thereafter.

The date of completion of all WORK is therefore _____, 20_____.

Owner
By: _____
Title _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by _____

This the _____ day of _____, 20____

By _____

Title _____

REQUEST FOR INFORMATION

TO: Clayton Engineering & Design, PLLC.
Attention: William S. Clayton, P.E.

RFI NO.:

OWNER'S PROJECT NO.:

CE&D COMMISSION NO.: 24003

PROJECT NAME: City of Hickory
T-Hangar #2

PROJECT LOCATION: Hickory, NC

SUBJECT: _____

SPEC. SECTION: _____

DRAWING NO.: _____

=====

REQUEST:

PROPOSED SOLUTION:

DATE RESPONSE REQUIRED: _____ BY: _____

===== :

RESPONSE:

BY: Clayton Engineering & Design, PLLC.

DATE: _____

PROJECT MANUAL
CITY OF HICKORY – T HANGER

Project No. 24-831
Date 02.28.2024

**MICHAEL
GRAVES**


530 N. Trade Street, Suite 301
Winston-Salem, NC 27101

CITY OF HICKORY
T HANGER

PROJECT NO. 24-831
02-28-2024

Corporate Seal
Walter Robbs Architects,
a Michael Graves Company



Architectural
Walter Robbs Architects,
a Michael Graves Company



2-28-24

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BIDDING REQUIREMENTS AND INFORMATION

County Sales & Tax Report (NC)
Bid Form (non-State work)
Bid Bond (A310) (non-State work)

SAMPLE CONTRACT FORMS:

Performance Bond (A312)
Payment Bond (A312)
General Guarantee
Roofing Warranty

CONDITIONS OF THE CONTRACT:

General Conditions of the Contract for Construction (A201)
Supplementary General Conditions (To A201 General Conditions)

INFORMATION DOCUMENTS:

Fire Protection and Life Safety Code Analysis

SPECIFICATIONS:

DIVISION1 – GENERAL REQUIREMENTS

01 11 00	Summary of the Work
01 20 00	Allowances
01 31 00	Project Meetings
01 33 00	Submittals
01 35 50	Product Requirements
01 41 00	Special Inspections
01 41 01	Statement of Special Inspections
01 42 00	Reference Standards & Layout Work
01 50 00	Temporary Facilities
01 61 00	Materials and Equipment
01 63 00	Product Substitutions
01 73 00	Cutting and Patching
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01 75 00	Documents at Project Site
01 78 00	Contract/ Project Close-Out
01 83 00	Equipment Maintenance and Operations Program

DIVISION 2 – EXISTING CONDITIONS (not used)

DIVISION 3 – CONCRETE (not used)

DIVISION 4 – MASONRY (not used)

DIVISION 5 - METALS

05 50 00 Miscellaneous Metal Fabrications

DIVISION 6 - WOOD AND PLASTICS

06 10 00 Rough Carpentry

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

07 90 00 Sealants

DIVISION 8 - DOORS AND WINDOWS

08 11 00 Hollow Metal Doors and Frames
08 33 23 Overhead Rolling Doors

DIVISION 9 - FINISHES

09 29 00 Gypsum Drywall
09 91 00 Field Painting

DIVISION 10 - SPECIALTIES

10 14 00 Signage
10 52 20 Fire Extinguishers

DIVISION 11 – EQUIPMENT (not used)

DIVISION 12 – FURNISHINGS (not used)

DIVISION 13 - SPECIAL CONSTRUCTION

13 12 30 Pre-Engineered Metal Building

DIVISION 14 - CONVEYING SYSTEMS (not used)

DIVISION 22 – PLUMBING & FIRE PROTECTION

(see Drawings)

DIVISION 23 – MECHANICAL (not used)

DIVISION 26 - ELECTRICAL

(see Drawings)

DIVISION 31 – EARTHWORK

(see Drawings)

DIVISION 32 – EXTERIOR IMPROVEMENTS

(see Drawings)

DIVISION 33 – UTILITIES

(see Drawings)

END OF TOC

STATE OF NORTH CAROLINA
 COUNTY SALES AND USE TAX REPORT
 SUMMARY TOTALS AND CERTIFICATION

CONTRACTOR: _____

Page _____ of _____

PROJECT: _____

FOR PERIOD: _____

	TOTAL FOR COUNTY OF:	TOTAL FOR COUNTY OF:	TOTAL FOR COUNTY OF:	TOTAL FOR COUNTY OF:	TOTAL FOR COUNTY OF:	TOTAL FOR COUNTY OF:	TOTAL ALL COUNTIES
CONTRACTOR							
SUBCONTRACTOR(S)*							
COUNTY TOTAL							

* Attach subcontractor(s) report(s)
 ** Must balance with Detail Sheet(s)

I certify that the above figures do not include any tax paid on supplies, tools and equipment which were used to perform this contract and only includes those building materials, supplies, fixtures and equipment which actually became a part of or annexed to the building or structure. I certify that, to the best of my knowledge, the information provided here is true, correct, and complete.

Sworn to and subscribed before me,

This the _____ day of _____, 20____

 Signed

 Notary Public

My Commission Expires: _____

 Print or Type Name of Above

Seal

NOTE:
 This certified statement may be subject to audit

STATE OF NORTH CAROLINA
SALES AND USE TAX REPORT DETAIL

CONTRACTOR: _____

Page _____ of _____

SUBCONTRACTOR _____

FOR PERIOD: _____

PROJECT: _____

PURCHASE DATE	VENDOR NAME	INVOICE NUMBER	TYPE OF PROPERTY	INVOICE TOTAL	COUNTY TAX PAID	COUNTY OF SALE *
				\$	\$	
TOTAL:					\$	

* If this is an out-of-state vendor, the County of Sale should be the county to which the merchandise was shipped.

BID FORM

Name of Bidder _____

Business Address _____

N.C. License No. _____

Telephone Number _____

Email Address _____

PROJECT: _____

TO: _____

Gentlemen:

The undersigned, having carefully examined the Bidding Documents, Drawings and Specifications, and all subsequent Addenda as prepared by **Walter Robbs Architects, a Michael Graves Company**, has visited the site and being familiar with all conditions and requirements of the work, hereby agrees to furnish all labor, materials, equipment, services, and other requirements to complete the following construction:

All to be in accordance with the bidding documents for the following amounts:

BASE BID: _____ Dollars (\$ _____)

Base Bid does not include state or local sales tax; see Paragraph "Taxes" of Instructions To Bidders. Base Bid does include all Cash Allowances and Quantity Allowances described in Section 01200. Base Bid does NOT include Bid Alternates described in Section 01200.

Addenda have been received as follows:

Addendum No. ____	Date
Addendum No. ____	Date
Addendum No. ____	Date

The undersigned further agrees to sign a Contract for all work in the above amounts, if offered within thirty (30) days after receipt of Bids, and to furnish surety as specified, and upon failure to do so, agrees to forfeit to the Owner, attached cashier's check, certified check or Bid Bond in the amount of:

\$ _____ of Base Bid).

The undersigned further agrees to begin work promptly after a Notice to Proceed with an adequate force, carry the work forward as rapidly as possible and complete the entire Project no later than _____ consecutive calendar days after the date to begin as specified in the Notice to Proceed.

The undersigned hereby states that he will use the following major subcontractors if awarded the Contract:

Electrical: _____

The undersigned agrees that he has executed and submitted with his bid the Statement of Bidder's Qualification which is attached as the last page of this Bid Form.

It is distinctly understood that the Owner reserves the right to reject any and all Bids and to waive informalities and technicalities if considered to be in the best interest of the Owner.

Bidder hereby verifies that he is properly licensed in accordance with North Carolina state laws governing his respective trade and has entered his NC license number on the first page of this Bid Form.

Name of Bidder

By _____
Signature

Title _____

Date Proposal Executed: _____, 202____ .

Note: Execute and include "Statement of Bidder's Qualifications" as the last page of this Bid Form.

STATEMENT OF BIDDER'S QUALIFICATIONS

1. When was firm organized? _____
2. When and where was firm incorporated? _____
3. How many years has firm been engaged in contracting business under its present firm name?

4. Undersigned () is willing () is not willing to furnish a recent Financial Statement if requested to do so by Owner. (Note failure to provide financial information could result in disqualification.)
5. Three projects completed within last five (5) years approximating this project in size and scope.

Owner	Type Building:	Approx. Cost:	Architect
A. _____	_____	_____	_____
B. _____	_____	_____	_____
C. _____	_____	_____	_____

6. Have you ever refused a contract at your original bid? _____
7. Have you ever defaulted on a contract? _____

If answer to either 6 or 7 above is yes, explain circumstances on attached sheet.

(This statement must be subscribed and sworn to before a Notary Public.)

Sworn to and subscribed Firm Name: _____
before me this ____ day By: _____
of _____, 202____ Title: _____

Notary Public



AIA Document A310™ – 2010

Bid Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)

BOND AMOUNT:

PROJECT:
(Name, location or address, and Project number, if any)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this _____ day of _____

(Contractor as Principal) *(Seal)*
(Witness)

(Title)

(Surety) *(Seal)*
(Witness)

(Title)

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

FORM OF PERFORMANCE BOND

Date of Contract: _____

Date of Execution: _____

Name of Principal: _____
(Contractor)

Name of Surety: _____

Name of Contracting Body: _____

Amount of Bond: _____

Project: _____

KNOW ALL MEN BY THESE PRESENTS, that we, the PRINCIPAL and SURETY above named, are held and firmly bound unto the above named Contracting Body, hereinafter called the Contracting Body, in the penal sum of the amount stated above 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 Contracting Body, identified as shown above and hereto attached:

NOW THEREFORE, if the principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Contracting Body, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed, and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Executed in _____ counterparts.

Witness:

Contractor: (Trade or
Corporate Name)

(Proprietorship or Partnership)

By:

Attest: (Corporation)

Title:

(Owner, Partner, or Corp. Pres.
or Vice Pres. only)

By: _____

Title: _____
(Corp. Sec. or Ass't. Sec. only)

(Corporate Seal)

(Surety Company)

Witness:

By:

Title:

(Attorney in Fact)

Countersigned:

(N. C. Licensed Resident Agent)

(Surety Corporate Seal)

Name and Address - Surety Agency

Surety Company Name and N. C.
Regional or Branch Office Address

FORM OF PAYMENT BOND

Date of Contract: _____

Date of Execution: _____

Name of Principal: _____
(Contractor)

Name of Surety: _____

Name of Contracting Body: _____

Amount of Bond: _____

Project: _____

KNOW ALL MEN BY THESE PRESENTS, that we, the PRINCIPAL and SURETY above named, are held and firmly bound unto the above named contracting body, hereinafter called the contracting body, in the penal sum of the amount stated above 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 contracting body, identified as shown above and hereto attached:

NOW THEREFORE, if the principal shall promptly make payment to all persons supplying labor/material in the prosecution of the work provided for in said contract, and any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then this obligation to be void; otherwise, to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed, and these presents duly signed by its undersigned representatives, pursuant to authority of its governing body.

Executed in _____ counterparts.

Witness:

Contractor: (Trade or Corporate Name)

(Proprietorship or Partnership)

By: _____

Attest: (Corporation)

Title: _____

(Owner, Partner, or Corp.
Pres. or Vice Pres. only)

By: _____

Title: _____
(Corp. Sec. or Ass't. Sec. only)

(Corporate Seal)

(Surety Company)

Witness:

By: _____

Title: _____
(Attorney in Fact)

Countersigned:

(N. C. Licensed Resident Agent)

(Surety Corporate Seal)

Name and Address - Surety Agency

Surety Company Name and N. C.
Regional or Branch Office Address

GENERAL GUARANTEE

_____ guarantees all materials and workmanship incorporated
(Name of Contractor)

in the _____
(Name of Job)

_____, against defect due to faulty materials or faulty
(Location)

workmanship or negligence for a period of 12 months from completion of the Project for the General Guarantee and for such longer periods as may be designated by specific Sections of the Project Manual or by manufacturer's warranty on equipment, parts, or materials.

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.

Sworn to and subscribed before me this _____ day of _____, 202__.

By

Title

(Notary Public)

My Commission expires _____.

ROOFING WARRANTY

Know all men by these presents, that we, (Contractor), having installed insulation, roofing, flashing, and sheet metal work, and having accomplished certain other work on (Project), under a Contract between _____ (Owner) and (Contractor), warrant to the Owner with respect to said work that for a period of 2 years from date of final acceptance of said work by the Owner, the roofing system including insulation, roofing membrane, flashings and sheet metal work related to roofing system shall be absolutely watertight and free from all leaks provided, however, that the following are excluded from this warranty:

1. Defects or failures resulting from abuse by the Owner.
2. Defects in design involving failure of (a) structural frame, (b) loadbearing walls, (c) foundations.
3. Damage caused by fire, tornado, hail, hurricane, acts of God, wars, riots, or civil commotion.

We, (Contractor), agree that should any leaks occur in the roofing system, we will promptly remedy said leaks in a manner to restore the roofing system to a watertight condition by methods compatible to the system and acceptable under industry standards and general practice.

We, (Contractor), further agree that for a period of 2 years from date of final acceptance referred to above we will make repairs, at no expense to the Owner, to any defects which may develop in the work, in a manner compatible to the system and acceptable under industry standards and general practice. Damage to the interior of the building resulting from failure of the roofing system described herein shall be repaired and/or replaced by the Contractor at no expense to the Owner.

IN WITNESS WHEREOF, we have caused this instrument to be duly executed, this _____ day of _____, 202____.

(Contractor)

WITNESS:

By: _____
President

_____ (Notary Public)



AIA[®] Document A201[™] – 2017

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

THE OWNER:
(Name, legal status and address)

THE ARCHITECT:
(Name, legal status and address)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503[™], Guide for Supplementary Conditions.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining

provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building

information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the

site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's

capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes

remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and

- 3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the

time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, 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. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under

Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the

Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate

Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The

Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable

by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The

foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers

to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the 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 Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not

constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the

endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The

Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§ 11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the

Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section

15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly

consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

Sample

SUPPLEMENTARY GENERAL CONDITIONS (To 2017 edition of A201 General Conditions)

01. GENERAL CONDITIONS: The "General Conditions of the Contract for Construction", AIA Document A 201, 2017 edition, as published by the American Institute of Architects, is bound herein, and made a part of the Contract Documents.
02. RELATION OF SUPPLEMENTARY GENERAL CONDITIONS TO GENERAL CONDITIONS: The Supplementary General Conditions hereinafter contain changes and additions to AIA Document A 201, "General Conditions of the Contract for Construction". Where any portion of an Article in AIA Document A 201 is modified or voided by the Supplementary General Conditions, the unaltered provisions shall remain in effect.
03. RELATION TO SUPPLEMENTARY CONDITIONS TO GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION AIA DOCUMENT A 201, 2017 ED.: If there are contradictions between the General Conditions of the Contract for Construction AIA Document A201, 2017 ed." and the "Supplementary General Conditions" the condition most favorable to the Owner shall govern.
04. MODIFICATIONS TO THE GENERAL CONDITIONS: Modify and supplement Articles of AIA Document A 201 as follows:
- A. Article 1 - General Provisions:
1. Subparagraph 1.1.1: Add:

"The Contract Documents shall also include the Performance Bond and Payment Bond."
 2. Subparagraph 1.1.3: Add:

"1.1.3.1 The word "provide" shall mean furnish and install, complete, in place, and ready for use."
 3. Subparagraph 1.1.5: Add:

"Electronic Drawings (.dwg) files will not be provided to the Prime Contractors or Subcontractors."
 4. Subparagraph 1.1.6 Add:

"Electronic Specifications (.doc) files will not be provided to the Prime Contractors or Subcontractors."
 5. Subparagraph 1.2: Add:

1.2.4 New Paragraph.

"1.2.4 Sections of Division 1 - General Requirements, govern the execution of all sections of the specifications."

1.2.7 New Paragraph.

"1.2.5 Wherever singular numbers or words are used in the Specifications and the Work requires more than one of the terms described, the plural or the word "each" shall be understood and inferred, and as many units as are necessary for a complete installation shall be provided. Similarly, wherever plural words or numbers are used in the Specifications and the Work requires only one of the terms described, the singular shall be understood and inferred, and the one unit for a complete installation shall be provided."

B. Article 2 - Owner: Add the following subparagraph under Paragraph 2.1, "Definition":

"2.1.3 The Owner of this Project is **UPDATE WITH EACH PROJECT.**"

C. Article 3 - Contractor:

1. Subparagraph 3.4: Add:

"3.4.1.1 Unless specified otherwise, workmanship shall be of a grade accepted as the best practice of the particular trade involved. Also, except as exceeded or qualified by the Specifications, workmanship shall be as stipulated in written standards of recognized organizations or institutes of the respective trades."

"3.4.4 Contractor shall submit a complete list of materials, equipment, suppliers and Subcontractors, proposed for the Project. Issuance of the second Certificate for Payment may be withheld until substantial portions of these lists have been submitted."

"3.4.5 Any work necessary to be performed after regular working hours, on Sundays or Legal Holidays, shall be performed without additional expense to Owner."

"3.4.6 At any time during the construction and completion of the work covered by these Specifications, if the conduct of any employee of the Contractor be adjudged inappropriate and a nuisance to the Owner or Architect, or if any employee of the Contractor be considered incompetent or detrimental to the work, the Contractor shall order such parties removed immediately from the grounds."

2. Subparagraph 3.6: Add:

"3.6.1 See Instructions to Bidders for requirements regarding taxes."

3. Paragraph 3.12.4: Add:

"3.12.4.1 The Contractor shall submit a "Schedule of Shop Drawings and Sample Submittals" to the Architect for approval within 30 calendar days from date of award of the Contract. All shop drawings and sample submittals shall be submitted within 3 months after award of Contract."

"3.12.4.2 The schedule shall list submittals and dates for submittals in the same order that the products will be required in the sequence of construction."

"3.12.4.3 Shop drawings shall be dated and contain: name of Project; description or names of equipment, materials and items; and complete identification of locations at which materials or equipment are to be installed; reference to the Section of Specifications where it is specified, and Drawing Number where shown."

"3.12.4.4 Submission of shop drawings shall be accompanied by transmittal letters, containing Project name, Contractor's name, number of drawings, titles, and other pertinent data."

"3.12.4.5 Shop Drawings shall be reviewed and stamped by the Contractor and dated and signed or initialed by the person reviewing the shop drawings. By forwarding the shop drawing to the Architect for review, the Contractor signifies that the shop drawing is approved by the Contractor, that the item is suitable for installation into the Project, and that the item complies with the Drawings and Specifications."

"3.12.4.6 For standard manufactured items not requiring special shop drawings for manufacture (except where required otherwise elsewhere in the Contract Documents), submit 6 copies of manufacturer's catalog sheets showing illustrated cuts of item to be furnished, scale details, sizes, dimensions, performance characteristics, capacities, wiring diagrams and controls, and all other pertinent information. Submittal shall denote the date pertinent to the specific item. Three copies of approved and/or disapproved submissions will be returned to Contractor."

"3.12.4.7 For shop drawings prepared by the Contractor or his Subcontractors or suppliers, submit legible, unfolded, reproducible Drawings. Each Drawing shall have a clear space for stamps. When phrase "by others" appears on shop drawings, General Contractor shall indicate on Drawing who is to furnish material or operations so marked before submittals. When shop drawings are checked "resubmit", or words of like meaning, Contractor shall correct original tracing and submit a new transparency for approval. After completion of checking of each submission of shop drawing transparencies, Architect will obtain prints of each transparency for their records and will then return checked transparencies to General Contractor. For use of all trades, General Contractor shall provide such number of prints as are required for field distribution."

"3.12.4.8 At completion of construction, furnish Owner with 1 unused corrected copy of all shop drawings, manufacturer's diagrams, literature, etc."

"3.12.4.9 Final decisions regarding numbers of shop drawings and their distribution will be made at the preconstruction conference."

D. Article 4 - Administration of the Contract:

1. Paragraph 4.1: Add:

"4.1.1 The terms "Construction Observer", "Project Representative", or other words of same meaning, shall mean a person authorized to perform the duties of and carry out the responsibilities of the Architect at the site."

E. Article 5 - Subcontractors:

1. Paragraph 5.1: Add:

"5.1.3 The Owner or Architect will not undertake to settle any differences between the Contractor and his Subcontractors, nor between Subcontractors."

F. Article 7 - Changes in the Work:

1. Subparagraph 7.1: Add:

"7.1.4 For any deletion or change which results in a net decrease in cost, the credit to be allowed by the Contractor to the Owner shall include a maximum of 10% of the estimated cost of the work for profit, but no allowance for overhead."

"7.1.5 The Contractor's allowance for overhead and profit shall not exceed 15% of the estimated cost of the work. These charges shall include supervision, overhead, bond, profit, general conditions and duration related expenses, and all other expenses associated with the work."

G. Article 9 - Payments and Completion:

1. Subparagraph 9.3.1: Add:

"9.3.1.3 The Contractor's Application for Payment shall be made on AIA Form G 702. The certification included thereon shall be executed and notarized."

2. Subparagraph 9.3.2: Add:

"9.3.2.1 If there is inadequate storage space on the site, and if the Contractor desires to include in his Application for Payment any materials stored in a bonded warehouse or the supplier's warehouse, he shall assign such materials to the Owner. If the Architect determines that they are properly stored and protected against damage or theft, he will approve payment for such materials. All stored materials shall be insured in the name of the Owner in an amount equal to the purchase price of the material with a company licensed to do business in the State of North Carolina."

"9.3.2.2 Material stored off-site and included in the Contractor's Application for Payment shall be stored together in one location and shall be arranged such that the Architect can reasonably conduct an inventory of the material. The Architect will not certify payment for material that is stored such that the Architect cannot conduct a reasonable inventory. Stored materials included in the Contractor's Application for Payment must be stored in a location approved in advance by the Owner."

3. Paragraph 9.3: Add:

"9.3.4 Unless otherwise stated in the Agreement or Contract, Progress Payments will be made monthly on the basis of 95% of the work done, plus 95% of materials stored or stockpiled in an approved manner and location."

4. Add paragraph 9.11 (this was in 2007 version and not included by Clark on Surry County – I suggest that it be added – MCL)

"9.11 FINAL INSPECTION AND ACCEPTANCE: Prior to the final inspection, and at the written request of the Contractor, the Architect will conduct ONE pre-final inspection. The Architect will prepare a list (punch list) of items that are found to be incomplete or not in accordance with the Contract Documents, which shall be completed by the Contractor prior to the final inspection. Upon completion of the punch list items, the Contractor shall make a written request for a final inspection. The Architect will conduct ONE final inspection, including inspection of the punch list items. If the Architect determines that all punch list items have not been corrected by the Contractor or that other work does not conform to the Contract Documents, which causes an additional final inspection to be necessary, the Contractor will be required to pay the Owner for the Architect's expenses for re-inspection and the Owner will reimburse the Architect. For this Project, the Architect's re-inspection fee shall be \$300.00 per re-inspection."

H. Article 11 - Insurance and Bonds:

1. Paragraph 11.1.2: Add:

"11.1.2.1 Prior to signing the Contract, the Contractor shall furnish Performance and Payment Bonds covering the faithful performance of the Contract and the payment of all obligations arising thereunder. Cost of bonds shall be paid by the Contractor. Such bonds shall be written by a company or companies lawfully authorized to do business in North Carolina having a rating of B+ or above by A.M. Best Company or having been approved by the Owner. The Contractor shall furnish

bonds satisfactory to the Owner covering faithful performance of the contract and payment of obligations arising thereunder as required by law. Bonds may be obtained, through the Contractor's usual source and the cost thereof shall be included in the contract sum. The amount of each bond shall be equal to 100 percent of the contract sum.”

“11.1.2.2 The Contractor shall deliver the bonds to the Owner, not later than the date of execution of the Contract; or if the work is commenced prior thereto in response to a Notice to Proceed, or letter of intent, the Contractor shall, prior to commencement of the work, submit evidence satisfactory to the Owner that such bonds will be issued.”

“11.1.2.3 Bonds shall be executed on the forms included in the "Contract Forms" part of the Project Manual, Performance Bond and Payment Bond, with amount shown on each part equal to 100% of the total amount payable by terms of the Contract. Surety shall be a company licensed to do business in the State of North Carolina and shall be acceptable to the Owner. Title "Licensed Resident Agent" shall appear after signature.”

“11.1.2.4 Bonds shall be dated the same as or subsequent to the Contract and shall be accompanied by a current certified Power-of-Attorney. Bonds shall be furnished in sufficient numbers so that one original can be bound with each original of the Agreement.”

“11.1.2.5 Seal of bonding company shall be impressed on each original of bond.”

“11.1.2.6 Contractor's signature(s) on Performance Bond and Payment Bond shall correspond to that of the Contract, such person signing the Agreement involved under laws of the State of North Carolina.”

“11.1.2.7 In the event of change orders or other contract modifications that increase the Contractor's scope of work or responsibility, the Contractor shall ensure that the increased cost of bonds is included in his change order price such that the bonds are kept valid and in effect without interruption and cover the Contractor's entire scope of work including modifications. The Contractor shall not allow the bonds to expire or otherwise terminate prior to completion of the Project without 30 days written notice to the Owner with copy to the Architect. “

END OF SC



Performance Based

FIRE PROTECTION ENGINEERING

Hickory Regional Airport

T-Hangar Project

FIRE PROTECTION AND LIFE SAFETY

Prepared For:

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530 North Trade Street, Suite 301
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February 14, 2024

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**HICKORY REGIONAL AIRPORT – T HANGAR
LIFE SAFETY NARRATIVE**

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I. INTRODUCTION

Performance Based Fire Protection Engineering, PLLC (Consultant) has been engaged by Michael Graves Architects (Client) to prepare this Fire Protection and Life Safety Narrative for the Hickory Regional Airport T-Hangar project located in Hickory, North Carolina. This analysis identifies code related design requirements and describes the fire protection measures that will be used to minimize the risk and loss from fire. Key stakeholders on this project include Michael Graves Architects, The Owner/Owner's Representative (Clayton Engineering & Design), Burke County Building and Fire Authorities, the Owner's Insurance Carrier, and the Consultant. This current edition of the Fire Protection and Life Safety Narrative is provided based on the available project information.

Key items covered within this report include the following topics:

- a. Hangar Classification
- b. Occupancy classification
- c. Construction type
- d. Maximum Fire Area limitations
- e. Separation Distances
- f. Structural fire resistance ratings
- g. Strategies for compliance with the identified requirements will be identified and outlined for the owner's/designer's consideration.

i. Project Overview

The new T-hangar project consists of a new construction Group III hangar with a footprint of approximately 18,750 square feet. This new hangar is a duplicate of a previously completed T-hangar project located adjacent to the new hangar site. A site plan is provided in Figure 1.



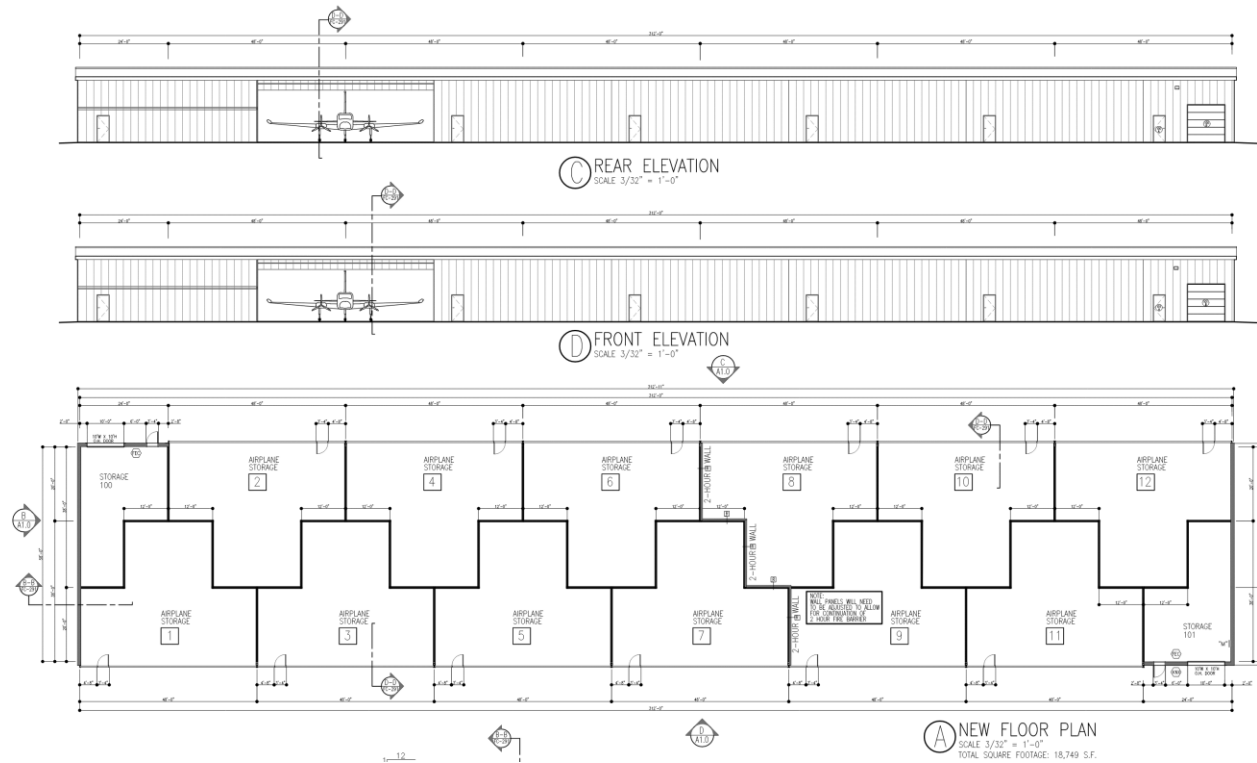


Figure 1. Project Building Elevations and Plan

The hangar will have twelve (12) dedicated hangar bays, each sized to contain one (1) general aviation aircraft, including single and twin engine aircraft.

ii. Applicable Codes and Standards

The life safety and fire protection measures covered in this report are based on contract requirements, local building and fire codes, National Fire Protection Association (NFPA) standards, and the Authority Having Jurisdiction (AHJ).

The major applicable codes for the project include, but are not limited to, the following:

- North Carolina Building Code, 2018 Edition
- North Carolina Fire Code, 2018 Edition
- NFPA 13, *Installation of Sprinkler Systems*, 2013 Edition
- NFPA 72, *National Fire Alarm and Signaling Code*, 2013 Edition
- NFPA 409, *Standard for Aircraft Hangars*, 2011 Edition



II. OCCUPANCY CLASSIFICATION

Each space within a building must be classified into a group based on the specific purpose for which it was designed to be occupied and used. Occupancy classification is considered a fundamental principle in prescribing the appropriate features of construction and occupant safety requirements. Table 1 provides a summary of the occupancy classifications of expected spaces throughout the building.

Table 1. Summary of Occupancy Classifications

Occupancy Classification (NCBC)	Occupancy Classification (IFC)	NFPA 409 Hangar Classification	Specific Location
Moderate Hazard Storage, S-1	Storage, Ordinary Hazard	Group III	T-Hangar

NFPA 409 classifies hangars based on single fire area square footage and door height.

A Group I hangar is any hangar with a door height greater than 28 ft. tall, a single fire area greater than 40,000 sq. ft., or provisions for housing any aircraft with a tail height greater than 28 ft.

A Group II hangar is any hangar with a door less than 28 ft. tall, a single fire area less than the limits defined in Table 4.1.2 for the specific construction type of the hangar.

A Group III hangar is any hangar with a door less than 28 ft. tall, a single fire area less than the limits defined in Table 4.1.3 for the specific construction type of the hangar.

A Group IV hangar is any hangar constructed of membrane-covered rigid steel frame.

This hangar will be classified as a Group III Hangar with a single maximum fire area of 12,000 sq. ft. in Type II (000) construction. This classification is reflected in the NCBC in Table 412.4.6 (represented below in Figure 2) for Type IIB construction.

**[F] TABLE 412.4.6
HANGAR FIRE SUPPRESSION REQUIREMENTS^{a,b,c}**

MAXIMUM SINGLE FIRE AREA (square feet)	TYPE OF CONSTRUCTION								
	IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
≥ 40,001	Group I	Group I	Group I	Group I	Group I	Group I	Group I	Group I	Group I
40,000	Group II	Group II	Group II	Group II	Group II	Group II	Group II	Group II	Group II
30,000	Group III	Group II	Group II	Group II	Group II	Group II	Group II	Group II	Group II
20,000	Group III	Group III	Group II	Group II	Group II	Group II	Group II	Group II	Group II
15,000	Group III	Group III	Group III	Group II	Group III	Group II	Group III	Group II	Group II
12,000	Group III	Group III	Group III	Group III	Group III	Group III	Group III	Group II	Group II
8,000	Group III	Group III	Group III	Group III	Group III	Group III	Group III	Group III	Group II
5,000	Group III	Group III	Group III	Group III	Group III	Group III	Group III	Group III	Group III

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

a. Aircraft hangars with a door height greater than 28 feet shall be provided with fire suppression for a Group I hangar regardless of maximum fire area.

b. Groups shall be as classified in accordance with NFPA 409.

c. Membrane structures complying with Section 3102 shall be classified as a Group IV hangar.

Figure 2. NCBC Table 412.4.6



As the total area of the hangar is intended to exceed 18,000 sq. ft., a fire area separation is required to divide the hangar into two separate fire areas. Per NCBC and NFPA 409, a Group III hangar >12,000 sq. ft. would need to be Type IIA construction at a minimum, which includes a 1-hr fire resistance rating on all structural members. NCBC 412.4.6.2 and NFPA 409 would require a fire wall, a structurally independent barrier to separate the hangar into two fire areas in order to stay below the fire area limitation for each construction type (12,000 sq. ft. for Type IIB, 15,000 sq. ft. for Type IIA, or 20,000 sq. ft. for Type IB) and remain a Group III hangar. However, the local AHJ has granted an exception to permit a reduction from fire wall to fire barrier which is not structurally independent as means of the separation. This is a viable path forward as long as the exemption continues to be permitted and does not cause complications through project design phases.

III. CONSTRUCTION TYPE

The requirements of methods of construction accounts for the response or contribution that a building’s structure will have in the event of a fire originating within the building as a result of its occupancy or fuel load. In general, a building will be classified as either combustible or noncombustible construction with additional fire-resistance rating requirements for particular structural elements. The construction type of a building shall be classified in accordance with both the NCBC and NFPA 409 as the classifications are slightly different between the two documents.

The construction type stipulates the various height and area requirements for the various occupancy types. Each occupancy classification is modified based on the relative level of risk associated with high occupant load, extended travel distances, or other unique features of each specific occupancy type. The NCBC, Chapter 5, contains limitations on the maximum number of stories, height and area of the building based on the construction type, occupancy classification and if the building is fully sprinkler protected. The maximum height and area for the unsprinklered S-1 occupancy, Type IIB construction Group III hangar are listed in Table 2 below.

Table 2. Limitations of Building Components based on Construction Type IIB

Building Component	Allowable (IIB)	Actual Overall
Height (ft)	55'	20'
Number of Stories	2	1
Floor Area (ft ²)	20,400 ^a	18,700

a. This value is calculated with an increase for building frontage of at least 20 ft. on all sides of the building, utilizing the NCBC Equation 5-1, 5-4, and 5-5 found in §506.

The building will be entirely Type IIB, Table 3 represents the minimum required fire resistance ratings of building elements for construction Type IIB.



Table 3. Fire Resistance Rating for Building Elements

Building Element	FRR (Type IIB)
Structural Frame Columns supporting floors Elements other than columns supporting floors	0 hours 0 hours
Bearing Walls (Interior and Exterior)	0 hours
Nonbearing Walls (Interior and Exterior)	0 hours
Floor Construction (Including secondary members)	0 hours
Roof Construction (Including secondary members)	0 hours

IV. FIRE RESISTANCE RATED SEPARATIONS

As discussed in the previous section, the intent is that single fire areas will remain below 12,000 sq. ft., thus allowing the omission of fire-resistance rating (maintain a Type IIB construction type), and no sprinkler protection.

The prescriptive separation requirements from NCBC §412.4.6.2 are detailed in this paragraph. Maximum single fire areas established in accordance with hangar classification and construction type in Table 412.4.6 shall be separated by **2-hour fire walls** constructed in accordance with Section 706. In determining the maximum single fire area as set forth in Table 412.4.6, ancillary uses that are separated from aircraft servicing areas by a fire barrier of not less than 1 hour, constructed in accordance with Section 707, shall not be included in the area.

Commentary: The classification of aircraft hangars for fire suppression purposes is based on the hangar's type of construction and fire area size. Fire area size is based on the aggregate floor area bounded by exterior walls and 2-hour fire walls where provided. For the purposes of hangar classification, ancillary uses located within the fire area are not required to be included in the fire area size provided they are separated from the aircraft servicing area by minimum 1-hour fire barriers. Many times there are ancillary areas associated with an aircraft hangar, such as offices, maintenance shops and storage rooms. Since the fire suppression requirements of NFPA 409 are primarily for the protection of aircraft within the storage and servicing area, inclusion of the floor area of the ancillary spaces into the fire suppression criteria is considered unnecessary. The fire protection requirements in the ancillary areas are considered to be less extensive than those required for the aircraft servicing and storage areas. Therefore, their inclusion in the application of Table 412.4.6 for fire area size is not required where a limited degree of fire separation is provided. In order to be exempted from the fire area calculation within the aircraft hangar, it is necessary that the ancillary areas be separated from the aircraft storage and servicing areas by minimum 1-hour fire barriers. The 1-hour requirement intends to provide an acceptable fire



separation without the creation of additional fire areas that would require separation by 2-hour fire walls.

In accordance with NCBC §412.4.1, exterior walls located less than 30 feet (9144 mm) from lot lines or a public way shall have a fire-resistance rating not less than 2 hours.

Commentary: To abate the hazards of a fire condition from spreading from a commercial aircraft hangar to adjacent buildings and structures, the code requires exterior walls that are located less than 30 feet (9144 mm) from lot lines or public ways to have fire-resistance-rated construction of not less than 2 hours. Fire-resistance-rated exterior walls permit the fire department additional time and protection as it attempts to take control of a fire situation in a hangar located less than 30 feet (9144 mm) from lot lines or public ways.

V. MEANS OF EGRESS

This section contains the criteria to provide a continuous and unobstructed way of travel from any point in the building to a public way for a determined number of people who are reasonably expected to occupy the building. The means of egress includes the exit access, the actual exit, and the exit discharge. A means of egress system is only as good as its most constricting component.

Table 4 below provides a summary of maximum allowed travel distances for the S-1 occupancy aircraft hangar per NCBC §1020.4, and NCBC Table 1006.2.1, and Table 1017.2.

Table 4. Summary of Maximum Travel Distances

Occupancy Classification	Max Travel Distance [ft]	Max Dead End Distance [ft]	Max Common Path Distance [ft]
Moderate Hazard Storage, S-1	200	20	100

The size of each hangar compartment is expected to comply with all egress requirements of the NCBC.

i. Capacity of Means of Egress

The occupant load for aircraft hangars is 500 gross sq. ft. per occupant in accordance with NCBC Table 1004.1.2. With a approximate area within each hangar space (i.e. each t-hangar bay) less than 1,500 sq. ft., the occupant load of each hangar is expected to be less than 3 occupants. Therefore, a single exit compliant with the travel distances above is permitted in accordance with NCBC Table 1006.2.1.

VI. FIRE SUPPRESSION

This section of the design basis document includes the requirements for fire suppression including fire sprinklers, fire extinguishers, and other fire suppression systems required by the applicable codes.

i. Fire Sprinklers

Fire protection requirements for aircraft hangars originate in NCBC Table 412.4.6. Comparing the maximum single fire area and construction type will result in a hangar classification. For the T-hangar building, the maximum single fire area is limited to 12,000 sq. ft. and is Type IIB construction. This results



in a Group III classification. The table then defers the specific fire protection requirements to NFPA 409. The 2018 NCBC references the 2011 Edition of NFPA 409.

Chapter 8 of NFPA 409 contains the design and fire protection requirements for Group III aircraft hangars. The NCBC specifically only provides reference to NFPA 409 for fire protection requirements. Therefore, Section 8.9 is applicable. §8.9.1.1 states,

“Fixed fire protection systems shall be installed where required by and in accordance with locally adopted building codes.”

As the NCBC does not require automatic sprinkler protection for S-1 occupancies with a single fire area less than 12,000 sq. ft. (§903.2.9), or all combined fire areas on a single floor level less than 24,000 sq. ft., the T-hangar is not required to be provided with an automatic sprinkler system.

However, NFPA 409 §8.9.1.2 stipulates where hazardous operations, including fuel transfer, welding, torch cut-ting, torch soldering, doping, and spray painting, are performed in any Group III hangar, the Group III hangar shall be protected with the fire protection specified in Chapter 7 and also shall meet the requirements specified in 5.4.2. This would require the installation of an automatic sprinkler system. The hazardous activities listed in NFPA 409 are reproduced in NCBC §412.4.6.1 with similar requirement for a higher level of protection. Hazardous operations will not be performed within these hangar spaces per airport rules and terms of leasing.

ii. **Fire Extinguishers**

Portable fire extinguishers are required to be provided as required in NFPA 10, *Standard for Portable Fire Extinguishers*. General effectiveness of fire extinguishers depends on selecting a suitable suppression agent for the hazards present and ensuring proper location and labeling for ease of identification and accessibility.

Fires are classified according to behavioral characteristics and response to suppression agents. Class A fires contain ordinary combustibles such as wood, cloth, paper, rubber, and many plastics. Class B fires are fires of flammable and combustible liquids and gases. Class C fires are fires that involve energized electrical equipment. Class D fires contain combustible metals, such as magnesium, titanium, sodium, lithium, and potassium. Class K fires involve cooking appliances with combustible oils and fats.

To determine the required rating and spacing criteria, the hazard classification of the occupancy must be determined. The hazard classification for fire extinguishers is consistent with that of fire sprinkler systems. Table 5 provides a summary of fire extinguisher requirements in accordance with NFPA 10.

Table 5. Summary of Fire Extinguisher Requirements

Specific Location	Hazard Classification	Minimum Rating	Maximum Floor Area for Extinguisher [ft ²]	Maximum Travel Distance to Extinguisher [ft]
S-1 Hangar	Ordinary	2A:20B:C	11,200	50



VII. FIRE ALARM

The NCBC does not require an automatic fire detection, notification, and alarm system for S-1 occupancies in §907.2.

VIII. ADDITIONAL FIRE PROTECTION REQUIREMENTS***i. Lightning Protection***

In accordance with NFPA 409 §8.6, if lightning protection is provided it should be designed and installed in accordance with NFPA 780, *Standard for the Installation of Lightning Protection Systems*.

IX. CONCLUSION

Performance Based Fire Protection Engineering, PLLC (Consultant) has provided this Fire Protection and Life Safety Narrative for the Hickory Regional Airport T-hangar project to identify code related design requirements and describe the fire protection requirements.

If you have any questions or comments regarding the findings and recommendations to this analysis, please do not hesitate to contact us.

Sincerely,

Performance Based Fire Protection Engineering, PLLC



Pierce Lushinsky, P.E.
Director of Engineering



SECTION 01 11 00
SUMMARY OF THE WORK

1.1 LOCATION OF SITE:

3101 9th Avenue Drive NW, Hickory, NC, 28601

1.2 SCOPE OF THE WORK:

- A. The work described in the Contract Documents includes the furnishing of all labor, materials, equipment, and services necessary for the complete construction of the Project titled

City of Hickory – T Hanger

All work of this Project shall comply with the International Building Code with North Carolina Amendments.

- B. Work Done by Owner: The Owner will furnish and install the following work, generally. This itemization is not totally inclusive.

1. None

- C. Work Furnished by Owner and Installed by General Contractor:

1. None

- D. Site Work:

1. See notes on the Site Plan sheet of the Drawings for the description of division of responsibility for grading, curb and gutters, site drainage, and paving related to drives and parking areas.

2. The work includes the complete demolition and removal of all existing structures both above and below grade as required to properly install the new construction.

2. The General Contractor shall comply with applicable provisions of State and local requirements for Soil Erosion Control. The Contractor shall secure necessary approval for compliance with necessary ordinances for the construction process.

- E. Permits:

1. The Contractor shall obtain and pay for all necessary permits.

- F. Testing:

1. The Owner will employ an independent testing laboratory for testing required by these Specifications. The Contractor shall notify the testing laboratory a minimum of 24 hours in advance of performing work requiring specified testing.

2. If proper notice is not given to the testing laboratory prior to beginning work, the Contractor shall cease such work until the laboratory can properly staff the Project.

3. If the testing laboratory, after having been given the proper 24-hour notice, fails to arrive at the site at the scheduled time, the Contractor shall immediately contact the Architect for further instructions. Do not begin work to be tested prior to discussing the absence of the testing lab with the Architect.

1.3 SINGLE PRIME CONTRACT:

- A. The Owner will execute a single agreement with the successful General Contractor Bidder only and his work will include general construction, plumbing, HVAC, electrical, and all other work required by the Contract Documents.

END OF SECTION

SECTION 01 20 00
ALLOWANCES

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This Section includes administrative and procedural requirements governing alternates, allowances, and unit prices.

1.3 ALLOWANCES:

- A. Definition: An allowance is a predetermined sum of money set aside within the project budget to be used for specific items not yet fully defined in the bid documents.
- B. The Contractor shall include in the base bid all Allowances listed below.
- C. Allowances: (Note that the word provide shall mean to furnish and install.)
 - 1. Allowance No. 1: Door Hardware - \$1,200 each for Doors 100A and 101A.
 - 2. Allowance No. 2: Exterior Lighting

END OF SECTION

SECTION 01 31 00
PROJECT MEETINGS

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This Section specifies administrative and procedural requirements for project meetings, including but not limited to, the following:
- Preconstruction Conference
 - Preinstallation Meetings
 - Project Construction Meetings

1.3 PRECONSTRUCTION CONFERENCE:

- A. Shortly after the notification of an award for the construction of this Project, the Owner will schedule a Preconstruction Conference. This conference shall be attended by representatives of the Successful Contractor and major subcontractors.
- B. The Architect and his Consultants will be represented at this meeting along with the Owner's and Architect's field representatives.
- C. The purpose of this meeting will be to introduce the various personnel to be involved in the construction and to review the various scheduling and Project requirements.
- D. The General Contractor shall present a Contractor's Construction Schedule for the entire Project including all major phases of construction for review by the Architect and Owner during this meeting. Refer to Section 01 33 00 - Submittals, for additional requirements for the Contractor's Construction Schedule.
- E. The General Contractor shall submit a list of dates anticipated for the installation of "Owner-Furnished/Contractor-Installed" materials and equipment (see Section 01 11 00), as part of the Contractor's Construction Schedule.

1.4 PREINSTALLATION MEETINGS:

- A. Preinstallation meetings will be required for all major components of the Project, including, but not limited to, concrete, masonry, windows, curtainwall, roofing, and finishes. The Contractor is to schedule meetings. Minutes are to be kept by the Contractor and distributed to all parties concerned. Architect and Engineer will be present. See individual specification sections for additional requirements.
- B. Do not proceed with the installation if the meeting cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to the performance of Work and reconvene the meeting at the earliest feasible date.

1.5 PROJECT CONSTRUCTION MEETINGS:

- A. During the course of construction, the Contractor shall schedule weekly meetings, to be handled by the Contractor, to review the progress of the Project. (These meetings may be waived in the early phases of construction if the Architect agrees that such a meeting is not necessary). Minutes shall be kept by the Contractor and distributed to all parties concerned.

- B. At least monthly, one of these weekly meetings shall be attended by the General Contractor's Project Manager. A representative of the Owner and a representative of the Architect will be present.
- C. The purpose of these meetings will be to review the progress of the project, problems, and decisions required (and by whom).
- D. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time. Update Contractor's Construction Schedule as necessary to keep the status of the Project available to the Owner and the Architect. Distribute updates to all parties concerned.

END OF SECTION

SECTION 01 33 00
SUBMITTALS

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This Section includes administrative and procedural requirements for submittals required for the performance of the Work, including but not limited to, the following:

- Contractor's construction schedule
- Submittal schedule
- Daily construction reports
- Shop drawings
- Product data
- Samples
- Quality assurance submittals
- Schedule of values
- Request for information (RFI)
- Electronic Submittals

- B. Administrative Submittals: Refer to other Division 1 Section and General and Supplementary General Conditions and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following.

- Permits
- Application for payment
- Performance and payment bonds
- Insurance certificates
- List of subcontractors

1.3 SUBMITTAL PROCEDURES:

- A. Coordination: Coordinate preparation and processing of submittals with the performance of construction activities. Transmit each submittal sufficiently in advance of the performance of related construction activities to avoid delay.

- B. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

- C. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.

1. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.

- D. Processing: To avoid the need to delay installation because of the time required to process submittals, allow sufficient time for submittal review, including time for resubmittals.

1. No extension of Contract Time will be authorized because of the failure to transmit submittals to the Architect sufficiently in advance of the Work to permit processing.

- E. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Architect using a transmittal form. The Architect will not accept submittals received from sources other than the Contractor.

1.4 CONTRACTOR'S CONSTRUCTION SCHEDULE:

- A. Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart-type, Contractor's Construction Schedule. Submit within 30 days after the date established for "Commencement of Work."
- B. Provide two bars for each significant construction activity. One is the schedule bar and immediately below it is the actual progress bar. The Contractor's Construction Schedule must be signed by the Contractor and submitted no later than the second payment request.
- C. Coordinate the Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests, and other schedules.
- D. Revise the schedule after each meeting, event, or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

1.5 SCHEDULE OF SUBMITTALS:

- A. The Contractor shall prepare and submit to Architect a schedule of shop drawings, product data, samples, and other submittals as required in the General and Supplementary General Conditions and the Contract Documents. The schedule shall fix dates for submission and the lead-time for each submittal as related to the requirement for return-receipt of submittal to expedite delivery of material to maintain Contractor's Construction Schedule.
- B. 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. Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.
- C. No work shall be performed on work involving submittals until the Architect's written approval has been received.

1.6 DAILY CONSTRUCTION REPORTS:

- A. Prepare a daily construction report, including but not limited to, the following information concerning events at the site, and submit duplicate copies to the Architect at weekly intervals.
- List of subcontractors at the site
 - An approximate count of personnel at the site
 - High and low temperatures, general weather conditions
 - Meetings and significant decisions
 - Stoppages, delays, shortages, and losses
 - Orders and requests of governing authorities
 - Change orders received, implemented
 - Services connected, disconnected
 - Equipment or systems tests and startups

1.7 SHOP DRAWINGS:

- A. Electronic Drawings (.dwg) and Specifications (.doc) files will not be provided to the Contractor or subcontractors for purposes of preparing shop drawings.

- B. Submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.
- C. Shop drawing includes fabrication and installation Drawings, setting, diagrams, schedules, patterns, templates, and similar Drawings.

1.8 PRODUCT DATA:

- A. Collect product data into a single submittal for each element of construction or system. Mark each copy to show applicable choices and options. Where printed product data includes information on several products that are not required, mark copies to indicate applicable information. Product data should include, but is not limited to, the following information:
 - Manufacturer's printed recommendations
 - Compliance with trade association standards
 - Compliance with recognized testing agency standards
 - Application of testing agency labels and seals
 - Notation of dimensions verified by field measurements (when applicable)

1.9 SAMPLES:

- A. Submit samples for review of size, kind, color, pattern, and texture. Submit samples for a final check of these characteristics with other elements and a comparison of these characteristics between the final submittal and the actual component installed.
- B. Refer to other Specification Sections for requirements for samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.

1.10 QUALITY ASSURANCE SUBMITTALS:

- A. Submit quality -control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, test reports, and other quality-control submittals as required under this Section and as required in other Sections of these Specifications.

1.11 SCHEDULE OF VALUES:

- A. The Schedule of Values required by the General and Supplementary General Conditions shall be divided into the sixteen divisions included in the Specifications and itemized in sufficient detail such that the Architect can fairly evaluate the subsequent payment requests submitted by the Contractor.

1.12 REQUEST FOR INFORMATION (RFI):

- A. In the event that the Contractor discovers what he considers to be a contradiction in the Contract Documents, or feels that he requires more information than is provided by the Contract Documents, or needs clarification or an interpretation of information included in the Contract Documents, he shall submit a Request For Information (RFI) to the Architect clearly describing the information that is required and clearly referencing the specific documents and locations in the documents involved.
- B. Responses from the Architect to RFI's will not change any requirements of the Contract Documents. In the event the Contractor believes that a response to an RFI will cause a change in the requirements of the Contract Documents, the Contractor shall immediately give written notice to the Architect, stating that the Contractor considers the response to be a Change Order. Failure to give such written notice shall waive the Contractor's right to seek additional time or cost related to the RFI.

- C. All RFI's shall be on a printed form approved by the Architect. The form shall state the contractor's name, date, project name, RFI number, brief subject description, specification reference (section & page), drawing reference (sheet & detail number), room number (if applicable), and request narrative. The contractor shall sign and date each request. The form shall have sufficient space for a written reply by the Architect.
- D. All RFI's shall be numbered sequentially from beginning to completion of the Project.

1.13 ELECTRONIC SUBMITTALS:

- A. RFI Submittals: RFI file name must be the RFI number_ job number (i.e. RFI-001_24-831) and must contain the following:

- Project name
- Date.
- Submittal purpose and description.
- Specification paragraph number or drawing designation.

- B. Shop Drawing Submittals: Shop Drawing file name must be named as follows;

Section#-Submittal#-Revision#_FileName_Job#
Ex: 076200-02-00_Samples_24-831.pdf

and must contain the following:

- Project name
- Date
- Specification Section number and title.
- Contractor's stamp and review comments on the shop drawing itself.
- Indication of full or partial submittal.

1.15 NUMBER OF COPIES REQUIRED FOR SUBMITTALS:

- A. The number of copies of submittals shall be generally as described below, except where otherwise noted in these Specifications. However, all final decisions regarding this issue will be made at the Preconstruction Conference.

- B. Type of Submittal:

1. Contractor's Construction Schedule: Submit (1) PDF.
2. Schedule of Submittals: Submit (1) PDF.
3. Daily Construction report: Submit (1) PDF.
4. Shop Drawings: Submit (1) PDF.
5. Product Data: Submit (1) PDF.
6. Samples: Submit samples in duplicate until approval is secured, and then submit 2 additional equivalent samples for Architect's use.
7. Quality Assurance Submittals: as required by other Sections of the Specifications.

8. Schedule of Values: Submit in duplicate.

9. Electronic Submittal 1 PDF.

1.16 OTHER SUBMITTALS:

- A. Comply with submittal requirements specified in this Section and in other sections and parts of the Project Manual.

1.17 UNSOLICITED SUBMITTALS:

- A. The Architect will return unsolicited submittals to the sender without action.

END OF SECTION

SECTION 01 35 50
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. General product requirements.

PART 2 PRODUCTS

2.1 PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.
- B. Do not use products having any of the following characteristics:
 - 1. Made outside the United States, its territories, Canada, or Mexico.
 - 2. Made using or containing CFC's or HCFC's.
 - 3. Made of wood from newly cut old-growth timber.
- C. Where all other criteria are met, Contractor shall give preference to products that:
 - 1. Are extracted, harvested, and/or manufactured closer to the location of the project.
 - 2. Have a longer documented life span under normal use.
 - 3. Result in less construction waste.
- D. Regionally Sourced Products:
 - 1. Overall Project Requirement: Provide materials amounting to a minimum of 20 percent of the total value of all materials (excluding plumbing, HVAC, electrical, elevators, and other equipment) that have been extracted, harvested, or recovered, as well as manufactured, within a radius of 500 miles from the project site.
- E. Products with Recycled Content:
 - 1. Overall Project Requirement: Provide products with recycled content such that the sum of post-consumer recycled content plus one-half of the post-industrial recycled content constitutes at least 20 percent of the total value of all products installed, except mechanical and electrical components.
 - 2. Calculations: Determine percentage of post-consumer and post-industrial content separately.
 - a. Previously used, reused, refurbished, and salvaged products are not considered recycled.
 - b. Wood fabricated from timber abandoned in transit to the original mill is considered reused, not recycled.
 - c. Determine the percentage of recycled content of any item by dividing the weight of recycled content in the item by the total weight of all material in the item.

- d. Determine the value of recycled content of each item separately, by multiplying the content percentage by the value of the item.
- F. Sustainably Harvested Wood:
1. Definition: Wood-based materials include but are not limited to structural framing, dimension lumber, flooring, wood doors, finishes, and furnishings that are permanently installed in the project. Wood and wood-based products not permanently installed in the project are not included in the definition.
 2. Overall Project Requirement: Provide a minimum of 50 percent of all wood-based materials made of sustainably harvested wood.
 3. Certification: Provide wood certified or labeled by an organization accredited by The Forest Stewardship Council.
- G. Urea-Formaldehyde Prohibition:
1. Overall Project Requirement: Provide composite wood and agrifiber products having no added urea-formaldehyde resins.
 - a. Require each installer to certify compliance and submit product data showing product content.
- H. Flooring Systems:
1. Flooring elements installed in the interior of the building must meet the testing and product requirements of CAL (VOC).
 - a. Require each installer to certify compliance and submit product data showing product content.
- I. Adhesives and Joint Sealants:
1. Definition: This provision applies to gunnable, trowelable, and liquid-applied adhesives, sealants, and sealant primers used anywhere on the interior of the building inside the weather barrier, including duct sealers.
 2. Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No.1168.
 - a. Require each installer to certify compliance and submit product data showing product content.
- J. Aerosol Adhesives:
1. Provide only products having a lower volatile organic compound (VOC) content than required by GreenSeal GS-36.
 - a. Require each installer to certify compliance and submit product data showing product content.
- K. Paints and Coatings - Volatile Organic Compound (VOC) Content:
1. Provide paints, coatings, and primers applied to interior walls and ceilings that do not exceed the VOC limitations established in Green Seal Standard GS-11:
 - a. Flats: 50 g/L, maximum.
 - b. Nonflats: 150 g/L, maximum.
 2. Provide anti-corrosive and anti-rust paints applied to interior ferrous metal substrates that do not exceed the VOC limitations established by Green Seal

Standard GC-03:

- a. Opaque, High Gloss: 150 g/L, maximum.
3. Provide clear wood finishes, floor coatings, stains, and shellacs applied to interior elements that do not exceed the VOC limitations established in South Coast Air Quality Management District (SCAQMD) Rule No. 1113:
 - a. Clear Wood Finishes: Varnish: 350 g/L, maximum, Lacquer: 550 g/L, maximum.
 - b. Floor Coatings: 100 g/L, maximum.
 - c. Shellacs: Clear: 730 g/L, maximum, Pigmented: 550 g/L, maximum.
 - d. Sealers: Waterproofing Sealers: 250 g/L, maximum, Sanding Sealers: 275 g/L, maximum; All Other Sealers: 200 g/L, maximum.
 - e. Stains: 250 g/L, maximum.
5. Comply with architectural coatings VOC limits of the State of North Carolina, if more stringent than requirements specified above.
6. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

L. VOC Limits Throughout:

1. Wood Glues: 30 g/L.
2. Metal to Metal Adhesives: 30 g/L.
3. Adhesives for Porous Materials (Except Wood): 50 g/L.
4. Subfloor Adhesives: 50 g/L.
5. Plastic Foam Adhesives: 50 g/L.
6. Carpet Adhesives: 50 g/L.
7. Carpet Pad Adhesives: 50 g/L.
8. VCT and Asphalt Tile Adhesives: 50 g/L.
9. Cove Base Adhesives: 50 g/L.
10. Gypsum Board and Panel Adhesives: 50 g/L.
11. Rubber Floor Adhesives: 60 g/L.
12. Ceramic Tile Adhesives: 65 g/L.
13. Multipurpose Construction Adhesives: 70 g/L.
14. Fiberglass Adhesives: 80 g/L.
15. Contact Adhesive: 80 g/L.
16. Structural Glazing Adhesives: 100 g/L.
17. Wood Flooring Adhesive: 100 g/L.
18. Structural Wood Member Adhesive: 140 g/L.
19. Special Purpose Contact Adhesive (contact adhesive that is used to bond melamine covered board, metal, unsupported vinyl, Teflon, ultra-high molecular weight polyethylene, rubber, or wood veneer 1/16 inch or less in thickness to any surface): 250 g/L.
20. Top and Trim Adhesive: 250 g/L.
21. Plastic Cement Welding Compounds: 250 g/L.
22. ABS Welding Compounds: 325 g/L.
23. CPVC Welding Compounds: 490 g/L.
24. PVC Welding Compounds: 510 g/L.
25. Adhesive Primer for Plastic: 550 g/L.
26. Sheet Applied Rubber Lining Adhesive: 850 g/L.
27. Aerosol Adhesive, General Purpose Mist Spray: 65 percent by weight.

28. Aerosol Adhesive, General Purpose Web Spray: 55 percent by weight.
29. Special Purpose Aerosol Adhesive (All Types): 70 percent by weight.
30. Other Adhesives: 250 g/L.
31. Architectural Sealants: 250 g/L.
32. Nonmembrane Roof Sealants: 300 g/L.
33. Single-Ply Roof Membrane Sealants: 450 g/L.
34. Other Sealants: 420 g/L.
35. Sealant Primers for Nonporous Substrates: 250 g/L.
36. Sealant Primers for Porous Substrates: 775 g/L.
37. Modified Bituminous Sealant Primers: 500 g/L.
38. Other Sealant Primers: 750 g/L.

39. Flat Paints, Coatings, and Primers: VOC not more than 50 g/L.
40. Nonflat Paints, Coatings, and Primers: VOC not more than 50 g/L.
41. Anticorrosive and Antirust Paint Applied to Ferrous Metals: VOC not more than 100 g/L.
42. Clear Wood Finishes, Varnishes: VOC not more than 275 g/L.
43. Clear Wood Finishes, Lacquers: VOC not more than 275 g/L.
44. Floor Coatings: VOC not more than 50 g/L.
45. Shellacs, Clear: VOC not more than 730 g/L.
46. Shellacs, Pigmented: VOC not more than 550 g/L.
47. Stains: VOC not more than 100 g/L.

2.2 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meet specifications, no options or substitutions allowed.

PART 3 EXECUTION (not used)

END OF SECTION

SECTION 01 41 00
SPECIAL INSPECTIONS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Special Inspections and Structural Testing shall be in accordance with Chapter 17 of the North Carolina State Building Code, 2018 Edition.
- B. Special Inspections are a quality assurance program intended to ensure that the work is performed in accordance with the Contract Documents.
- C. This Section is intended to inform the Contractor of the Owner's quality assurance program and the extent of the Contractor's responsibilities. This Section is also intended to notify the Special Inspector, Testing Laboratory, and other Agents of the Special Inspector of their requirements and responsibilities.

1.3 SCHEDULE OF INSPECTIONS AND TESTS

- A. Required inspections and tests are described in the "Statement of Special Inspections" attached at the end of this Section.

1.4 QUALIFICATIONS

- A. The Special Inspector shall be a licensed Professional Engineer or licensed Registered Architect who is approved by the Owner.
- B. The Testing Laboratory and individual technicians shall be approved by the Owner.
- C. The Testing Laboratory shall maintain a full-time licensed Professional Engineer on staff who shall certify the test reports. The Engineer shall be responsible for the training of the testing technicians and shall be responsible for the field and laboratory testing operations.
- D. Special Inspections shall be performed by inspectors who are a licensed Professional Engineer, licensed Registered Architect, Engineer-in-Training or Engineering Intern with an education and background applicable to the work being inspected, except as indicated below:
 - 1. Technicians performing standard tests described by specific ASTM Standards shall have training in the performance of such tests and must be able to demonstrate either by oral or written examination competence for the test to be conducted. They shall be under the supervision of a licensed Professional Engineer or licensed Registered Architect and shall not be permitted to independently evaluate test results.
 - 2. Technicians performing construction field observations shall have training in the review and observation of specific construction materials and must be able to demonstrate either by oral or written examination competence for the test to be conducted. Technicians shall have certifications provided by accredited Professional Organizations within the industry for satisfactory completion of courses or tests demonstrating a thorough understanding of the work. They shall be under the supervision of a licensed Professional Engineer or licensed Registered Architect and shall not be permitted to independently evaluate test results.

1.5 SUBMITTALS

- A. The Special Inspector and Testing Laboratory shall submit to the Architect and Owner, for review, a copy of their qualifications, which shall include the names and qualifications of each of the individual inspections and technicians who will be performing inspections or tests.
- B. The Special Inspector and Testing Laboratory shall disclose any past or present business relationship or potential conflict of interest with the Contractor or any of the Subcontractors whose work will be inspected or tested.

1.6 PAYMENT

- A. The Owner shall engage and pay for the services of the Special Inspector, Agents of the Special Inspector and the Testing Laboratory.
- B. If any materials which require Special Inspections are fabricated in a plant which is not located within 100 miles of the Project, the Contractor shall be responsible for the travel expenses of the Special Inspector or Testing Laboratory.
 - 1. Expenses shall be adequate to provide same-day round-trip transportation to remote plant.
 - 2. Expenses shall include travel, lodging and meals.
- C. The Contractor shall be responsible for the cost of any retesting or re-inspections of work which fails to comply with the requirements of the Contract Documents.

1.7 CONTRACTOR'S RESPONSIBILITIES

- A. The Contractor shall cooperate with the Special Inspector and his agents so that the special inspections and testing may be performed without hindrance.
- B. The Contractor shall review the "Statement of Special Inspections" and shall be responsible for coordinating and scheduling inspections and tests. The Contractor shall notify the Special Inspector or Testing Laboratory at least 24 hours in advance of a required inspection of test. Un-inspected work that required inspection may be rejected solely on that basis.
- C. The Contractor shall provide incidental labor and facilities to provide access to the work to be inspected or tested, to obtain and handle samples at the site or at the source of products to be tested and to facilitate tests and inspection, storage and curing of test samples. Energy costs related to the testing of the smoke removal system shall be responsibility of the Contractor.
- D. The Contractor shall keep, at the Project site, the latest set of construction drawings, field sketches, approved and field use shop and erection drawings and specifications for use by the inspectors and testing technicians.
- E. The special inspection program shall in no way relieve the Contractor of his obligation to perform the work in accordance with the requirements of the Contract Documents or form implementing an effective quality control program. All work that is to be subjected to Special Inspections shall first be reviewed by the Contractor's quality control personnel.
- F. The Contractor shall be solely responsible for construction site safety.

1.8 LIMITS ON AUTHORITY

- A. The Special Inspector or Testing Laboratory must not release, revoke, alter, or enlarge on the requirements of the Contract Documents.

- B. The Special Inspector or Testing Laboratory will not have control over the Contractor's means and methods of construction.
- C. The Special Inspector or Testing Laboratory shall not be responsible for construction site safety.
- D. The Special Inspector or Testing Laboratory has no authority to stop the work.

1.9 RECORDS AND REPORTS

- A. Detailed daily reports shall be prepared of each inspection and test and submitted to all interested parties. Reports shall include:
 - 1. Date of test or inspection.
 - 2. Name of inspector or technician.
 - 3. Location of specific areas tested or inspected.
 - 4. Description of test or inspection and results.
 - 5. Applicable ASTM Standard.
 - 6. Weather conditions.
 - 7. Engineer's seal and signature.
- B. The Special Inspector shall submit interim reports to the Owner at the monthly meetings, which includes all inspections and test reports received that week. Copies shall be sent to the Architect, Engineer, Authority Having Jurisdiction and Contractor.
- C. Any discrepancies from the Contract Documents found during a Special Inspection shall be immediately reported to the Contractor. If the discrepancies are not corrected, the Special Inspector shall notify the Owner. Reports shall document all discrepancies identified and the corrective action taken.
- D. The Testing Laboratory shall immediately notify the Architect and Owner by telephone, fax, or email of any test results which fail to comply with the requirements of the Contract Documents.
- E. Reports shall be submitted to the Special Inspector within seven (7) days of the inspection or test. Handwritten reports may be submitted if final typed copies not available.
- F. At the completion of the work requiring special inspections, each inspection agency and testing agency shall provide a statement to the Special Inspector that all work was completed in substantial conformance with the Contract Documents and that all appropriate inspections and tests were performed.

1.10 FINAL REPORT OF SPECIAL INSPECTIONS

- A. The "Final Report of Special Inspections" shall be completed by the Special Inspector and submitted to the Architect and Owner prior to the issuance of a Certificate of Use and Occupancy.
- B. The "Final Report of Special Inspections" will certify that all required inspections have been performed and will itemize any discrepancies that were not corrected or resolved.

1.11 SCHEDULE OF SPECIAL INSPECTION SERVICES

- A. General: See attached schedules.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01 41 01
STATEMENT OF SPECIAL INSPECTIONS

Project: City of Hickory
T-Hangars
MG Project Number 24-831
SKA Project number 240004.1

Location: 3101 9th Avenue Drive, NW
Hickory, NC 28601

Owner: City of Hickory
Owner's Representative: Rodney Miller – Deputy City Manager/CFO
Owner's Address: 76 North Center Street
Hickory, NC 28601

Architect of Record: Michael Graves
Structural EOR: SKA Consulting Engineers, Inc.

This Statement of Special Inspections is submitted as a condition for permit issuance in accordance with the Special Inspection requirements of the 2018 North Carolina State Building Code. It includes a Schedule of Special Inspection Services applicable to this project as well as the name of the Special Inspector and the identity of other approved agencies intended to be retained for conducting these inspections.

The Special Inspector shall keep records of all inspections and shall furnish inspection reports to the State Construction Office, Structural Engineer and Architect of Record. Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the registered design professional in responsible charge, Structural Engineer and Architect of Record. The Special Inspections program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the Owner, Structural Engineer and Architect of Record. Interim Report Frequency: Monthly

A Final Report of Special Inspections documenting completion of all required Special Inspections and correction of any discrepancies should be submitted prior to issuance of a Certificate of Use and Occupancy.

Job Site safety and means and methods of construction are solely the responsibility of the Contractor.

Statement of Special Inspections Prepared by (Structural Engineer of Record):

Aaron B. Bopp, PE, LEED AP BD+C
(Type or print name)


Signature

2024-02-28
Date

Owner's Authorization

Signature Date Signature Date

Schedule of Special Inspection Services

The following sheets comprise the required schedule of special inspections for this project. The construction divisions which require special inspections for this project are as follows.

- | | |
|--|--|
| <input type="checkbox"/> Structural Steel | <input type="checkbox"/> Special Foundations |
| <input type="checkbox"/> Cold-Formed Steel Framing | <input type="checkbox"/> Wall Panels/Veneer |
| <input type="checkbox"/> Cast-in-Place Concrete | <input type="checkbox"/> Sprayed Fire-Resistant Material |
| <input type="checkbox"/> Masonry | <input type="checkbox"/> Exterior Insulation & Finish System |
| <input type="checkbox"/> Wood Construction | <input type="checkbox"/> Smoke Control |
| <input type="checkbox"/> Soils | <input type="checkbox"/> Fire Rated Penetrations |
| <input type="checkbox"/> Retaining Walls in Excess of 5' | |

Inspection Agents	Qualifications	Address
1. Special Inspector	SI	
1. Structural Engineer of Record	SER	Aaron B. Bopp, PE 7900 Triad Center Drive Greensboro, NC 27409
2. Testing Laboratory	ITL	
4. Other	See Qualifications	

Note: The inspection and testing agent shall be engaged by the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the owner, prior to commencing work.

Seismic Design Category: C

Basic Wind Speed: 115 mph

Wind Exposure Category: C

SPECIAL INSPECTIONS IN ACCORDANCE WITH THE REQUIREMENTS OF THE NC STATE BUILDING CODE ARE NOT REQUIRED FOR THIS PROJECT.

SECTION 01 42 00
REFERENCE STANDARDS & LAYOUT WORK

1.1 REFERENCE TO INDUSTRY STANDARDS:

- A. Whenever reference is made to codes, standard specifications, or other data published by regulating agencies or accepted organizations, it shall be understood that such reference is made to the latest edition (including addenda) published prior to the date of the Contract Documents, except as noted specifically otherwise by date in the Contract Documents.
- B. Requirements included in referenced standards are included in the Contract Documents by reference thereto and are an integral part of the Contract Documents as much so as if included verbatim.
- C. Among those frequently used in the Contract Documents are the following (with the respective abbreviations used):
- American Society for Testing and Materials (ASTM)
 - U. S. Department of Commerce
 - Commercial Standards (CS)
 - Product Standards (PS)
 - Federal Specifications (FS)
 - American National Standards Institute (ANSI)
 - National Electric Code (NEC)
 - North Carolina State Building Code (Code)
 - Underwriter's Laboratories Inc. (UL)
 - Architectural Woodwork Institute (AWI)
 - American Architectural Manufacturer's Association (AAMA)
 - American Concrete Institute (ACI)
 - American Iron and Steel Institute (AISI)
 - American Welding Society (AWS)
 - Prestressed Concrete Institute (PCI)
 - Steel Joist Institute (SJI)
 - Steel Deck Institute (SDI)

1.2 LAYOUT WORK:

- A. Lines and Levels: The Owner will establish lot lines, restrictions, and a benchmark. The General Contractor shall establish benchmarks in not less than 2 widely separated places. As work progresses, the General Contractor shall establish benchmarks at each floor level, giving exact levels of various floors. As work progresses, the General Contractor shall lay out the exact location of all partitions as a guide to all trades. All other grades, lines, levels, and benchmarks shall be established and maintained by the Contract requiring them, and they shall be responsible for same.
- B. Construction Tolerances:
1. Variation from Plumb: For vertical lines and surfaces of columns, walls and arises do not exceed 1/4" in 10', or 3/8" in a story height not to exceed 20', nor 1/2" in 40' or more. For external corners, expansion joints, control joints, and other conspicuous lines do not exceed 1/4" in any story or 20' maximum, nor 1/2" in 40' or more.
 2. Variation from Level: For bed joints and lines of exposed lintels, sills, parapets, horizontal grooves, and other horizontal lines, do not exceed 1/4" in any bay of 20' maximum, nor 1/2" in 40' or more. For top surface of bearing walls do not exceed 1/8" between adjacent floor elements in 10' of 1/16" within width of a single unit.

3. Variation of Linear Building Line: For position shown in plan and related portion of columns, walls, and partitions, do not exceed 1/2" in any bay of 20' maximum, nor 3/4" in 40' or more.
4. Variation in Cross-Sectional Dimensions: For columns and thickness of walls, from dimensions shown, do not exceed minus 1/4" nor plus 1/2".

END OF SECTION

SECTION 01 50 00
TEMPORARY FACILITIES

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This section includes requirements for temporary facilities, including temporary utilities, support facilities, and security and protection.

1.3 DEFINITION:

- A. Where the word "Contractor" is used in this Section, reference is to each Prime Contractor who has a direct contract with the Owner. Where "General Contractor" is used, reference is to the General Contractor only.

1.4 TEMPORARY UTILITIES:

- A. Water Service: The General Contractor shall make the necessary arrangements and provide all water service and distribution piping of sizes and pressures adequate for the entire construction period.
- B. Electric Power Service: The General Contractor shall make the necessary arrangements and provide all temporary electric service and lighting required by all trades during the entire construction period. The metered cost of electricity used shall be borne by the General Contractor.
- C. Weather Protection:
 - 1. Extent: The General Contractor shall provide all-weather protection, temporary heat or cooling and fuel as necessary to carry on the work expeditiously during inclement weather, to protect all work and materials against injury from dampness and cold, to dry out the building and to provide suitable working conditions for the installation and curing of materials until final acceptance by the Owner. Unless otherwise required in the various Specification Sections, building interiors shall be maintained between 45° F. and 85° F. during installation of interior finish work.
- E. Temporary Toilet Facilities:
 - 1. General Contractor shall provide and maintain an adequate number of temporary toilets with proper enclosures as necessary for use of all trades during construction. The location of the toilets shall be subject to the approval of the Architect. Keep toilets clean and comply with all local and state health requirements and sanitary regulations.
 - 2. Toilet facilities shall be prefabricated chemical type. Remove temporary toilets at the completion of the work.
 - 3. The toilet facilities in the buildings under construction or other existing buildings of the Owner shall not be used by the Contractor's personnel at any time.

1.5 SUPPORT FACILITIES:

- A. Contractor's Temporary Field Office: General Contractor shall provide and maintain a suitable temporary field office at the Project Site for his own use and available to the Owner and Architect during normal working hours.
1. The office shall be painted, heated during cold weather, and provided with movable windows, doors, locks, and adequate lighting to facilitate reading of the documents and other paperwork and other functions normally required in a field office. Provide layout tables, chairs, drawing racks and other furniture and equipment normally required for this purpose.
 2. The location of the temporary office shall be subject to approval by the Architect.
- B. Temporary Sheds: The Contractor shall provide and maintain additional storage sheds and other temporary buildings, or trailers as required for proper storage of materials on the site. The location of sheds and trailers shall be subject to the approval of the Architect. Remove sheds when work is completed.
- C. Temporary Construction Fence: Contractor is to provide a temporary galvanized chain link fence, minimum of 6'-0" height, with all required gates, locks, and other components as necessary to isolate the construction area from the Owner's personnel and the public and to provide security for construction materials and equipment.
1. See Drawings for the general location of the fence.

1.6 PROTECTION: Protection shall consist (in general) of the following:

- A. Plant Material: The Contractor shall protect all trees, shrubs, lawns, and all landscape work from damage, providing guards and covering. Any damaged work shall be repaired or replaced at Contractor's expense.
- B. Streets and Walks: The Contractor shall protect all existing streets and walks and shall repair any damage during construction at his own expense.
- C. Private Roads and Walks: The Contractor shall protect existing private roads and walks. He shall maintain them during the work and shall repair all damages to same at his own expense.
- D. Safety: The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work.
- E. Water Protection: The Contractor shall, at all times, protect excavation and trenches from rainwater, spring water, groundwater, backing-up of drains or sewers, and all other water. He shall provide all pumps and equipment and enclosures to provide this protection.
- F. Temporary Drainage: The Contractor shall construct and maintain all necessary temporary drainage and shall do all pumping necessary to keep excavation and low areas free of water.
- G. Snow and Ice: The Contractor shall remove all snow and ice as may be required for proper protection and execution of work.
- H. Guard Lights: The Contractor shall provide and maintain guard lights at all barricades, obstructions in streets, roads, or sidewalks, and at all trenches or pits adjacent to public walks or roads.
- I. Cold Weather: During cold weather, the Contractor shall protect all work against damage. If low temperatures make it impossible to continue operations safely (despite cold weather

precautions), Contractor shall cease work and shall so notify the Architect. In this event, the Contractor is still responsible for protecting all work in place.

J. Fire: Open fires will not be permitted.

1.7 SITE MAINTENANCE:

A. At the completion of the building pad, the General Contractor will be responsible for maintaining an area fifty (50) feet wide from the outside face of any building. This area is to be maintained to provide access to the building for all trades. Maintenance will include but is not limited to keeping the area graded level, free of rutting and excessive mud accumulation. The General Contractor is responsible for maintaining this area until the time for touch upgrading. At this time, the General Contractor will re-grade the fifty (50) foot perimeter area and all areas disturbed by construction activities. The Contractor will re-spread the topsoil around the building and provide permanent grassing and landscaping.

END OF SECTION

SECTION 01 61 00
MATERIALS AND EQUIPMENT

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This Section specifies requirements governing the Contractor's selection of products for use in the Project.
- B. The Contractor's Construction Schedule and Schedule of Submittals are included under Section 01 33 00 - Submittals.
- C. Standards: Refer to Section 01 42 00 - Reference Standards for applicability of industry standards to products specified.
- D. Procedures for handling requests for substitutions made after the award of the Contract are included under Section "Product Substitutions".

1.3 DEFINITIONS:

- A. Definitions used in this Section are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties", "systems", "structure", "finishes", "accessories", and similar terms. Such terms are self-explanatory and have well-recognized meanings in the construction industry.
 - 1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material", "equipment", "system", and terms of similar intent.
 - a. "Named Products" are items identified by the manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature, that is current as of the date of the Contract Documents.
 - b. "Foreign Products", as distinguished from "domestic products", are items substantially manufactured (50 percent or more of value) outside of the United States and its possessions; or produced or supplied by entities substantially owned (more than 50 percent) by persons who are not citizens of or living within the United States and its possessions.
- B. "Materials" are products that are substantially shaped, cut, worked, fixed, finished, refined, or otherwise fabricated, processed, or installed to form a part of the Work.
- C. "Equipment" is a product with operational parts, whether motorized or manually operated, that require service connections such as wiring or piping.

1.4 SUBMITTALS:

- A. Asbestos and PCB Certification: After completion of the installation, but prior to Substantial Completion, the Contractor shall certify in writing that products and materials installed and processes used do not contain asbestos or polychlorinated biphenyls (PCB), using format included in Section 01 78 00 - Project Closeout.

- B. Hazardous Materials Notification: In the event that no product or material is available that does not contain asbestos, PCB or other hazardous materials as determined by the Owner, a "Material Safety Data Sheet" (MSDS) equivalent to OSHA Form 20 shall be submitted for that proposed product or material prior to installation.

1.5 QUALITY ASSURANCE:

- A. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.
1. When specified products are available only from sources that do not or cannot produce a quantity adequate to complete project requirements in a timely manner, consult with the Architect for a determination of the most important product qualities before proceeding. Qualities may include attributes relating to visual appearance, strength, durability, or compatibility. When a determination has been made, select products from sources that produce products that possess these qualities, to the fullest extent possible.
- B. Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
1. Each prime Contractor is responsible for providing products and construction methods that are compatible with products and construction methods of other prime or separate Contractors.
 2. If a dispute arises between Contractors over concurrently selectable, but incompatible products, the Architect will determine which products shall be retained and which are incompatible and must be replaced.
- C. Foreign Product Limitations: Except under one or more of the following conditions, provide domestic products, not foreign products, for inclusion in the work:
1. No available domestic product complies with the Contract Documents.
 2. Domestic products that comply with the Contract Documents are only available at prices or terms that are substantially higher than foreign products that also comply with the Contract Documents.
- D. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products that will be exposed to view in occupied spaces or on the exterior.
1. Labels: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface that is not conspicuous.
 2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:
 - Name of product and manufacturer
 - Model and serial number
 - Capacity
 - Speed
 - Ratings
 - Electrical requirements

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING:

- A. Deliver, store, and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.
1. Schedule delivery to minimize long term storage at the site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, or other losses.
 3. Deliver products to the site in the manufacturer's original sealed container or other packaging systems, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 4. Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.
 5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
 6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
 7. Store products subject to damage by the elements above ground, undercover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within the range required by manufacturer's instructions.

1.7 UNAUTHORIZED MATERIALS:

- A. Materials and products required for the work of this Project shall not contain any asbestos, polychlorinated biphenyls (PCB), or other hazardous materials identified by the Owner.

1.8 PRODUCT SELECTION:

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.
1. Provide products complete with all accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and for the intended use and effect.
 2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- B. Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous Project experience. Procedures governing product selection include the following:
1. Proprietary Specification Requirements: Where only a single product or manufacturer is named, provide the product indicated. No substitutions will be permitted.
 2. Semi-proprietary Specification Requirements: Where two or more products or manufacturers are named, provide one of the products indicated. No substitutions will be permitted.

- a. Where products or manufacturers are specified by name, accompanied by the term "or equal", "or approved equal", or words of similar meaning, comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
- C. Non-Proprietary Specifications: Where the Specifications list products or manufacturers that are available and may be incorporated in the work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
- D. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without the use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
- E. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. The general overall performance of a product is implied where the product is specified for a specific application.
 - 1. Manufacturer's recommendations may be contained in the published product literature, or by the manufacturer's certification or performance.
- F. Compliance with Standards, Codes, and Regulations: Where the Specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.
- G. Visual Matching: Where Specifications require matching an established sample, the Architect's decision will be final on whether a proposed product matches satisfactorily.
 - 1. Where no product available within the specified category matches satisfactorily and comply with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching product in another product category, or for noncompliance with specified requirements.
- H. Visual Selection: Where specified product requirements include the phrase "....as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern, and texture from the product line selected.
- I. Allowances: Refer to individual Specification Sections and "Allowance" provisions in Division 1 for allowances that control product selection, and for procedures required for processing such selections.

1.9 INSTALLATION OF PRODUCTS:

- A. Comply with manufacturer's instructions and recommendations for the installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work.

1.10 PROTECTION AFTER INSTALLATION:

- A. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- B. Control traffic to prevent damage to materials, equipment, and surfaces.

- C. Cover projections, wall corners, jambs, sills, and soffits of openings in area used for traffic and passage of products in subsequent work.
- D. Floors:
 - 1. Protect finished floors from dirt and damage.
 - 2. In other areas subject to foot traffic, secure heavy paper, sheet goods, or other materials in place without damaging final finished surfaces.
 - 3. For the movement of heavy products, lay planking or similar materials in place.
 - 4. Maintain protection materials in good condition while in use.

END OF SECTION

SECTION 01 63 00
PRODUCT SUBSTITUTIONS

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This Section specifies requirements for handling requests for substitutions made after the award of the Contract.
- B. The Contractor's Construction Schedule and Schedule of Submittals are included under Section 01 33 00 - Submittals.
- C. Standards: Refer to Section 01 42 00 - Reference Standards for applicability of industry standards to products specified.

1.3 DEFINITIONS:

- A. Definitions used in this Section are not intended to change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by the Contractor after award of the Contract are considered requests for "substitutions". The following are not considered substitutions:
 - 1. Substitutions requested by Bidders during the bidding period, and accepted prior to award of Contract, are considered as included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.
 - 2. Revisions to Contract Documents requested by the Owner or Architect.
 - 3. Specified options of products and construction methods included in Contract Documents.
 - 4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS:

- A. Substitution Request Submittal: The Architect will consider requests for substitution if received within 60 days after the commencement of the Work. Requests received more than 60 days after commencement of the Work may be considered or rejected at the discretion of the Architect.
 - 1. Submit 3 copies of each request for substitution for consideration.
 - a. A reproduction of the "Substitution Request Form", included as the last page of this Section, must be used and filled in for each request for substitution.

2. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
 - a. Product data, including drawings and descriptions of products, fabrication, and installation procedures.
 - b. Samples, where applicable or requested.
 - c. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements such as size, weight, durability, performance, and visual effect.
 - d. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors, that will become necessary to accommodate the proposed substitution.
 - e. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
 - f. Cost information, including a proposal of the net change, if any, in the Contract sum.
 - g. Certification by the Contractor that the proposed substitution is equal to or better in every significant respect to that required by the Contract Documents, and that it will perform adequately in the application intended. Include the Contractor's waiver of rights to additional payment or time, that may subsequently become necessary because of the failure of the substitution to perform adequately.

- B. Architect's Action: Within one week of receipt of the request for substitution, if necessary, the Architect will request additional information or documentation necessary for evaluation of the request. Within 2 weeks of receipt of the request, or one week of receipt of additional information or documentation, whichever is later, the Architect will notify the Contractor of acceptance or rejection of the proposed substitution. If a decision on the use of a proposed substitute cannot be made or obtained within the time allocated, use the product specified by name. Acceptance will be in the form of a Change Order. Do not use any substitute materials or equipment without written approval of the Architect.

1.5 SUBSTITUTIONS:

- A. Conditions: The Contractor's substitution request will be received and considered by the Architect when one or more of the following conditions are satisfied, as determined by the Architect; otherwise, requests will be returned without action except to record noncompliance with these requirements.
 1. Extensive revisions to Contract Documents are not required.
 2. Proposed changes are in keeping with the general intent of the Contract Documents.
 3. The request is timely, fully documented, and properly submitted.

4. The request is directly related to an "or equal" clause or similar language in the Contract Documents.
 5. The specified product or method of construction cannot be provided within the Contract Time. The request will not be considered if the product or method cannot be provided because of the failure to pursue the Work promptly or coordinate activities properly.
 6. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
 7. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation, or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or separate Contractors, and similar considerations.
 8. The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.
 9. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution can provide the required warranty.
 10. Where a proposed substitution involves more than one prime Contractor, each Contractor shall cooperate with the other Contractors involved to coordinate the Work, provide uniformity and consistency, and to assure compatibility of products.
- B. The Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data, or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.
- C. Substitute products shall not be ordered or installed without the written approval of the Architect.

1.6 APPROVED SUBSTITUTIONS:

- A. For approved substitutions, submit shop drawings, product data, and samples in accordance with Section 01 33 00 - Submittals.

1.7 SUBSTITUTION REQUEST FORM: (See next page)

END OF SECTION

(Intentionally left blank.)

SUBSTITUTION REQUEST FORM:

TO: Walter Robbs Architects,
a Michael Graves Company
530 N. Trade Street, Ste 301
Winston-Salem, NC 27101

COPY TO:

PROJECT: _____ WR/MG PROJECT NO. _____

SPECIFIED ITEM: _____

Section _____ Paragraph _____ Description _____

The undersigned requests consideration of the following:

PROPOSED SUBSTITUTION: _____

Upon submitting this Request for Substitution, the undersigned certifies that the following paragraphs are correct unless otherwise modified on attachments:

1. The Contractor has investigated the proposed substitution and believes that it is equal to or superior in all respects to the specified item and will conform to design requirements and aesthetic effect.
2. The cost-saving or additional cost to the Owner for accepting substitution:
\$ _____ savings or \$ _____ additional cost.
3. The Contractor will pay the Architect and/or Engineers for additional studies, investigations, submittal reviews, redesign and/or analysis caused by the requested substitution, and at no additional cost to Owner.
4. Substitution requires dimensional changes or redesign of structure or PME Work:
No Yes (If yes, attach complete data).
5. The Contractor will waive future claims for added cost to Contract caused by substitution.
6. Changes in Contract Time caused by substitution: No Yes Add/Deduct _____ days.
7. Adverse effect on other Trades caused by substitution: None Yes (If yes, explain on attachment).
8. The Contractor will modify other parts of the Work as may be required to make all parts of Work complete and functioning properly. Yes (Explain on attached page if necessary).
9. The same type of warranty for specified product will be furnished of proposed substitution:
Yes No
10. Maintenance service available? Yes No Where? _____
11. The Contractor has complied with requirements of Section 01630 - Substitutions and the Contract Documents as part of request for substitution and has filled in this form. Yes No

REASON FOR NOT GIVING PRIORITY TO SPECIFIED ITEM: See attached Not required

Submitted by: _____

Architect's Response:

Signature _____

_____ Approved

Contractor _____

_____ Approved as Noted

Address _____

_____ Rejected

Signature: _____

Date _____

Firm: _____

Telephone _____

Date: _____

REQUIRED ATTACHMENTS:

1. Product Data for Specified Item: Clearly marked to indicate full compliance with Specification Section and Contract Documents: Attached
2. Product Data for Substitution: Clearly marked for adequate evaluation and comparison with data submitted for specified item: Attached
3. Samples: Attached Not Required
4. Cost Data and Implications of Substitution Attached Not Required
5. Contractor's Comments: Attached Not Required
6. Other: _____

END OF FORM

SECTION 01 73 00
CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This Section includes administrative and procedural requirements for cutting and patching.
- B. Refer to other Sections for specific requirements and limitations applicable to cutting and patching.
- C. Requirements of this Section apply to mechanical and electrical installation. Refer to Division 23 and Division 26 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.
- D. Contractor shall be responsible for the following, but not limited to, cutting, fitting, and patching requirements:
 - 1. Make parts fit together properly, including interfaces with existing building elements.
 - 2. Uncovering portions of the Work to provide for the installation of ill-timed work including inspections as required.
 - 3. Removing and replacing work not conforming to requirements of Contract Documents.
 - 4. Removing and replacing defective work.
 - 5. Removing samples of installed work as specified for testing.

1.3 SUBMITTALS:

- A. Cutting and patching proposal:
 - 1. Submit a written proposal to the Architect at least ten days in advance of performing any cutting or alterations which affects the following:
 - a. Work of Owner or any separate contract.
 - b. Structural elements of the project.
 - c. Life expectancy, maintenance, efficiency, or safety of operational elements.
 - d. Aesthetic qualities of visually exposed elements.
 - 2. Include the following information in proposal:
 - a. Identification of Project.
 - b. Description of affected work.

- c. The extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.
 - d. Anticipated results in terms of changes to construction, including changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
 - e. Products proposed for use.
 - f. Firms or entities that will perform the Work.
 - g. Utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
 - h. Alternative methods, if applicable.
 - i. Cost proposal, when applicable.
 - j. The written permission of any separate Contractors whose work will be affected.
 - k. Dates and times when cutting and patching work are to be performed.
3. Should conditions of the work or the schedule indicate a change of products from the original installation, the Contractor shall submit a request.
- B. Approval by the Architect to proceed with cutting and patching does not waive the Architect's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory.

PART 2 - PRODUCTS

2.1 MATERIALS:

- A. Use materials identical to original installed materials. If identical materials cannot be used where exposed surfaces are involved, use materials that fully match original adjacent surfaces possible with regard to the visual effect. Use materials whose installed performance will equal or surpass that of original materials installed. Comply with specification sections for type of work to be performed.

PART 3 - EXECUTION

3.1 EXAMINATION:

- A. Examine project conditions and surfaces to receive work including elements subject to damage or movement during cutting and patching operations. Take corrective action if unsafe or unsatisfactory conditions are encountered before proceeding with work.
- B. Inspect conditions affecting the installation of products or performance of the work after uncovering or removal of work.
- C. Inspect structural support elements that are concealed and exposed after removal for repairs or patching, for indications of loss of structural integrity, rot, rust, corrosion, or other similar conditions. Notify Architect if additional work or corrective measures are required.

- D. Report unsatisfactory or questionable conditions to Architect in writing. Do not proceed with work until Architect has provided further instructions.

3.2 PREPARATION:

- A. Temporary support: Provide adequate temporary support for work to be cut and, as necessary, to ensure the structural integrity of the affected portion of the work. Install temporary support so as not to damage the work installed or existing construction.
- B. Protection:
 - 1. Protect adjacent construction during cutting and patching work to prevent damage.
 - 2. Provide materials, devices, and methods as required to protect workers and adjacent surfaces.
 - 3. Protect portions of the work exposed to the elements which may be exposed by cutting and patching work.
 - 4. Maintain excavations free from water.
- C. Avoid interference with the use of adjoining areas or interruption of free passage to adjoining areas.
- D. Take precautions necessary to avoid cutting pipes, conduits, or ductwork serving the building including those scheduled to be removed or relocated until provisions have been made to bypass them.

3.3 WORKMANSHIP:

- A. Employ skilled workmen to perform cutting and patching work.
- B. Retain original installers or fabricators to the greatest extent possible to perform cutting and patching work for the following:
 - 1. Waterproofed or moisture-resistant elements.
 - 2. Visually exposed finished surfaces.
- C. Perform demolition and cutting work by methods that will not damage adjacent construction and will provide proper surfaces for patching work.
- D. Perform installation, fitting and adjustment of products to comply with the manufacturer's product data, its intended functions, specified tolerances and finishes.
- E. Restore work which has been cut or removed; install new products to provide completed Work in accordance with requirements of Contract Documents.
- F. Fit work tight around pipes, sleeves, ducts, conduits, and other penetrations through non-rated construction. Firestop penetrations using approved materials to cut-off and conceal draft openings in compliance with governing building codes.
- G. Where cutting and patching is required on the work of fire-resistive construction, perform work so as not to alter the fire-resistive integrity of the construction. Penetrations required through fire-resistive construction shall be fire stopped using a Through-Penetration Firestop System, Classified by Underwriters Laboratories or Factory Mutual Approved, tested in accordance with ASTM E814-88 and complying with requirements of the governing building code. Obtain required inspections and approval of local building officials prior to covering or concealing the work performed.

H. Refinish surfaces to provide an even, uniform finish to match adjacent finishes and as follows:

1. For continuous surfaces: Refinish to the nearest intersection.
2. For an assembly: Refinish the entire unit.

3.4 CUTTING:

- A. Perform cutting using methods least likely to damage elements to be retained on adjoining construction. Where possible review proposed procedures with the original installer; comply with original installer's recommendation.
- B. Use hand or small power tools designed for sawing and grinding, not hammering, and chopping, where cutting is required.
- C. Cut holes and slots neat to sizes required with minimum disturbance to adjacent surfaces. Temporarily cover the opening when not in use.
- D. Avoid marring finished surfaces, cut or drill from exposed or finished side into concealed surfaces.
- E. Perform cutting through concrete or masonry using cutting machines designed for this purpose such as carborundum saws or diamond core drills.
- F. Where utility services are required to be removed, relocated, or abandoned, bypass services such as pipes or conduits before cutting.
 1. Cut-off pipes or conduits in walls or partitions to be removed.
 2. Cap, valve, or plug and seal the remaining portion of the pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.

3.5 PATCHING:

- A. Patch with durable seams that are as invisible as possible.
- B. Where possible, inspect and test patched areas to demonstrate the integrity of installation.
- C. Restore exposed finishes of patched areas and areas extending into adjoining construction, including damaged surfaces and finishes, in a manner that will be indistinguishable in the finished work.

3.6 CLEANING:

- A. Clean areas and spaces where cutting and patching is performed or used as access.
- B. Remove excess paint mortar, oils, putty, and items of similar nature from patched work.
- C. Clean pipes, conduits, and similar items before painting or other finishing is applied.
- D. Restore damaged pipe covering to its original condition.

END OF SECTION

SECTION 01 74 00
CLEANING UP

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. Work Included This Section:

1. This Section specifies administrative and procedural requirements for final cleaning at Substantial Completion.

B. 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 (NOT USED)

PART 3 – EXECUTION

3.1 REMOVAL OF DEBRIS:

- A. All debris and waste materials shall become the property of the Contractor and the Contractor shall be responsible for removal of the debris from the Project Site on a periodic basis no less frequently than weekly. The Contractor shall be responsible for the cleanup of his own waste materials and debris.

3.2 MUD AND DUST FROM MOVEMENT OF VEHICLES:

- A. The Contractor shall not allow mud, earth-droppings, and dust to accumulate for more than one day before removing such from public streets. At no time shall any accumulation be allowed which will create a hazard to safety or which will create bad public relations.
- B. The measures to be used to prevent littering the pavement shall meet DEHNR requirements and shall include (but does not constitute the only measure to be used, if necessary) the following:
1. Maintain dust control.
 2. Wash and/or sweep paved areas.
 3. Pick up droppings as they occur.
- C. Failure to clean streets promptly (within one day's notice) will result in the Owner having streets cleaned and deducting costs for the same from Contractors' Contract Price.

3.3 FINAL CLEAN-UP:

- A. Before final inspection and acceptance of the Project, the Contractor shall clean work under the Contract, exterior and interior, to such an extent that the Owner can occupy and use the building for its intended purpose with no cleaning required by the Owner.
- B. 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 demolition activities 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.
 - b. Remove tools, construction equipment, machinery, and surplus material from the site.

END OF SECTION

SECTION 01 75 00
DOCUMENTS AT PROJECT SITE

1.1 DOCUMENTS AT THE PROJECT SITE:

- A. The Contractor shall maintain at the Project Site one complete set of Drawings and Specifications, including all Addenda, Change Orders, and other official changes thereto, for his work. The Drawings and Specifications shall be maintained in good order and readable condition. The Drawings and Specifications shall be marked in red to show changes in the work required by Addenda, Change Orders, or other change directives, and shall show as-built changes. Changes shall be noted immediately upon notification of completion of the changed work.
- B. The Contractor shall also maintain at the Project Site approved submittals, shop drawings, and erection drawings. These documents shall be maintained in good order and readable condition.
- C. All the documents required at the Project Site under this Section shall be available for use by the Owner, or their representative, at all times.
- D. Upon completion of the Project, the documents required under this Section shall be turned over to the Architect for the Owner.

END OF SECTION

SECTION 01 78 00
CONTRACT/ PROJECT CLOSE-OUT

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

- A. This Section includes administrative and procedural requirements for Project close-out including, but not limited to, the following:
- Inspection procedures
 - Project record documents
 - Operation and maintenance manuals
 - Guarantees and warranties
 - Affidavits
 - Quantity allowances and cash allowances

1.3 INSPECTION PROCEDURES FOR SUBSTANTIAL COMPLETION AND FINAL COMPLETION:

- A. Follow procedures as specified in Article 9 of the General Conditions (AIA Document A201) and the Supplementary General Conditions.

1.4 RECORD DOCUMENTS:

- A. Record Contract Drawings: Maintain and submit to Architect a clean, undamaged set of record Contract Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark which 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
- B. Record Shop Drawings: Maintain and submit to Architect a clean, undamaged set of record Shop Drawings. Mark the Shop Drawings to show the actual installation where the installation varies substantially from the Work as originally shown. Record a cross-reference at the corresponding location on the Contract Drawings.
- C. Record Specifications: Maintain and submit to Architect one complete copy of the Project Manual, including addenda. Include with the Project Manual one copy of other written construction documents, such as Change Orders and modifications issued in printed form during construction. Mark these Documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and Modifications.
- D. Record Product Data: Maintain and submit to Architect one copy of each Product Data submittal. Note related Change Orders or any other modifications issued during construction. Mark these Documents to show significant variations in actual Work performed in comparison with information submitted.
- E. Record Submittals: Maintain and submit to Architect one copy of all approved submittals.
- F. See Section 01 75 00 - Record Documents for additional information.

1.5 OPERATION AND MAINTENANCE MANUALS:

- A. Each Prime Contractor shall submit to Architect before final acceptance of the Project, 2 copies (except where required specifically otherwise elsewhere in the Contract Documents)

of all installation, operating, and maintenance instructions on equipment and materials furnished under his Contract. Each set of copies shall be bound in a 3-ring loose-leaf binder for 8 1/2" x 11" paper, with black vinyl covers. Label binder designating name of Project, name of Owner, which Prime Contract, and name of Prime Contractor.

- B. The following is a list of Operation and Maintenance Manuals required to be delivered to the Architect for the Owner prior to final payment. The Contractor will be required to provide all operation and maintenance manuals specified in Divisions 1 through 33 of these Specifications, even if inadvertently left off this list.

Operation and Maintenance Manuals:

1. Electrical equipment
2. Fire extinguishers

1.6 GUARANTEES AND WARRANTIES:

- A. Each Prime Contractor shall submit to Architect for the Owner before final acceptance 2 copies of all warranties, guarantees, and surety bonds on the work, as required under his contract. All such documents shall show the name of Project, location, and name of Owner. All guarantees and warranties will begin at the time of substantial completion.
- B. Specific guarantees and warranties (in addition to the general 12-month warranty on the entire Project) include, but are not limited to, those listed below. The Contractor will be required to provide all guarantees and warranties specified in Divisions 1 through 33 of these Specifications, even if inadvertently left off this list.

Guarantees and Warranties

1. Sealants.
 2. Fire Extinguishers
 3. Pre-Engineered Metal Building
 4. See Electrical Drawings for guarantee requirements for electrical work.
- C. Equipment identification: Submit, in duplicate, diagram/ ledger/ code for identifying the following:
1. Electrical switchgear.
 2. Electrical panels and circuits.

1.7 AFFIDAVITS:

- A. Submit to the Architect the following affidavits, in duplicate, properly executed:
1. AIA G 706 Contractor's Affidavit of Payment of Debts and Claims.
 2. AIA G 706A Contractor's Affidavit of Release of Liens.
 3. AIA G 707 Consent of Surety to Final Payment

1.8 QUANTITY ALLOWANCES AND CASH ALLOWANCES:

- A. See Section 01 20 00 for quantity allowances and cash allowances included in the Contract.
- B. Compare actual quantities and amounts versus the specified allowances and verify that the proper adjustments have been made by execution of change orders.

1.9 ASBESTOS AND POLYCHLORINATED BIPHENYLS (PCB) FREE CERTIFICATION:

- A. After completion of the installation, but prior to Substantial Completion of Project, submit asbestos and polychlorinated biphenyls free certification for all materials and equipment as specified in Division 2 through 33.
- B. The certification shall be made only by the Owner, a Partner or a Corporate Officer, or other people duly authorized to sign binding agreements for the Contractor.
- C. The certification shall be accompanied by a notarized letter of authorization from the Contractor naming the person duly authorized to sign for the Contractor.
- D. The certification shall be on Contractor's letterhead and include the following information:

The undersigned hereby certifies that all products and materials installed, and processes used, do not contain any asbestos or polychlorinated biphenyls (PCB).

(Contractor's Name) _____

Signed: _____

(Printed Name) _____

Position: _____

Date: _____

- 1.10 OTHER SUBMITTALS: Comply with submittal requirements specified in other Sections and parts of the Project Manual.

END OF SECTION

SECTION 01 83 00
EQUIPMENT MAINTENANCE AND OPERATIONS PROGRAM

1.1 SCOPE:

- A. The Contractor shall set dates, approved by the Architect and Owner, for all major building systems start-up to be observed by the Owner's maintenance and operating personnel.
- B. The various subcontractors involved in the following areas shall prepare to start-up, shut-down and operating procedures for the following:
 - Electrical systems
- C. Programs of instruction for the Owner's maintenance and operating personnel shall be prepared for the systems listed above, to be approved by the Architect and Owner, to explain the proper maintenance and operation of the building systems.

1.2 SCHEDULING:

- A. The Owner's project representative will be responsible for the coordination of the maintenance and operating personnel. He shall advise the Architect of any problems which may occur in the operating procedures.
- B. The Owner's maintenance and operating personnel will only enter the job site at the request of the Owner's project representative and with the approval of the Architect and Contractor. All comments from the maintenance and operating personnel shall be forwarded to the Contractor through the Architect.
- C. This program shall be implemented prior to the Final Inspection of the Project.

END OF SECTION

SECTION 05 50 00
MISCELLANEOUS METAL FABRICATIONS

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

A. Related Work Specified Elsewhere:

1. Anchors, Bolts, sleeves and supports required for installation of plumbing, mechanical and electrical equipment (Divisions 22, 23, and 26).

B. Work Included This Section:

1. Work to be provided herein includes all metal fabrications expressly specified hereinafter. In addition, all miscellaneous framing, bracing, supports, and other items required for the proper conduct of the work are included under this Section even if not specifically shown on the Drawings or specified herein. All miscellaneous metal framing and bracing required to fabricate and install the work indicated on the Drawings shall be provided as a part of the work under this Section if not expressly specified in other Sections of these Specifications.

1.3 INDUSTRY STANDARDS:

- A. Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the standard reference.

- The American Society for Testing and Materials (ASTM)
- Aluminum Association (AA)
- Corps of Engineers (CE)
- Federal Specifications (FS)
- American Iron and Steel Institute (AISI)
- American Welding Society (AWS)

1.4 SUBMITTALS:

- A. Shop Drawings: Submit shop drawings for all shop fabricated work of this Section. Show layout, location, arrangement, details, sizes, materials, connections, finishes, and relation to adjacent work.

1. Provide templates for anchors and bolts specified for installation under other Sections.

- B. Welding Certificates: Copies of certificates for welding procedures and personnel.

1.5 QUALITY ASSURANCE

- A. Fabricator Qualifications: A firm experienced in producing metal fabrications similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

Welding: Qualify procedures and personnel according to the following:

- AWS D1.1, "Structural Welding Code--Steel."
- AWS D1.2, "Structural Welding Code--Aluminum."
- AWS D1.3, "Structural Welding Code--Sheet Steel."

Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

1.6 PROJECT CONDITIONS

- A. Field Measurements: Where metal fabrications are indicated to fit walls and other construction, verify dimensions by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.7 COORDINATION

- A. Coordinate the installation of anchorages for metal fabrications. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to the Project site in time for installation.

PART 2: PRODUCTS

2.1 MATERIALS: Except as required specifically otherwise elsewhere in the Contract Documents, the following material requirements shall apply to this Section:

A. Ferrous Metals:

1. Metal Surfaces, General: For fabrication of miscellaneous metalwork 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.
2. Steel Plates, Shapes, and Bars: ASTM A 36.
3. Steel Bar Grating: ASTM A 569 or ASTM A 36.
4. Steel Tubing: Cold-formed, ASTM A 500; or hot-formed, ASTM A 501.
5. Steel Sheet: Hot-rolled, ASTM A 570; or cold-rolled, ASTM A 611, Class 1; of grade required for design loading.
6. Galvanized Steel Sheet: ASTM A 653, of grade required for design loading. Coating designation as indicated, or if not indicated, G90.
7. Steel Pipe: ASTM A 53; type and grade (if applicable) as selected by the fabricator and as required for design loading; black finish unless galvanizing is indicated; standard weight (Schedule 40), unless otherwise indicated.
8. Gray Iron Castings: ASTM A 48, Class 30.
9. Malleable Iron Castings: ASTM A 47, grade as selected by the fabricator.
10. Brackets, Flanges, and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.

11. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either malleable iron, ASTM A 47, or cast steel, ASTM A 27. Provide bolts, washers, and shims as required, hot-dip galvanized, ASTM A 153.

B. Aluminum Metals:

1. For extruded aluminum, AA Alloy No. 6063-T5.
2. Fasteners for Aluminum: Use fasteners made of the same basic metal as fastened metal except use galvanized fasteners complying with ASTM A 153 for exterior aluminum units unless otherwise indicated. Do not use metals that are corrosive or incompatible with metals joined.

C. Stainless Steel:

1. Provide austenitic stainless steel in the form indicated complying with the following requirements:
 - a. Tubing: ASTM A 554, Grades MT 301, MT 302, or MT 304, as standard with the manufacturer.
 - b. Pipe: ASTM A 312, Grade TP 304.
 - c. Castings: ASTM A 743, Grade CF 8 or CF 20.
 - d. Plate: ASTM A 167, Type 301, 302, or 304.
2. Finish for all stainless steel exposed to view is to be AISI #8 polished finish.

D. Grout:

1. Non-Shrink Non-Metallic Grout: Pre-mixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with CE CRD-C621. Provide grout specifically recommended by the manufacturer for interior and exterior applications of type specified in this Section.

E. Fasteners:

1. General: Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade, and class required.
2. Bolts and Nuts: Regular hexagon head type, ASTM A 307, Grade A.
3. Lag Bolts: Squarehead type, ASME B18.2.1 (ASME B18.2.3.8M).
4. Machine Screws: Cadmium plated steel, ASME B186.6 (ASME B18.6.7M).
5. Wood Screws: Flathead carbon steel, ASME B18.6.1.
6. Plain Washers: Round, carbon steel, ASME B18.22.1 (ASME B18.21.2M).
7. Masonry and Concrete Anchorage Devices: Wedge type expansion anchor such as Hiiti-Kwik II, Phillips Wedge, Wej-It, or equal approved in writing by the Architect.
8. Toggle Bolts: Tumble-wing type, class, and style as required.
9. Lock Washers: Helical spring-type carbon steel, ASME B18.21.1 (ASME B18.21.2M).

F. Concrete Fill:

1. Concrete Materials and Properties: Comply with requirements of Division 3 section "Concrete Work" for normal weight, ready-mix concrete with minimum 28-day compressive strength of 3,000 psi concrete.

G. Shop Paint:

1. Non-Galvanized Surfaces: PPG Speedhide Inhibitive Red Primer 6-208, or approved equal.
2. Galvanized Surfaces: PPG Speedhide Galvanized Steel Primer 6-209, or approved equal.

2.2 FABRICATION:

- A. Work shall be well-formed to shape and size, with sharp lines and angles. Shearing and punching shall leave clean, true lines and surfaces. Weld or rivet permanent connections. Do not use screws or bolts where they can be avoided; but where used, heads shall be countersunk, screwed uptight and threads nicked to prevent loosening. Curved work shall be evenly sprung.
- B. Castings shall be sound and free from warp, holes and other defects that impair their strength or appearance. Exposed surfaces shall have a smooth finish and sharp, well-defined lines and arrises. Machined joints, where required, shall be milled to a close fit. Provide necessary rabbets, lugs, and brackets so that work can be assembled in a neat, substantial manner.
- C. Fastenings shall be concealed where possible. The thickness of metal, and details of assembly and supports, shall have ample strength and thickness. Joints exposed to weather shall be formed to exclude water. Provide holes and connections for the work of other trades.
- D. At the proper time, deliver and set in place items of metal work to be built into adjoining construction.

2.3 WELDING:

- A. All welding shall be done by experienced welders certified by an accredited testing laboratory for the welding involved in accordance with the rules of the American Welding Society.
- B. All welds shall be power tool cleaned and the weld and surrounding area where the paint or galvanized coating has been burned away shall be painted with the type of paint specified hereinbefore for the galvanized or non-galvanized surface as applicable.

2.4 PAINTING AND GALVANIZING:

- A. Clean metal (to receive paint) with cleaner specified under Section 09910 for use with specific metal.
- B. Except as required specifically otherwise in the Contract Documents, apply primer on ferrous metalwork as specified herein.
- C. Where hot-dipped galvanized or zinc-coated metal is required, it shall not be shop primed unless specifically called for, but all damaged places and weldings shall be touched up with zinc-rich primer where shop priming is not called for. Where hot-dipped galvanizing or hot-zinc coating is specified, it shall be done in accordance with the Standard Specifications of the American Hot Dip Galvanizers Association.

D. Galvanizing:

1. Hot-dip galvanizing or zinc coatings applied on fabricated steel products shall comply with ASTM A 123.
2. Galvanized surfaces for which a shop coat of paint is specified shall be chemically treated to provide a bond for the paint.
3. Vent and drain holes in items to be hot-dip galvanized shall be drilled and not burned so that holes are precise and neat. Holes that are visible and detract from the attractiveness of the installed item shall be plugged as directed by the Architect.

2.5 MISCELLANEOUS REINFORCING AND BRACING:

- A. Provide miscellaneous metal shapes as detailed on Drawings for bracing and support of related work were not required specifically elsewhere in the Contract Documents.
- B. Shop paint ferrous metal.

PART 3: EXECUTION

3.1 PREPARATION:

- A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, including concrete inserts, sleeves, anchor bolts, and miscellaneous items having integral anchors that are to be embedded in concrete or masonry construction. Coordinate the delivery of such items to project site.
- B. Set sleeves in concrete with tops flush with finish surface elevations; protect sleeves from water and concrete entry.

3.2 INSTALLATION - GENERAL:

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners were necessary for securing miscellaneous metal fabrications to in-place construction; include threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors as required.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installation of miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry or similar construction.
- D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.
- E. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance, and quality of welds made, methods used in correcting welding work, and the following:
 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and contour of welded surface matches those adjacent.
- F. Corrosion Protection: Coat concealed surfaces of aluminum that will meet grout, concrete, masonry, wood or dissimilar metals with a heavy coat of bituminous paint or zinc chromate primer.

3.3 SETTING LOOSE PLATES:

- A. Clean concrete and masonry bearing surfaces of any bond-reducing materials, and roughen to improve bond to surfaces. The clean bottom surface of bearing plates.
- B. Set loose leveling and bearing plates on wedges, or other adjustable devices. After the bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims, but if protruding, cut off flush with the edge of the bearing plate before packing with grout.
 1. Use metallic nonshrink grout in concealed locations where not exposed to moisture; use nonmetallic nonshrink grout in exposed locations, unless otherwise indicated.
 2. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.4 ADJUSTING AND CLEANING:

- A. Touch-Up Painting: Cleaning and touch-up painting of field welds, bolted connections, and abraded areas of the shop painted on miscellaneous metal are specified in Division 9 Section PAINTING of these Specifications.
- B. For galvanized surfaces, clean welds bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A 780.

END OF SECTION

SECTION 06 10 00
ROUGH CARPENTRY

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

A. Work Included This Section:

1. Rough carpentry work as shown on Drawings and as specified herein. Include wood nailers, blocking, furring, grounds, sheathing, rough hardware, framing, shoring, bracing, scaffolding, and barriers required for installation of the work shown on the Drawings.
2. Rough carpentry work generally includes carpentry work provided on the job that is concealed from view in the completed work.

1.3 SUBMITTALS:

A. Certificates:

1. Submit certificates from applicator of preservative treatment, stating the type of treatment, manufacturer of treating chemical material, degree of treatment of wood members processed for this Project. A certificate shall be signed by an officer of the company.
2. Submit certificates certifying that flame spread, fuel contributed and smoke developed rating of the fire retardant treated wood meets or is below limits required by applicable codes and requirements of this Section. Include manufacturer's literature describing the type of treatment, manufacturer, and description of treating chemical material and degree of treatment of wood members processed for this Project.

1.4 PRODUCT HANDLING:

- A. Materials that are delivered to the Project Site in a wet condition shall be rejected, removed from the Project Site, and replaced with new and dry materials without additional cost to the Owner. Stack materials in dry storage that furnish proper ventilation, drainage, and protection from the elements. Stack in such a way that it will prevent warpage.
- B. See moisture content requirements hereinafter.

1.5 INDUSTRY STANDARDS:

- A. Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the standard reference.
- American Lumber Standards Committee (ALSC)
 - American Plywood Association (APA)
 - American Wood Preservative Association (AWPA)
 - Underwriter's Laboratories Inc. (UL)
 - U. S. Department of Commerce

- Product Standards (PS)

PART 2: PRODUCTS

2.1 MATERIALS:

- A. Moisture Content: Solid wood and plywood preservative-treated and fire retardant treated shall be dried to a maximum moisture content of 19%. Untreated solid wood and plywood shall also be dried to a maximum moisture content of 19%.
- B. Grade and Trademark: Grade and trademark shall be on each piece of lumber (or bundle in bundled stock). Use only the recognized official marks of the Association under whose rules it is graded.
- C. Quality: Lumber shall be sound, thoroughly seasoned, well manufactured, and free from warp that cannot be corrected in process of bridging or nailing.
- D. Grades and Species of Solid Wood: Grades and species of lumber shall be as follows:
 - 1. Grounds, Blocking, Nailers, Furring, and Miscellaneous Uses: No. 2 Southern Yellow Pine.
- E. Plywood:
 - 1. Fir or pine plywood conforming to PS 1 of the U. S. Dept. of Commerce, and mfd. by a member of the American Plywood Assn. Provide interior plywood with exterior glue, (except for roofing or exterior wall work and elsewhere as noted on the Drawings, provide exterior grade plywood with exterior glue) of thicknesses shown on the Drawings and grades as follows:
 - a. Provide C-D face veneers where concealed from view. If exposed to view in the finished work, provide A Grade on the exposed face.
- F. Rough Hardware:
 - 1. Except as specifically required otherwise in the Contract Documents, furnish and install all rough carpentry hardware and metal fasteners as shown on the Drawings specified herein or required for proper installation of carpentry. Nails, spikes, screws, bolts, and similar items shall be of sizes and types to rigidly secure members in place.
- G. Preservative Treatment:
 - 1. Where lumber or plywood is required to be preservative treated, comply with applicable requirements of AWPA C2 (lumber) and AWPA C9 (plywood). Mark each treated item with the Quality Mark Requirements of an inspection agency approved by ALSC's Board of Review.
 - 2. For exposed items indicated to receive stain finish, use chemical formulations that do not bleed through, contain colorants, or otherwise adversely affect finishes.
 - 3. Pressure treat aboveground items with waterborne preservatives to minimum retention of .25 lb/cu ft. (4.0 kg/cu. m)
 - 4. Pressure-treated wood members in contact with ground or freshwater with waterborne preservatives to minimum retention of .40 lb/ cu. ft. (6.4 kg/ cu. m.)

5. Treated material showing delamination, cracking or other structural defects shall be rejected.

H. Fire Retardant Treatment:

1. Where fire-retardant-treated wood is required, comply with applicable requirements of AWPA C20 (lumber), and AWPA C27 (plywood). Identify fire-retardant-treated wood with appropriate classifications marking of UL; US Testing Timber Products Inspection, Inc; or another testing and inspecting agency acceptable to authorities having jurisdiction. The label or stamp shall be such as to further designate that there is no change in the listed classification when the material has been subjected to the standard Underwriter's Laboratories rain test.
2. Treatment shall not in any way adversely affect roofing materials nor products containing gypsum, pitch, petroleum, and petroleum by-products.

I. Ply Clips:

1. H-shaped aluminum clips, minimum 1/16" thickness, for securing and spacing adjacent edges of plywood roof sheathing. Use clips at all edges of plywood panels, including edges nailed to the top chord of roof truss and unsupported edges.

PART 3: EXECUTION

3.1 INSTALLATION:

A. Wood Grounds, Blocking, Nailers, Curbs, Furring and Other Miscellaneous Uses:

1. Provide wood grounds, blocking, nailers, curbs, furring, etc. of size and shape required for bringing materials to a true surface, for securing wood trim and were required to secure other work or equipment in place. All work shall be accurately set in place, plumb, true, even, in perfect alignment, and securely fastened. Accurately and carefully fit, cut, finish flush, straight and true. Wood blocking or nailers on steel framing shall be bolted thereto.
2. Install wood furring as shown on Drawings. Secure to substrate with appropriate fasteners to provide rigid, permanent connections. Shim furring out as necessary to bring furring to true planes.
3. Install nailers at roof perimeters and at all penetrations of roofing for securing work and flashing in place. Secure nailers to roofing deck and make flush with insulation or as shown otherwise on the Drawings. Anchor wood nailers to resist a force of 75 lbs/LF in any direction. The thickness of the nailer shall be such that the top of the nailer is flush with the surface to which the roofing membrane is to be applied as shown on the membrane manufacturer's approved details and approved shop drawings.

B. Locations of Treated Wood:

1. Use preservative-treated wood where noted on the Drawings, where wood is in contact with masonry or concrete, for blocking and nailers used in roof construction and wherever used in exterior walls. If the wood is in a location requiring fire retardant treatment, then the wood shall be fire retardant treated rather than preservative treated.

2. Use fire retardant treated wood at the following locations:
 - a. Where located in fire-rated walls, ceilings, floors, or other fire-rated construction.
 - b. Where shown on the Drawings.
 - c. Where required by the North Carolina State Building Code or other prevailing codes.

END OF SECTION

SECTION 07 90 00
SEALANTS

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

a. Related Work Specified Elsewhere:

1. Hollow metal frames (Section 08 11 00).

- b. Work Included in This Section: Caulking and sealant work as shown on Drawings, as specified and as required for a watertight facility. Include all supplementary materials and installation accessories required for a complete and proper installation.

1.3 INDUSTRY STANDARDS:

- a. Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the standard referenced.

American Society for Testing and Materials (ASTM)
American National Standards Institute (ANSI)

1.4 SUBMITTALS:

- a. Installation Instructions: Submit duplicate copies of manufacturer's written instructions for installation of sealants specified.
- b. Manufacturer's Data: Submit manufacturers printed data for the sealants specified. Data shall show test results of the physical properties of the materials. Submit all data regarding joint design bringing to the Architect's attention any conditions shown on the Drawings under which the specified material cannot be satisfactorily installed.
- c. Samples: Submit samples of the full range of manufacturer's colors for selection of project colors by the Architect. As specified in Part 2 of this Section, custom colors may be required at no additional cost to the Owner.
- d. Schedule of Colors: Submit a schedule showing where selected colors of sealant are to be installed for approval by the Architect.
- e. Guarantee-Warranty:
 1. Submit guarantee-warranty on products and execution of sealant work required by this Section. The guarantee-warranty shall be submitted on the applicator's company letterhead and shall be signed by an officer of the company. Guarantee-warranty shall be countersigned by the General Contractor.
 2. Warranty shall state that work complies with requirements of the Contract Documents.
 3. Guarantee shall state that work of this Section shall be repaired or replaced in case of failure and that any materials or finishes of the building damaged by failure of

work of the Section will be repaired or replaced. The guarantee period shall be 24 months following the date of final acceptance. Repair or replacement shall be performed at no additional cost to the Owner.

- f. Compatibility and Adhesion Test Reports: From sealant manufacturer indicating the following:
 - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

1.5 QUALIFICATIONS:

- a. Source: Products for use on this Project shall be of one manufacturer unless noted specifically otherwise herein.
- b. Applicators: Submit a letter from the manufacturer of sealant materials stating that the applicator is approved by the manufacturer for application of the materials specified for the Project. Letter shall certify that the applicator has satisfactorily applied the types of materials specified on projects which have been completed for at least 5 years. The letter shall be on the manufacturer's letterhead and shall be signed by an officer of the company.

1.6 PRODUCT HANDLING:

- a. Delivery of Materials: Materials shall be delivered to the project site in the manufacturer's original, unopened containers with the manufacturer's brand name clearly marked thereon.
- b. Storage: Store containers in dry conditioned space.

1.7 ENVIRONMENTAL CONDITIONS:

- a. Do not apply sealant to materials whose surfaces are damp, wet or exceed the temperature requirements stated herein or recommended by the sealant manufacturer.
- b. Weather: No sealant materials shall be applied in wet weather nor when the threat of rain exists within 12 hours.
- c. Temperature: Shall be 40 degrees F. and rising or above with no chance of freezing until the sealant materials have had a chance to properly set up and dry. No sealant materials shall be applied when the air temperature is below 40 degrees F. unless surfaces are heated and dried by approved means.

PART 2: PRODUCTS

2.1 MATERIALS: Note that the words "Sealant" and "Caulking" are used interchangeably. Comply with locations specified for the various types of materials.

- a. Use the following sealants for general sealing and caulking work at locations other than specific locations itemized in Paragraph b. hereinafter. See Part 3 of this Section for required locations for the various types of sealants.
 - 1. Urethane Sealant:
 - (a) Compound shall be a multi-component non-sag urethane sealant. Compound shall meet ASTM C 920. Color will be selected by the Architect

to match adjacent materials and shall be a custom color at no additional cost to the Owner.

- (b) Compound shall be one of the following, or equal approved in writing by the Architect:

"Dynatrol II" as mfd. by Pecora Corp.

"Sikaflex-2C NS EZ Mix+" by Sika Corporation

2. Silicone Based Sealant:

- (a) Compound shall be a one-part, silicon-based sealant compound which meets the requirements of ASTM C 920. **Color will be selected by the Architect to match adjacent materials and shall be a custom color at no additional cost to the Owner.**

- (b) Compound shall be one of the following, or equal approved in writing by the Architect:

"790 Building Sealant" as mfd. by DOWSIL

"795 Building Sealant" as mfd. by DOWSIL

"864 Silicone" as mfd. by Pecora

"890 Silicone" as mfd. by Pecora

"Spectrum 2" as mfd. by Tremco

"Sikasil WS-305 AM" as mfd. by Sika

"Sikasil WS-395" as mfd. by Sika

3. Self-Leveling Type Sealant:

- (a) Compound shall be a two-part polyurethane-based compound which meets the requirements of ASTM C 920. Color will be selected by the Architect.

- (b) Compound shall be one of the following, or equal approved in writing by the Architect:

"Urexpan NR-200" as mfd. by Pecora Corporation

"DynaTrol II-SG" as mfd. by Pecora Corporation

"Sikaflex-2C SL" by Sika Corporation

"Vulkem 445 SSL" by Tremco.

4. Latex Caulking Compound:

- (a) Caulking shall be an acrylic-latex compound and shall be one of the following, or equal approved in writing by the Architect. Color will be selected by the Architect to match adjacent materials and shall be a custom color at no additional cost to the Owner.

"AC-20 + Silicone" as mfd. by Pecora Corp.

"Tremflex 834" as mfd. by Tremco.

- b. Primer: Provide primer recommended by sealant manufacturer.
- c. Joint Sealant Backing:
 - 1. General: Provide sealant backings of material and type which are nonstaining; are compatible with joint substrates, sealants, primers and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
 - 2. Plastic Foam Joint Fillers: Preformed, compressible, resilient, nonwaxing, nonextruding strips of flexible, nongassing plastic material described below, non-absorbant to water or gas, and of size, shape and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
 - (a) Either open-cell polyurethane foam or closed-cell polyethylene foam, unless otherwise indicated, subject to approval of sealant manufacturer, for cold-applied sealants only.
 - 3. Elastomeric Tubing Joint Fillers: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, capable of remaining resilient at temperatures down to -26 deg F (-15 deg C). Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and otherwise contribute to optimum sealant performance.
 - 4. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

PART 3: EXECUTION

3.1 PROJECT INSPECTION:

- a. Prior to the application of any sealant compound, a manufacturer's representative shall visit the project site with the Contractor and the Architect and shall instruct the Contractor's applicator in the proper procedures of handling and applying their product to the materials involved. After application, the manufacturer's representative shall inspect the sealant work and shall notify the Architect in writing of his findings.
- b. Prime all surfaces prior to applying sealant.

3.2 LOCATIONS OF SEALANTS:

- a. Seal all joints of materials on the exterior of the building and where otherwise shown or required to provide a watertight installation. Seal interior joints as shown and specified. Install interior sealant and caulking work as shown and specified and in accordance with established standards of the trade.
- b. Unless otherwise specifically shown on the Drawings, the following types of caulking and sealant compounds shall be used in the following locations:
 - 1. Interior General Use - Latex Caulking Compound.
 - 2. Exterior General Use Not Specified Otherwise - Urethane Sealant.

3. Exterior Horizontal Pavement Expansion Joints - Self-Leveling Type Urethane Sealant.
4. Vertical or Horizontal Expansion or Control Joints in Walls - Urethane Sealant.
5. Roof Flashing and Trim - Silicone or Urethane Sealant.
6. Metal and Other Nonporous Surfaces - Silicon Sealant.
7. Concrete and Other Porous Surfaces - Urethane Sealant.

3.3 JOINTS:

- a. Joint tolerances and design shall be as recommended by the sealant manufacturer. Where joint dimensions and tolerances recommended by the sealant manufacturer are more restrictive than those specified herein, the manufacturer's requirements shall govern.
- b. Joints to receive silicone-based sealants shall not be less than 1/4" in width nor greater than 5/8" in width. Sealant shall be installed to a thickness of 1/8" minimum and 1/8" maximum. Sealant shall be installed so that it adheres and bonds only to the sides of the joint and not to joint backing.
- c. Joints to receive urethane-based sealants shall not be less than 1/4" nor more than 1/4" in width. Joint depth for joint widths up to 1/2" shall be the same as the joint width. For joints over 1/2" wide, joint depth shall be approximately 1/2 the width but not more than 1/2".
- d. Joints to receive self-leveling sealant shall not be less than 1/4" wide nor greater than 2". Joints depth shall not be less than 1/4" deep nor greater than 1" deep with full-joint depth filled with sealant.
- e. Interior caulking shall be installed only where shown on the Drawings or specified under the various Sections of these Specifications. Caulking of material joints to close construction errors or joints not shown on the Drawings shall be permitted only upon written approval by the Architect.
- f. Where shown on the Drawings or called for in the Specifications, latex caulking joints shall not be less than 1/4" nor greater than 1/2" with a depth of 1/2 the face width and with caulking material installed the full depth of the joint.
- g. Where joint depth exceeds that specified herein, fill with filler rod specified for specific sealant to provide proper depth.

3.4 PREPARATORY WORK:

- a. Clean all joints of all contaminants and impurities. Concrete form release agents, water repellents, concrete laitance, and other surface treatments and protective coatings are examples of materials which must be removed from the joint surfaces to obtain proper sealant adhesion.
- b. Porous substrates shall be cleaned where necessary by grinding, saw cutting, blast cleaning (sand or water), mechanical abrading or a combination of these methods as required to provide a sound clean surface for sealant application. Dust, loose particles, etc. shall be blown out of joints with oil-free compressed air or vacuum cleaned.
- c. Metal and glass surfaces shall be cleaned by wiping a solvent saturated clean cloth over only those surfaces to which sealant will be applied. A dry, clean cloth shall be used to remove the cleaning solvent from the surface.

- d. For plastic, painted and other coated surfaces, the manufacturer shall be consulted to determine the proper cleaning solvent.
- e. Greases, protective films and coatings, dust, oil, water, surface dirt and rust are examples of contaminants which must be removed.
- f. Cleaning of all surfaces shall be done on the same day in which the sealant is installed.

3.5 PRIMING:

- a. In addition to the recommended surface preparation steps, it may be necessary to prime concrete, masonry, or other porous surfaces due to the extreme surface variability encountered on a job-to-job basis. If, in the opinion of the sealant manufacturer, joint surfaces are weak or contaminated, he shall recommend a primer for use with his sealant product to be applied on this Project.
- b. Apply primer only in accordance with each sealant manufacturer's printed recommendations.

3.6 APPLICATION OF JOINT FILLER:

- a. Joints where a backstop has not been provided shall be packed with a joint filler rod to within 1/2" of the surface.
- b. Install a breaker-strip of polyethylene film at back of joint where filler rod cannot be used to prevent bond of caulking or sealant compound to back of joint.

3.7 APPLICATION OF SEALANT:

- a. Install in strict accordance with manufacturer's printed instructions.
- b. Apply sealant compound with gun having proper size nozzle or with knife as required.
- c. See requirements of other Sections of these Specifications.
- d. Use sufficient pressure to fill all voids and joints solid and to engage compound to sides of joint. A superficial skin or fillet bead will not be acceptable.
- e. Remove excess compounds and leave surfaces neat, smooth, and clean. Joints shall be even and uniform in appearance and shall be watertight. Tool surface to produce good contact, to increase density and to improve appearance. Use masking tape to ensure a neat appearance where required; mask only the protected area and remove before sealant begins to cure.
- f. Apply sealant compound in a continuous operation, horizontally in one direction and vertically from the bottom to the top. At framed openings, apply continuously around turns and corners to completely fill corners.
- g. At completion, all sealed or caulked surfaces shall present a neat appearance and all surrounding surfaces shall be left in a clean condition.
- h. All control joints shall be sealed. Seal control joints with traffic bearing sealant with a shore hardness of d40 and a minimum movement capacity of 20%. Sealant must be compatible with floor finishes. Where self-leveling sealant compound is used, the edges of the joint shall be protected by a non-staining, easily removed tape. After the joint is filled with sealant compound, the tape shall be removed.

3.8 CLEAN-UP:

- a. Upon completion of work, remove all boxes, cartridges, and other debris. Clean sealant spillage from all adjacent surfaces.

END OF SECTION

SECTION 08 11 00
HOLLOW METAL DOORS AND FRAMES

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

- a. Related Work Specified Elsewhere:
 1. Sealants (Section 07 90 00)
 2. Door and frame schedule (See Drawings).
 3. Field painting of doors and frames (Section 09 91 00).
- b. Work Included This Section:
 1. Hollow metal doors and frames as shown on Drawings and as specified. See Drawings and schedules for types, sizes, design and location of hollow metal doors, frames, and accessories.
 - (a) Work of this Section includes field application of bituminous paint to inside of frames to height of 6" from floor, as specified in Part 2 of this Section.
 2. Fire rated doors and frames with smoke seals.
 3. Include all supplementary materials and installation accessories required for a complete and proper installation.

1.3 INDUSTRY STANDARDS:

- a. Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the standard referenced.

American National Standards Institute (ANSI)
American Society for Testing and Materials (ASTM)
Underwriter's Laboratories Inc. (UL)
Steel Door Institute (SDI)
National Fire Protection Association (NFPA)

1.4 QUALITY ASSURANCE:

- a. Steel Door & Frame Standard: Provide doors and frames complying with American National Standard Institute "Recommended Specifications Standard Steel Doors and Frames" (ANSI 250.8), (formerly SDI 100) except where requirements specified are more stringent.
- b. Fire Rated Door Assemblies: Assemblies complying with NFPA 80 and (UL) UL

10C-98 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction.

1.5 QUALIFICATIONS:

- a. Source: Products for use on this Project shall be of one manufacturer for each function unless noted specifically otherwise.

1.6 SUBMITTALS:

- a. Shop Drawings: Show typical construction and arrangement of all items. Show conditions at doors and frames in various wall thicknesses and materials. Show hardware reinforcement, anchors, and sill clips. Show thicknesses of all metal. Include a schedule listing the location in the building of each item.
- b. Product Data: For each type of door and frame indicated.

1.7 PRODUCT HANDLING:

- a. Storage:
1. Stack and store frames properly to prevent warpage and other damage. Store doors in vertical position, spaced by blocking to permit circulation of air.
 2. Upon delivery, touch up damaged areas of finish with rust inhibitive metal primer specified in Section 09910 for specific exposure of door in final location.

PART 2: PRODUCTS

- 2.1 ACCEPTABLE MANUFACTURERS: Subject to compliance with the Drawings and Specifications, provide product by one of the following, or equal approved in writing by the Architect:

Amweld Building Products Inc.
Ceco Door Products
Curries Co.
Fleming
Metal Products Inc.
Republic Builders Products
Steelcraft/Div. American Standard Co.

2.2 MATERIALS:

- a. Steel:
1. Cold-Rolled Steel Sheets: ASTM A 366, Commercial Steel (CS), or ASTM A 620, Drawing Steel (DS), Type B.
 2. Metallic Coated Steel Sheets: ASTM A 653, Commercial Steel (CS), Type B, with A60 zinc-iron-alloy coating.
 3. Steel for face sheets of hollow metal doors and for frame faces shall be stretcher leveled.

- b. Shop Coating:
 - 1. After fabrication, apply rust-inhibiting enamel or paint, either air-drying or baked, suitable for the substrate and as a base for the specified field applied finish paint, complying with ANSI A250.10, "Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames."

2.3 DOORS:

- a. General: Provide door sizes, thicknesses, and designs indicated.
- b. Interior Doors: Provide doors complying with requirements indicated below by referencing ANSI 250.8 for level and model and ANSI A 250.4 for physical endurance level:
 - 1. Heavy Duty.
- c. Exterior Doors: Provide doors complying with requirements indicated below by referencing ANSI 250.8 for level and model and ANSI A 250.4 for physical endurance level:
 - 1. Extra Heavy Duty.

2.4 FRAMES:

- a. General: Provide steel frames for doors, transoms, sidelights, borrowed lights, and other openings that comply with ANSI A 250.8 and with details indicated for type and profile Conceal fastenings, unless otherwise indicated.
- b. Frames of 16-gauge steel sheet for:
 - 1. Level 2 steel doors.
 - 2. Wood doors.
- c. Frames of 14-gauge steel sheet for:
 - 1. Level 3 steel doors.
- d. Door Silencers: Except on weather stripped frames, drill stops to receive 3 rubber silencers on strike jambs of single door frames and 2 silencers on heads of double swing frames.
- e. Plaster Guard: Provide a minimum of 26-gauge galvanized plaster guards or mortar boxes to close off interior of openings; place at back of hardware cutouts where mortar or other materials might obstruct hardware operations.
- f. Supports and Anchors: Fabricated from not less than 18-gauge electrolytic zinc-coated or metallic coated steel sheet.
- g. Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where zinc coated items are to be built into exterior walls, comply with ASTM A 153, Class C or D as applicable.

2.5 FABRICATION:

- a. General: Fabricate steel door and frame units to comply with ANSI 250.8 and to be rigid and free from defects including warp and buckle.
- b. Hollow Metal Frames:
 1. Fabricate frames generally to dimensions and profiles shown on the Drawings except that it shall be the Contractor's responsibility to verify all hollow metal frame throat sizes based upon the partition or wall types and thicknesses shown on the Drawings. Frames for sidelights, transoms and fixed glass windows shall conform to the requirements for door frames specified.
 2. Frames shall be manufactured from cold rolled steel. Fabricate frames from 16-gauge steel for interior locations and from 14-gauge steel for exterior locations.
 3. Corner joints shall have contact edges closed tight. Miter face. Cope backbend, rabbet, and stops. **Continuously weld backbend, face, stop and rabbets.** Exterior and interior frames shall be fully welded. Knock down type frames will not be acceptable. Grind exposed welds smooth and with no depressions.
 4. At hardware locations, install reinforcing plates of the following minimum gauges:
 - (a) Hinge and pivot reinforcements: 10-gauge (1 1/4" x 10" minimum size).
 - (b) All other mortised and surface mounted hardware: 14-gauge.
 5. Weld reinforcement plates to the inner surface of frame with a minimum of 6 welds per plate.
 6. At fully templated hardware, mortise, reinforce, drill, and tap frames to receive hardware in accordance with hardware manufacturer's templates. Install reinforcements furnished by hardware supplier in accordance with hardware manufacturer's templates furnished with reinforcement, except as modified.
 7. Provide a minimum of 3 anchors in each jamb. For frames over 7'-2" in height, provide an additional anchor for each 2' of height. Fabricate anchors from minimum 14-gauge steel. Anchors shall be appropriate type for wall material.
 8. Provide floor clips of not less than a minimum of 16-gauge steel for frames. Fasten to bottom of frame for anchoring frame to floor construction.
 9. Before shipment, install a temporary spreader at the bottom of the frames. Do not remove until frames are secured in place.

10. After fabrication, apply shop coats as follows:
 - (a) Exterior frames shall be fabricated from galvanized or galvanized and phosphatized sheet. Touch up weld areas and areas where zinc coating has been damaged with zinc rich primer. Apply shop primer finish equal to type specified.
 - (b) Interior frames shall be fabricated from non-galvanized sheet. Apply shop primer finish equal to type specified.
 - (c) Finished surfaces shall be smooth and free of irregularities.
 11. Field Applied Bitumastic Paint: Field apply a heavy coat of bitumastic paint to a height of 6" from floor on the inside of all frames to prevent rusting of this surface during the construction period. Apply this paint as soon as possible after receipt of frames at the site.
 12. Door Numbers on Frames: Frames shall have the door number (shown on the Architectural Floor Plans of the Drawings) permanently marked on a center hinge reinforcement.
 13. **All frames scheduled to receive heavy weight hinges shall have high frequency hinge straps welded at the top and bottom of each hinge reinforcement.**
 14. **Where smoke seals, sound seals, or weatherstripping are called for, furnish kerfed type frame profile with gasketing suited to the required condition.**
- c. Hollow Metal Doors:
1. Doors shall be flush type, 1 3/4" thick, formed of stretcher leveled, cold rolled steel sheets with core as specified, 16-gauge for exterior doors and 18 gauge for interior doors.
 2. All exterior doors shall be fabricated from galvanized or galvanized and phosphatized steel sheet specified in Paragraph 2.1. Interior doors shall be fabricated from non-galvanized sheet.
 3. Finished work shall be free from warpage, bulge or buckle. Corner bends shall be true, straight and sharp. Doors shall have no visible seams or joints on faces or stile edges.
 4. Core: Use one of the following core materials that produces a door complying with SDI standards.
 - (a) Honeycomb Core: A honeycomb core consisting of a resin impregnated Kraft paper cellular structure shall be laminated to the inside of both face sheets with an adhesive. The honeycomb material shall have a crushing strength of not less than 4000 lbs. per sq. ft. (psf) and the lamination shall withstand not less than 1100 psf in shear.
 - (1) All hollow metal doors are to have this honeycomb core except where the polystyrene core is specified below and where fire rated doors are required.

- (b) Polystyrene Core: A rigid core of polystyrene foam board shall be bonded to face sheets with an adhesive. Compressive strength of core shall not be less than 1500 psf and a shear strength of not less than 18 psi. The strength of the bond between the polystyrene and the steel face sheets shall exceed the strength of the polystyrene, so that delamination does not occur under any operating conditions.
 - (1) All exterior hollow metal doors and all hollow metal doors scheduled to receive acoustical seals (see Door Schedule on Drawings and Section 08710 - Finish Hardware) are to have this polystyrene core.
 - (c) Core for Fire Rated Doors: See Paragraph "Fire Rated Doors and Frames."
- 5. Join faces at stile edges by a continuous weld extending full height of door. Welds shall be ground, filled and dressed smooth to make them invisible and to provide a smooth, flush surface.
 - 6. Close top and bottom edges of interior doors with a continuous, recessed steel channel of not less than 16-gauge sheet steel. Close top and bottom edges of exterior doors flush (not recessed) as integral part of door construction or by addition of minimum 16-gauge inverted steel channels. Extend channels full width of door and spot weld to both faces. Space holes in bottom closure of exterior doors to permit escape of entrapped moisture.
 - 7. Provide profiles on both stiles of door as follows:
 - (a) Single Acting Swing Doors: Beveled 1/8" in 2".
 - 8. Mortise, reinforce, drill, and tap doors at factory for fully templated hardware in accordance with approved hardware schedule and with templates supplied by the hardware supplier. Reinforcements shall be welded within the door. Where surface mounted hardware is to be applied, provide only reinforcing plates in door. Drilling and tapping for hardware will be done during installation of such hardware in the field, unless noted specifically otherwise in the Contract Documents.
 - 9. Provide reinforcing plates for hardware of the following minimum gauges:
 - (a) Hinges and pivot reinforcement: 10-gauge
 - (b) Reinforcement for lock face, flush bolts, concealed holders, concealed and surface mounted closers and other hardware: 14-gauge
 - (c) Reinforcement for push, pull and kick plates: 16-gauge
 - 10. **Hinge and lock stiles shall be a continuous 14 gauge (minimum) integral channel used to form reinforcements.**
 - 11. Factory Finish: Treat all surfaces chemically to insure cleaning and maximum adhesion of finish. Install shop coat of primer complying with ANSI 250.10 for acceptable criteria and equal to types specified for

galvanized, galvanized or non-galvanized surfaces.

- c. Door Louvers:
 - 1. Louvers built into doors shall be thickness of door, with inverted "V" blades fabricated from minimum 16 gauge cold rolled steel sheet. Door faces shall frame louver blades. Seal at edges to prevent penetration of water.
 - 2. Where required, provide insect screen installed over inside face of louvers and in a removable channel frame. The screen shall be 16 x 18 mesh aluminum screen with black paint finish.
- d. Fire Rated Doors and Frames: Where fire rated doors and frames are indicated or required, provide fire rated door and frame assemblies that comply with NFPA 80 "Standard for Fire Doors and Windows", and have been tested, listed, and labeled in accordance with ASTM E 2074, by Underwriter's Laboratories or other nationally recognized independent testing and inspection agency acceptable to authorities having jurisdiction. Doors and frames shall bear the required label permanently attached on the hinge side. Door core shall be type standard with the door manufacturer and as tested and certified to bear the required UL label.

PART 3: EXECUTION

3.1 COORDINATION:

- a. Coordinate the installation of metal doors and frames with the work of other trades. Coordinate operating hardware templates to ensure that doors and frames are properly reinforced in the factory to receive the specified hardware. Verify specific location and type of hardware as required in Section 087100 and Door Schedule on Drawings.

3.2 INSTALLATION:

- a. General: Install steel doors, frames, and accessories according to Shop Drawings, manufacturer's data, and as specified.
- b. Placing Frames: Comply with provisions in SDI 105, unless otherwise indicated. Install frames plumb, rigid and in true alignment and in accordance with the manufacturer's written instructions and shop drawings approved by the Architect. Brace properly until built into wall.
 - 1. Inspect frames for plumbness and correct positioning before being anchored into the wall. Frames installed out of correct position shall be torn out and replaced.
 - 2. Secure door frames to floor with a countersunk expansion device at each jamb. Build anchors into walls as the work progresses.
 - 3. Frames installed in masonry or concrete walls shall be filled tight with masonry mortar. Install silencers prior to filling the frame.
 - 4. Install exterior frames with 1/4" to 3/8" joint between frame and wall to receive backer rod and sealant in accordance with Section 07900 - Sealants. Interior frames shall be installed tight against

construction and shall be caulked around the entire perimeter to fill minor spaces between the frame and wall.

5. Install fire-rated frames according to NFPA 80.
- c. Door Installation: Comply with ANSI 250.8. Hang metal doors plumb and true, with doors making uniform contact with metal frame stops on all sides. Metal doors that cannot be hung to fit evenly on all sides shall be removed and replaced.
1. Install fire-rated doors within clearances as specified in NFPA 80.
 2. Doors designated on door shop drawings to be undercut are specified to be factory undercut. Only the minimum amount of job fitting and machining shall be allowed on doors. All doors shall be accurately fitted to their opening and accurately machined for their hardware. In addition, pairs of doors shall have a gap at meeting stiles not exceeding 1/8" at closest point of bevel. Slope of bevel shall not exceed 1/8" in 2".
 3. All hardware is furnished under Section 08710. Application of hardware to doors and frames is specified under this Section. The requirements of Section 087100 shall apply to the installation of the door hardware.
 4. Receive, store, and be responsible for the door hardware to be installed under this Section. Properly tag, index, and file all keys until turned over to the Owner.
 5. Apply hardware in accordance with templates and manufacturer's instructions; mortise and fit accurately, apply securely, and adjust carefully. Exercise care not to injure work when applying hardware. Where butt hinges are applied to wood doors, the door shall be predrilled for a full threaded No. 12 wood screw. Coordinate with shop drawings and Contract Drawings for proper location.
 6. Doors shall be finished under Section 099100. Colors to be selected by the Architect, it is the intention for the frames and doors to match adjacent surface colors. Remove doors so they may have their bottoms and tops sealed and finished and then rehang. Cover door hardware until painting is completed. Prior to completion of building, examine doors and hardware, adjust as required, and leave hardware in proper working order, free from defect.
7. ADA Adjustments: The maximum force for pushing or pulling open a door shall be as follows:
- a. Fire doors shall have the minimum opening force allowable by the appropriate administrative authority.
 - b. Other doors.
 - exterior hinged doors: (Reserved).
 - interior hinged doors: 5 lbf (22.2N)
 - sliding or folding doors: 5 lbf (22.2N)

3.3 ADJUSTING AND CLEANING:

- a. Prime Coat Touch-up: Immediately after installation, sand smooth any rusted or damaged areas of prime coat and apply touch up of compatible air-drying primer.
- b. Protection Removal: Immediately before final inspection, remove protective wrappings from doors and frames.

END OF SECTION

SECTION 08 33 23
OVERHEAD ROLLING DOORS

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

a. Related Work Specified Elsewhere:

1. Miscellaneous metals (Section 05 50 00).
2. Door and frame schedule (See Drawings).
3. Field painting (Section 09 91 00).

b. Work Included This Section:

1. Manually operated overhead rolling doors as shown on the Drawings and specified including all supplementary components and installation accessories necessary for a complete installation properly operating and ready for use.

1.3 INDUSTRY STANDARDS:

- a. Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the standard referenced.

The American Society for Testing and Materials (ASTM)

1.4 QUALIFICATIONS:

a. Distributor and Installer:

1. Doors shall be supplied and installed by a distributor that maintains full-time installation and service crews within 250 miles of the project site. The distributor shall maintain a sufficient stock of parts for emergency service and shall warrant that service can be provided within 24 hours after notification.

1.5 SUBMITTALS:

- a. Shop Drawings: Coordinate Drawings with adjacent work. Show location of anchors and other built-in items to be installed by others prior to delivery and installation of doors. Show required clearances at sides and overhead. Show location, arrangement, materials, finishes, hardware, accessories, connections, anchorage, and relation to adjacent work.

b. Manufacturer's Data:

1. Submit manufacturer's printed physical data, test data on springs and specifications. Mark submittals to show specific data applicable to assemblies to be furnished.
2. Submit manufacturer's printed installation instructions.

- c. Warranty of Service:
1. Submit a written "Warranty of Service" as required herein from the distributor-installer. The warranty shall be written on the company's letterhead and shall be signed by an officer of the company.
- d. Guarantee-Warranty:
1. Submit a one-year guarantee-warranty on the counterbalance springs. Warranty shall state springs comply with or exceed requirements of the Contract Documents. The guarantee shall state that, if the counterbalance springs fail or break in the guarantee period of one year following final acceptance, the springs shall be replaced at no cost to the Owner for materials or labor. Guarantee-warranty shall be prepared on the company letterhead of the distributor-installer, signed by an officer of the company, and countersigned by the Contractor.

PART 2: PRODUCTS

- 2.1 ACCEPTABLE MANUFACTURERS: Subject to compliance with the Drawings and Specifications, provide doors by one of the following, or equal approved in writing by the Architect:
- Cornell Iron Works Inc.
Overhead Door Corp.
The Cookson Company
Wayne Dalton Corp.
Clipay Corp.
- 2.2 MATERIALS AND PERFORMANCE REQUIREMENTS:
- a. General:
1. To describe the type and quality of doors required, the Drawings and Specifications are based upon "**Energy Series Model 320" polystyrene insulated steel doors by Clipay**". See Paragraph "Acceptable Manufacturers" for other acceptable manufacturers. It is not necessary for products by other listed manufacturers to be identical to the specified product to be acceptable, however it must be both similar and equal in the judgment of the Architect.
 2. Doors are to be manually operated and will be interior face of wall mounted unless specifically shown otherwise in the Drawings.
- b. Materials and Performance:
1. Curtain:
 - (a) Slats: Assembled of interlocking cold rolled formed galvanized steel front and back. Steel min 0.016" at interior and min. 0.023" at exterior. Double skin slats are filled with 2" thick expanded polystyrene foam core, with calculated section R-value of 9.1.
 - (b) Steel texture: Stucco and Light Ribbed Finish.

- (c) Finish: Baked on epoxy primer (min. 0.2 mil) and pre-painted polyester topcoat (min. 0.8 mil at exterior and min 0.30 at interior).
- (d) End locks: Each end of alternate slats to be fitted with end locks to act as a wearing surface in the guides and to maintain slat alignment.
- (e) Wind load: Door construction designed to satisfy wind load of 20 PSF or 87 MPH wind load in the closed position.
- (f) Gauge: Thickness of slat material to be as required by width of opening and wind loading requirements, but not lighter than 24 gauge.
- (g) Bottom Bar: Curtain to be reinforced with a bottom bar consisting of two steel angles.
- (i) Weather Seal: Provide the door manufacturer's standard weather seal at the bottom bar to act as a weather seal at the floor.

2. Spring Counterbalance:

- (a) Counterbalance: Housed in a steel pipe of diameter and wall thickness to restrict maximum deflection to .03" per foot of door width.
- (b) Springs: To be helical torsion type designed to include an overload factor of 25% and for optimum ease of operation. Springs are to be grease packed and are to be mounted on a cold rolled steel inner shaft.
- (c) Spring Tension: Adjustable from outside of end bracket plate.
- (d) Ball Bearing: Sealed, to minimize wear of pipe shaft rotation around inner shaft.

3. Bracket Plates:

- (a) Bracket Plates: Carrying pipe counterbalancing shaft are to be no less than 1/4" thickness and are to house ends of door coil.
- (b) Drive End Bracket Plate: Fitted with a sealed ball bearing.

4. Guide and Wall Angle Assembly:

- (a) Guide/Wall Angles: Structural steel angles of 3/16" minimum thickness.
- (b) Depth of Guide: To provide adequate slat penetration to satisfy specified wind loading.
- (c) Guide Weather Seal: Furnish the door manufacturer's standard guide weatherstripping to seal against face of the curtain slats.

5. Hoods:

- (a) Hoods: To house coil are to be fabricated of 24-gauge galvanized steel and a round profile.
- (b) Hood Baffle: Furnish the door manufacturer's standard hood baffle to minimize air infiltration.

6. Finish:
 - (a) All surfaces exposed to view shall have factory baked on primer coat of epoxy modified polyester paint or equal primer paint standard with the door manufacturer. Field finish painting of doors is specified in Section 09 91 00 - Field Painting.
7. Weatherstripping:
 - (a) Include the door manufacturer's standard weatherstripping around all edges including hood baffle, astragal at bottom and guide weatherstripping.
8. Crank Operated: Provide awning type crank accessible from the floor.

PART 3: EXECUTION

3.1 INSTALLATION:

- a. Doors shall be installed by skilled mechanics experienced in the installation of the materials and equipment specified.
- b. Install doors in accordance with the Drawings, these Specifications, the manufacturer's printed instructions and approved shop drawings.
- c. Doors shall operate quietly and freely without binding and wracking.
- d. Include all supplementary components and installation accessories required for a complete and proper installation, ready for use.

END OF SECTION

SECTION 09 29 00
GYPSUM DRYWALL

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

a. Related Work Specified Elsewhere:

- 1. Wood blocking (Section 06 10 00).
- 2. Painting (Section 09 91 00).

b. Work Included This Section:

- 1. Metal framing and furring for GWB non-load-bearing interior GWB partitions.
- 2. Gypsum wallboard partitions as indicated or specified.
- 3. All trim work and other accessories required for a complete and finished installation.

1.3 SUBMITTALS:

a. Manufacturer's Data: Submit in duplicate.

- 1. Manufacturer's technical data on materials and instructions for installing gypsum wallboard partitions and ceilings including light gauge metal framing.

1.4 PRODUCT HANDLING:

a. Delivery and Storage:

- 1. Deliver products in their original wrapping and containers with labels intact.
- 2. Store gypsum products as recommended by the manufacturer to prevent damage and wetting.
- 3. Store metal items in a dry location free from physical abuse.

PART 2: PRODUCTS

- 2.1 MANUFACTURERS: To identify type and quality of materials and workmanship intended, specifications are based on the products of manufacturers listed. Products and systems manufactured by the listed companies will be acceptable when submittals specified hereinafter are approved by Architect in writing.

a. Gypsum Board and Related Products:

Gypsum Division of Georgia-Pacific
National Gypsum Company
United States Gypsum Company (USG)
American Gypsum
Pabco Gypsum

CertainTeed

b. Steel Framing, Furring and Related Products:

Studco Building Systems
ClarkDietrich Building Systems
SCAFCO Steel Stud Company
Marino/Ware Industries Inc.
Super Stud Building Products Inc.
Steel-Con Steel Construction Systems
Mill Steel Framing
Cemco
MBA Metal Framing

2.2 MATERIALS:

a. Lightweight Framing:

1. Steel Studs for Non-Load-Bearing Interior Partitions: Cold-rolled from 20-gauge galvanized steel and designed for screw attachment of wallboard. Note UL gauges listed on the drawings are a minimum requirement, heavier gauge is required by this Specification. Studs at all door jambs and jambs at any wall opening over 3'-0" wide shall be doubled. Provide floor and ceiling runners of the same gauge material as studs. See Drawings for stud sizes and shapes.

- (a) Studs for shaft wall systems shall be 20-gauge galvanized USG Steel C-H Studs, or approved equal, with overall width shown on the Drawings or if not shown the manufacturer's standard width suitable for the indicated construction conditions. J-Runners, jamb struts and other required framing members shall be same gauge and finish as the studs.

- b. Gypsum Wallboard: Provide thicknesses shown on the Drawings. For locations of the various types, see paragraph titled "Locations" in Part 3 of this Section.

1. Fire Rated, Water Resistant Wallboard: USG Securock Brand Ultralight Glass-Mt Sheathing, Firecode Type X per ASTM C 1396.

c. Screws:

1. Wallboard: As recommended by manufacturer for specific application.
2. Steel Framing: Pan-head sheet metal screws, steel, cadmium-plated.

- d. Metal Trim: No. 200A or 200B as shown.

- e. Corner Bead: Dur-A-Bead No. 103.

- f. Control Joint: Control Joint No. 093.

g. Joint Compound:

1. For Cementing Tape: Durabond 90.
2. For Fill Coats: Ready Mixed Joint-Compound All-Purpose.

- h. Joint Tape: Perf-A-Tape.

- i. Wallboard Adhesive: Durabond 90 for double layer wallboard application.

- j. USG Metal Z Furring Channel shall be of galvanized steel and of depth shown to allow thickness of rigid wall insulation or air space shown on Drawings.
- k. Resilient Channel: Type RC-1 by U.S. Gypsum Company or approved equal, of 25-gauge galvanized steel.

PART 3: EXECUTION

3.1 PRE-INSTALLATION MEETING:

- a. Approximately one week prior to commencement of work, Contractor is to schedule a pre-installation meeting.
- b. Meet at the site with drywall installer, Architect, Owner, and other representatives directly concerned with performance of the work.
- c. Contractor is to conduct the meeting with input from Architect and Consultants.
- d. Inspect and discuss condition of substrate and other preparatory work performed by other trades.
- e. Contractor to record discussions of conference, including decisions and agreements (or disagreements) reached, and furnish copy of record to each party attending. If substantial disagreements exist at the conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.
- f. Contractor to distribute minutes to all parties concerned.

3.2 INSTALLATION GENERAL:

- a. Follow manufacturer's printed instructions and recommendations of the USG's Gypsum Construction Handbook (latest edition).

3.3 INSTALLATION OF LIGHTWEIGHT FRAMING AND FURRING:

- a. Follow manufacturer's printed instructions and recommendations of the USG's Gypsum Construction Handbook (latest edition). Observe details on Drawings. Framing shall be secure, rigid and with connections sufficiently strong to carry applied loads with a 2-to-1 safety factor.
- b. Wall stud bridging shall be attached in a manner to prevent stud rotation. Bridging rows shall be spaced according to the following schedule. Walls up to 8'-0" height, one row at mid-height. Wall exceeding 10'-0" height, bridging rows spaced not to exceed 4'-6" o.c.
- c. Work shall be plumb, level, and true to line within a tolerance of plus or minus 1/8" in 10'-0" and with no abrupt deviations.
- d. Unless otherwise detailed on the Drawings, where GWB partitions are extended to the underside of the building structure above, the metal framing shall be held down 1/2" from the structure to allow for deflection of the structure. The space shall be filled with batt insulation specified in Section 07211 for non-fire-rated walls and fire stopping specified in Section 07840 for fire-rated walls and sealed as specified or shown for the wall type.

3.4 GENERAL REQUIREMENTS FOR INSTALLATION OF GYPSUM WALLBOARD:

- a. Minimum temperature in space shall be 50 deg. F. and building shall be enclosed with all exterior doors and windows in place before beginning GWB work.

- b. All ends and edges of all gypsum wallboards shall occur over supporting members. To minimize end joints, use wallboard of maximum practical lengths. Boards shall be brought into contact but shall not be forced into place. Where ends or edges abut, they shall be neatly fitted.
- c. End joints on vertical surfaces shall be staggered. Joints on opposite sides of partitions shall be arranged to occur on different studs. Joint layout at openings shall be made so that no end joints will align with edges of opening. Joints in multi-layer work shall be staggered so that joints in one layer will not occur over joints in second layer.
- d. For acoustical walls containing sound absorbing insulation between studs, install caulking at floor, ceiling, partition perimeters and where partitions abut different material. Install caulking around openings cut in wallboard partitions for doors, electrical boxes, or others. Install caulking as recommended by manufacturer of wallboard.
- e. Apply metal trim to exposed edges of wallboard, at exposed external corners and edges abutting dissimilar materials.
- f. Openings cut in wallboard to fit electrical outlets, piping, etc., shall fit snugly and shall be small enough to be covered by standard size plates and escutcheons. Both face and back paper shall be cut for all cutouts which are not made by use of a saw.
- g. Where wallboard is shown on the Drawings to be extended to building structure above, it shall follow the profile of the structure and the joints shall be bedded and taped. Sanding of joints above ceiling is not required.

3.5 FURRING CHANNELS:

- a. Screw clip hat-shaped channel furring to supports. Space furring channels at 1'-4" o.c. unless shown otherwise on the Drawings. Overlap splices of furring channels 5 1/2". Secure with 2 double strand ties. Minimum end clearances at walls for furring channels shall be 3/8".

3.6 APPLICATION OF FIRE RATED WALLBOARD:

- a. Where the Drawings show fire rated wallboard and reference a specific UL Design Number, the application of wallboard to the substrate shall be exactly as specified in the UL or other publication for the referenced Design Number, including the types and spacing of all anchors.

3.7 APPLICATION OF WALLBOARD ON FURRING CHANNELS:

- a. Attach wallboard with long dimensions at right angles to main furring channels. Secure wallboard to furring channels with screws at 8" at perimeters and 12" in the field of the panels.
- b. All screws shall be power-driven with an electric screwdriver. Screw heads shall provide a slight depression below surface of board without cutting paper.

3.8 APPLICATION OF WALLBOARD ON STEEL STUDS:

- a. Provide single-layer vertical application of gypsum panels and space screws 12" o.c. in field of panels and 8" o.c. staggered along vertical abutting edges.
- b. For double-layer laminated construction, attach base layer with 1" Type S screws spaced 8" o.c. at joint edges and 12" o.c. in field. Apply face layer vertically with adhesive on back side, joints staggered approximately 12" and fastened to base layer with 1 1/2" Type G screws. Drive screws approximately 2' from ends and 4' o.c. in field of panel, 1' from ends

and 3' o.c. along a line 2" from vertical edges. Temporary shoring or support installed 16" to 24" o.c. until adhesive is dry may be used in place of screws.

1. In lieu of using adhesive, both layers may be screw attached as follows: attach the base layer with screws at 12" o.c. both at the perimeter and field of the panel and then attach the face layer with screws 12" o.c. both at the perimeter and field of the panel.

3.9 METAL TRIM AND CORNER BEADS: Installation of trim and corner beads shall be straight, plumb, and uniformly spaced along adjacent work. Fasten securely as recommended by the manufacturer of trim.

- a. At outside corners, embed one layer of joint tape in joint compound at each leg of the corner bead, in addition to the normal application of joint compound, to prevent a concave area on each side of the corner bead when the joint compound dries and cures.

3.10 FINISHING:

- a. Joint Treatment: Embed tape in cementing compound. Cover with 3 applications of fill coat in accordance with the Gypsum Association Level 4 Gypsum Board Finish Requirements. (use Level 5 under critical lighting conditions or when glossy paint is used) Install materials in accordance with manufacturer's printed instructions to produce smooth, inconspicuous joints and well filled to prevent ridging. Avoid raising nap on wallboard when sanding down fill coats.
- b. Metal Trim and Corner Beads: Extend embedded tape to face of edge or corner ground and terminate. Finish like wallboard joints.
- c. Wallboard Face Repair: Repair and finish all attachment heads, depressions and minor wallboard face imperfections with material and as recommended by the manufacturer.

3.11 CONTROL JOINTS:

- a. Provide control joints at locations shown on the Drawings and if not shown at maximum spacing given in table titled "Max. Spacing USG Control Joints" included in the U. S. Gypsum Construction Handbook, latest edition.

END OF SECTION

SECTION 09 91 00
FIELD PAINTING

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

a. Related Work Specified Elsewhere:

1. Shop priming and factory finishing of certain materials and equipment are specified in other sections of the Specifications.
2. Special coatings such as epoxy coatings, elastomeric coatings and other special high-performance coatings may be specified in other Sections of this Division of the Specifications.

b. Work Included This Section:

1. All field painting on the entire Project, including materials, equipment, and electrical materials and equipment, is specified as work of this Section 09 91 00.
2. Paint all surfaces exposed to view in the completed work, both exterior and interior, unless specifically enumerated not to be painted.
3. Work includes field painting of exposed bare and covered pipes and conduit (including color coding), and of hangers, exposed steel conduit and iron work, miscellaneous metal items and primed metal surfaces of materials and equipment installed under electrical work.
4. Work includes stenciling "Fire And Smoke Barrier - Protect All Openings", or similar wording as required by authorities having jurisdiction, signs above ceilings on both sides of all fire rated walls.
5. Paint exposed surfaces whether or not designated in finish schedules. Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas. If color or finish is not designated, Architect will select these from standard colors or finishes available.
6. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, sealers, and other applied materials whether used as prime, intermediate or finish coats.
7. Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of work.

c. Surfaces Not to Be Painted:

1. Unless otherwise indicated, painting is not required for surfaces for which the natural finish of the material is obviously the final finish, such as (for example only) glass, precast concrete, and other such items that traditionally and obviously are not painted.

2. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified for such items as (for example only) pre-finished partition systems, pre-finished electrical equipment, including light fixtures, switchgear and distribution cabinets.
3. Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as (for example only) walls or ceilings in concealed areas and generally inaccessible areas, furred areas, and pipe spaces.
4. Finished Metal Surfaces: Unless otherwise indicated, metal surfaces of (for example only) anodized aluminum, stainless steel, chromium plate, and similar finished materials will not require finish painting. Note that galvanized steel does not fall into this category and is required to be painted.
5. Operating Parts: Unless otherwise indicated, moving parts of operating units, electrical parts, linkages, sensing devices, motor and fan shafts will not require finish painting.
6. Do not paint over any code-required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates. An exception to this is that embossed or etched fire rating labels on hollow metal frames may be painted over if they are cleaned and properly prepared so that paint will adhere tightly to the label.
7. Finish Schedule: Painting is not required for walls, floors and ceilings that are specifically scheduled not to be painted in the Finish Schedule.

1.3 QUALITY CONTROL:

- a. Color Samples: Submit samples of colors selected by the Architect in duplicate for final approval. Samples shall be approximately 8" x 10" size and on wood when finish is to be on wood; on gypsum wallboard when finish is to be on gypsum wallboard, masonry, concrete, or plaster; and on sheet steel when finish is to be on metal. Sample shall be finished as specified in "Schedule of Paint Systems."
- b. Shop Drawings: Submit manufacturer's literature completely describing each type of paint, including each product in the stain and varnish system, and including manufacturer's published installation instructions for each product. See Paragraph "Materials" for other submittal requirements.
- d. Manufacturer's Approval: Submit letter from manufacturer's representative that substrates have been tested and moisture content in substrate is acceptable to receive paint system.

1.4 INDUSTRY STANDARDS:

- a. Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the standard referenced.

The American Society for Testing and Materials (ASTM)

1.5 PRODUCT HANDLING:

- a. Delivery and Storage:
 1. All materials shall be delivered to the site in the manufacturer's sealed packages with labels intact and seals unbroken.

2. A space will be designated for the storage of paint materials and tools. Whenever it may be necessary to change the location of this storage space, promptly move to the newly designated place. Protect the storage space floor from damage.
3. Cover all paints at all times. Take all safeguards to prevent fire.

PART 2: PRODUCTS

2.1 MATERIALS:

a. Painting Materials:

1. To describe the type and quality of materials intended, painting materials specified are products of Sherwin Williams. Paint products of Benjamin Moore, PPG, Pratt and Lambert, or others may be used when the following is approved in writing by the Architect.
 - (a) Submit to the Architect a schedule of painting based on the format hereinafter used to specify paint systems for the various surfaces, stating the brand name, trade name and manufacturer's number of each of the materials proposed.
 - (b) Include manufacturer's data sheet for each type of paint proposed.
 - (c) Include complete installation instructions for each paint product including for stain and varnish work wood filler, solvent wash, stain, sanding sealer, varnish and all other products of the stain and varnish system.
 - (d) Receive from the Architect written approval of these submittals before beginning work.
2. Tinting of colorants shall be as recommended by manufacturer of finishing materials and shall be those supplied by the finish manufacturer. All colors shall be non-fading under exposure to which they will be normally subjected.
3. Additives to Finishing Materials: Add only those ingredients required or recommended by the manufacturer of the finishing material. Source of such additives shall be as recommended by the manufacturer of finishing material.
4. Thinner: Shall be type and product recommended by manufacturer of finishing material.
 - (a) Turpentine: Pure gum spirits of turpentine, conforming to ASTM D 13.

b. Metal Cleaners: As recommended by the paint manufacturer.

2.2 FIRE AND SMOKE BARRIER SIGNS:

- a. Fire-rated walls shall be effectively and permanently identified with stenciled signs provided in accordance with the 2002 International Building Code with North Carolina Amendments and other authorities having jurisdiction. Such signs shall be located above any decorative ceiling and in concealed spaces, on both sides of the wall and shall read "Fire and Smoke Barrier - Protect All Openings". or similar wording as required by authorities having jurisdiction. Color shall be white background with red letters.
- b. Stenciled letters shall be 2" high and signs shall be located 20'-0" on centers maximum.

2.3 SCHEDULE OF PAINT SYSTEMS:

- a. Except as required otherwise in the Contract Documents for specific areas or surfaces, the following materials, or approved equal, shall be used on the surfaces scheduled:
- b. Review the entire Drawings and Specifications including Divisions 15 and 16 Mechanical and Electrical Specifications for description of materials and equipment therein to be painted under this Section. See Paragraph "1.2 Scope" for additional information and requirements regarding work included in this Section.

1. EXTERIOR PAINT SYSTEMS:

Provide the following paint systems for various substrates, as indicated:

(a) EXTERIOR FERROUS METAL:

SYSTEM	Latex Gloss
PRIMER	1 coat All Surface Enamel latex Primer A41W210
FINISH	2 coats A100 Exterior Latex Gloss House Paint

(b) EXTERIOR ALUMINUM:

SYSTEM	Gloss
FINISH	2 coats DTM Gloss (B66-100)

(c) EXTERIOR GALVANIZED METAL:

SYSTEM	Latex Gloss
PREP	SW Prepaint Cleaner (no rinse)
PRIMER	1 coat All Surface Enamel Latex
FINISH	2 coats A100 Latex Gloss House Paint

2. INTERIOR PAINT SYSTEMS: Provide the following paint systems for various substrates, as indicated:

(a) INTERIOR FERROUS METAL:

SYSTEM	Latex Semi Gloss
PRIMER	All Surface Latex Enamel Primer
FINISH	2 coats Pro Mar 200 Latex Semi-Gloss

(b) INTERIOR GALVANIZED METAL:

SYSTEM	Latex Semi Gloss
PRIMER	All Surface Latex Enamel Primer
FINISH	2 coats Pro Mar 200 Latex Semi-Gloss

(c) INTERIOR ALUMINUM:

SYSTEM	Alkyd Base, Semi Gloss
PRIMER	1 coat Galvite HS Primer
FINISH	2 coats Pro Mar 200 Interior Alkyd Semi-Gloss

(d) INTERIOR EXPOSED CEILINGS (including metal deck, bar joists, air ducts, etc.):

SYSTEM	Flat Dry Fall
SURFACE PREP	Surfaces must be firm, dry and clean, free

of dirt, grease and other surface contaminants. Scrub or high-pressure detergent wash as required. Allow to thoroughly dry.

PRIMER 1 coat Pro-Cryl Primer
FINISH 1 or 2 coats Super Savelite Flat Dry Fall B-48 series

(i) INTERIOR GYPSUM WALLBOARD: (Eggshell)

SYSTEM Latex, Eggshell
PRIMER 1 coat Preprite Classic Primer
FINISH 2 coats Pro Mar Latex Eg-shel

(j) INTERIOR GYPSUM WALLBOARD (Flat)

SYSTEM Latex Flat
PRIMER 1 coat Preprite Classic Primer
FINISH 2 coats Pro-Mar 200 Latex Flat

(k) INTERIOR GYPSUM WALLBOARD (Epoxy)

SYSTEM Water Based Epoxy
PRIMER 1 coat Water Based Catalyzed Epoxy Primer
FINISH 2 coats Water Based Catalyzed Epoxy

(o) PIPE AND EQUIPMENT INSULATED COVERING:

SYSTEM Enamel, Semi Gloss
PRIMER 1 coat All Surface Enamel Primer A41W210
FINISH 2 coats Pro Mar 400 Latex Semi-Gloss

(p) PLASTIC SURFACES:

SYSTEM Latex, Semi Gloss
PREPARATION Scuff-sand all plastic surfaces prior to application of primer
PRIMER 1 coat Preprite Bonding Primer (test for adhesion)
FINISH 2 coats Pro Mar Latex Semi-Gloss

(r) INTERIOR CONCRETE FLOORS:

SYSTEM Acrylic
FINISH 2 coats Kure-N-Seal W Concrete Sealer by Sonneborn.

PART 3: EXECUTION

3.1 COLORS:

- a. Before any work is done, the Architect will furnish the Contractor with a color schedule showing where the various colors shall go. The Contractor shall then submit samples and prepare samples for the job as specified in Paragraph "Submittals".

3.2 GENERAL REQUIREMENTS:

- a. A pre-installation meeting is required for all painting. Meeting shall be attended by Owner, Architect, Contractor, and other representatives directly concerned with performance of the work. The Contractor will conduct the meeting.

- b. All painting procedures, including surface preparation and application of materials shall be in strict accordance with the manufacturer's published instructions and recommendations.
- c. The commencing of work, or the absence of notification in writing to the contrary, shall be construed as acceptance of the surfaces to be finished as satisfactory to receive the finishes and to produce the results required.
- d. All spaces shall be broom clean before painting is started.
- e. Surfaces to be finished shall be clean, dry, smooth, and adequately protected from dampness.
- f. Provide ample protection for, and take particular care to protect adjoining surfaces, fixtures, and materials of all kinds. Repair any damage caused by the work of this Section. If necessary to accomplish this, remove and protect hardware, accessories, device plates, lighting fixtures, factory finished work and similar items. Upon completion of each space, carefully replace all removed items. Use only skilled mechanics for removal, replacement, and protection.
- g. Remove doors to finish top and bottom after doors have been fitted.
- h. Remove electrical panel box cover and door before painting wall. Paint separately and reinstall after all paint is dry.
- i. No work shall be done under conditions which are unsuitable to produce good results. Do not apply paint when the temperature is below 50° F. Do not apply exterior paint in damp, rainy weather. Do not apply finishes on surfaces so hot as to prevent proper application and drying. Do not apply finishes in spaces where dust is being generated that would speck the finish.
- j. Before painting concrete, test surfaces with a moisture testing device. No paint or sealer shall be applied on concrete when moisture is tested to be over 5.5%. Provide manufacturer's approval letter as specified in Part 1 of this Section.

3.3 PREPARATION OF SURFACES:

- a. Gypsum Drywall: Follow the USG Handbook (latest edition) for cleaning and prepping surface.
- d. Steel and Iron:
 - 1. Remove grease, rust, scale, and dust. Except as noted otherwise, sandpaper is required to produce a satisfactory surface for painting.
- g. Galvanized Metal: Thoroughly clean with metal cleaner according to cleaner manufacturer's directions; rinse and wipe dry. Galvanized steel manufacturer and paint manufacturer must approve the use of the cleaner prior to use.

3.4 PRIMING:

- a. See the other Sections of these Specifications for shop priming requirements specifically related to materials and items therein specified.
- b. The shop coat is not to be considered this Contractor's prime coat. Apply primer as specified.
- c. All coats required in the schedule of painting shall be applied, including all scheduled prime coats and finish coats. The surfaces of factory primed items shall be sanded if necessary

and otherwise properly prepared and all scheduled prime coats and finish coats shall be applied.

3.5 APPLICATION:

- a. All paint materials shall be stirred or agitated thoroughly until the ingredients are completely mixed.
- b. Surface to be stained or painted shall be adequately protected from dampness.
- c. Each coat of paint shall be well applied, worked out evenly and allowed to dry (at least 24 hours) before the subsequent coat is applied.
- d. Sand between coats to produce an even, smooth finish.
- e. Suction or hot spots in concrete which are noticeable through the first coat shall be touched up before applying the second coat to produce an even result in the finish coat.
- f. Where only one coat of the finish material is required by the schedule of painting, the undercoat shall be tinted to match the finish coat.
- g. Finished work shall be uniform, of approved color, and free from runs, sags, defective brushing, clogging or excessive flooding. Make edges of paint adjoining other materials or colors sharp, straight, clean and without overlapping.
- h. Use fillers, sealers, primers, and other materials as recommended by the stain manufacturer such that the applied stain work will result in a uniform color and will match samples and mock-up work approved by the Architect and Owner.
- i. At completion, touch up and restore finish where damaged and leave in good condition.
- j. Should any coat of paint be adjudged unsatisfactory by the Architect, it shall be sandpapered or removed, and additional coats applied as necessary until a satisfactory finish is achieved.

3.6 CLEANING:

- a. All cloths and cotton waste that might constitute a fire hazard shall be placed in metal containers or destroyed at the end of each working day.
- b. At the completion of this work, all staging, scaffolding, containers, debris, etc., shall be removed from the premises.
- c. Painted surfaces shall be left in a clean condition. Remove paint spots, oil or stains from adjacent surfaces.
- d. Unstick all doors and repair any damaged areas of paint.

END OF SECTION

SECTION 10 14 00
SIGNAGE

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

A. Work Included in This Section:

- 1. Interior and exterior signage as shown and specified including all supplementary materials and installation accessories required for a complete and proper installation.
- 2. Signage schedule follows this Section.

1.3 SUBMITTALS:

A. Shop Drawings:

- 1. Show location, arrangement, dimensions, materials, finishes, connections, anchorage, and relation to adjacent work.

B. Manufacturer's Data:

- 1. Submit (in duplicate) manufacturer's printed specifications and installation instructions for work of this Section.

C. Samples:

- 1. Submit a sample of each specified type of sign.

D. Schedule of Individual Signs:

- 1. Prior to fabrication of any signage, submit to the Architect a schedule of signs, both interior and exterior, showing details of each sign and copy to be included on each sign. Do not begin fabrication of any signage prior to written approval by the Architect of this Schedule.

1.4 AMERICANS WITH DISABILITIES ACT:

- A. All signage on the project that falls under the jurisdiction of the Americans with Disabilities Act (ADA) shall be provided as required to comply with all applicable requirements of ADA. It shall be the responsibility of the Contractor and the signage manufacturer to ensure that all signage complies with ADA.

PART 2: PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS:

- A. Subject to compliance with the Drawings and Specifications, provide signage by one of the following, or equal approved in writing by the Architect.

ASO/ Mohawk
ASI Sign Systems
Innerface Architectural Signage
Gemini

2.2 INTERIOR SIGNS:

- A. Shall be manufactured from 1/16 in. clear matte acrylic that is sub-surface printed with a background color and laminated to a 1/16 in. opaque white or black acrylic base and has 1/16 in. raised acrylic letters. Provide window slot were required.
- B. All signage shall comply with the ICC/ANSI A117.1-2003 and N.C. Building Code. All signage must have the written information under the pictograms to comply with the ICC/ANSI A117.1-2003 and N.C. Building Code.
- C. See Signage schedule for size, type of signs and copy.

2.3 EXTERIOR BUILDING SIGNS:

- A. Cut Aluminum Letters: Flush Wall Mounted cut natural satin aluminum letters thick, as shown on the drawings. Flush mounting studs are set in adhesive cement with no space between letter and mounting surface.”

PART 3: EXECUTION

3.1 INSTALLATION:

- A. Install in accordance with the Drawings, these Specifications, approved Shop Drawings, manufacturer's printed instructions and ANSI requirements.
- B. Work shall be level, plumb and in true plane. Work shall be secure and rigid.
- C. Installation accessories shall be furnished by the signage manufacturer. Do not use installation materials from any other source.
- D. All interior signs are to be installed using black styrene, or equal, mounting plates attached to the substrate with screws, then the sign mounted with foam tape to the smooth surface of the mounting plate.

3.2 GUARANTEE:

- A. Any signs that do not remain securely bonded to the substrate or otherwise properly installed for a period of 1 year after acceptance of the Project shall be removed and properly reinstalled at no additional cost to the Owner.

END OF SECTION

SECTION 10 52 20
FIRE EXTINGUISHERS

PART 1: GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SCOPE:

a. Work Included in this Section:

1. Fire extinguishers and cabinets as shown and specified including all supplementary materials and installation accessories required for a complete and proper installation.
2. Furnish and install ten (10) additional 10 lb. UL Rating 4A-60B:C Factory Mutual approved, fire extinguishers and brackets and all supplementary materials, to be mounted per the Owner's direction.

1.3 SUBMITTALS:

- a. Shop Drawings: Indicate location, arrangement, dimensions, mounting heights, anchorage, materials, finishes, hardware, and relation to adjacent work.
- b. Manufacturer's Data: Submit manufacturer's technical data giving materials, thickness of parts, function, dimensions, and installation instructions.

1.4 PROTECTION:

- a. Protect materials and equipment from physical damage until final acceptance.

PART 2: PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS: Subject to compliance with the Drawings and Specifications, provide product by one of the following, or equal approved in writing by the Architect:

J. L. Industries Inc.
Larsen's Mfg. Co.
Potter-Roemer Inc.

2.2 MATERIALS:

a. Fire Extinguishers:

1. Larsen's MP10 Series Multi-Purpose Dry Chemical, or equal approved in writing by the Architect, 10 lb. capacity, 5"-cylinder diameter, 20" height, 7-3/4" overall width, UL Rating 4A-60B:C, Factory Mutual approved.
2. Larsen's WC-6L, Wet Chemical (for class K fires), or equal approved in writing by the Architect, 6-liter capacity 7" cylinder diameter, 25" height, 9" overall width, UL Rating 2A:1B:C: K, Factory Mutual approved.

- b. Fire Extinguisher Wall Brackets:
 - 1. Larsen's 846 Bracket, or equal approved in writing by the Architect, constructed of heavy gauge steel with white baked enamel finish.
 - 2. Bracket shall be sized to accommodate the specified fire extinguishers.

PART 3: EXECUTION

3.1 INSTALLATION:

- a. See Drawings for locations and wall construction to receive units.
- b. Coordinate cabinet installation with the work of other related Sections. Install in accordance with manufacturer's written instructions.
- c. Provide all accessory materials required for a complete and proper installation.
- d. Unless shown otherwise on the Drawings, center of cabinets to be mounted 48" above floor.

END OF SECTION

SECTION 13 12 30
PRE-ENGINEERED METAL BUILDING

1. GENERAL

1.1 Scope:

- a. These specifications delineate the design criteria, material quality, and fabrication processes required for the pre-engineered metal building.
- b. These specifications are intended for use as an outline of the performance requirements for the various materials used within the metal building systems.
- c. This specification utilizes standards, specifications and/or interpretations and recommendations of professionally recognized groups and agencies, such as MBMA, AISC, AISI, AWS, ASTM, etc. and the North Carolina State Building Code (NCSBC) as the basis of the design, fabrication and quality criteria, standards, practices, methods, and tolerances. For convenience, certain provisions of a specification and/or recommendation of one of these groups or agencies (i.e. AISC, AISI, etc.) may be referenced, where appropriate, in these Specifications.

1.2 Work Included in this Section:

- a. Work of this Section shall include primary and secondary structural framing members, bracing, metal panels for roofing and siding, flashings, fasteners, sealants, accessories, louvers, gutters, downspouts, and all other component parts specified or shown or required for a complete building including anchor bolts and other embedded items.

1.3 Related Work Specified Elsewhere:

- a. Hollow metal doors and frames (Section 08 11 00).
- b. Door hardware (Section 08 71 00).
- c. Aluminum windows (Section 08 52 20).
- d. Concrete work (Section 03 30 00).
- e. Thermal insulation (Section 07 21 30).
- f. Aluminum storefront (Section 08 41 10).
- g. See other Sections of the Specifications for other work.

1.4 AISC Certification: The pre-engineered metal building manufacturer shall be American Institute of Steel Construction (AISC) certified in Category MB.

1.5 Drawings and Calculations:

- a. The metal building manufacturer shall submit shop drawings and calculations to the Architect/Engineer for review. The design construction shop drawings shall be signed and sealed by a registered professional engineer who is licensed in the State of North Carolina.
- b. The metal building manufacturer shall provide erection information and drawings as required to assemble all parts, components, and accessories. Drawings shall include anchor bolt setting plans, anchor bolt lengths, roof framing plan, wall framing elevations, cross sections, etc., and shall indicate piece marks of all major parts for easy field identification.
- c. The metal building manufacturer shall submit column reactions to the Architect/Engineer for use to verify the adequacy of the foundation design. Any

necessary adjustments to the foundation system to make it adequate are to be made by the Architect/Engineer.

- d. The metal building manufacturer shall submit anchor bolt lengths and details to the Architect/Engineer. The Architect/Engineer will determine if the anchor bolt length is sufficient to properly transfer the column loads within the foundation piers and footings.
- e. The metal building manufacturer shall furnish design calculations for the structural framing, column reactions, deflections, and covering panels of the metal building system. The design calculations shall be signed and sealed by a registered professional engineer who is licensed in the State of North Carolina. At the discretion of the metal building manufacturer, design calculations may be computer-generated or prepared manually and may also include test reports.

1.6 Building Nomenclature:

- a. The building "width" and "length" shall be measured from inside to inside of wall panels.
- b. The building's eave height shall be measured from top of finished floor to top of the eave strut. The top of the eave strut is the point of intersection between the inside surfaces of the wall and roof covering.
- c. The bay spacing shall be measured as follows:
 - 1. Interior bays from centerline to centerline of interior frames.
 - 2. End bays from inside of end wall sheets to centerline of first interior frame.

1.7 Building Description:

- a. Primary Frame Types: Rigid Frame Clear Span: Primary frame shall be a welded rigid frame design, clear span type, 2:12 roof slope, with single gable roof and pin base columns. Columns shall be tapered as shown on the Drawings. Girts shall be by-pass type.
- b. End Frame Types:
 - 1. Provide one of the following types unless a specific type is shown on the Drawings.
 - (a) Rigid end frame shall be non-expandable type. End frames shall be welded rigid frames of same type and design as primary frames in building. End posts shall be furnished to provide support for girts. End posts shall be either hot-rolled mill sections or welded-up "H" shaped straight sections. Girts shall be by-pass type.
 - (b) Rigid end frame shall be expandable type. End frames shall be welded rigid frames of same type and design as primary frames in building. End posts shall be furnished to provide support for girts. End posts shall be either hot-rolled mill sections or welded-up "H" shaped, straight sections. Girts shall be by-pass type.
 - (c) Vertical cross bracing shall be the metal building manufacturer's standard type for the specified building.

2. DESIGN

2.1 Acceptable Manufacturers: Subject to compliance with the Drawings and Specifications and approval by the Architect of the specified submittals, pre-engineered metal buildings by the following manufacturers will be acceptable for this Project. The Contractor's bid shall be based upon providing a pre-engineered metal building that complies with the Drawings and Specifications and manufactured by one of the listed manufacturers unless other manufacturers are approved by addendum issued by the Architect prior to the bid opening. No other manufacturers will be approved after the bid opening.

- a. American Buildings Co.
- b. Butler Mfg. Co.
- c. Ceco Building Systems
- d. Star Building Systems
- f. United Structures of America
- g. Varco-Pruden Buildings

2.2 General:

- a. All structural steel sections and welded plate members shall be designed in accordance with the applicable sections, relating to design requirements and allowable stresses, of the latest edition of the American Institute of Steel Construction (AISC) "Specification for the Design, Fabrication and Erection of the Structural Steel for Buildings."
- b. All light-gage, cold formed, structural members and covering shall be designed in accordance with the applicable sections, relating to design requirements and allowable stresses, of the latest edition of the American Iron and Steel Institute (AISI) "Specification for the Design of Cold Formed Steel Structural Members."
- c. The pre-engineered metal building shall be designed and fabricated in accordance with the North Carolina State Building Code (NCSBC).

2.3 Design Loads:

- a. Design load requirements shall be determined by the North Carolina State Building Code. Magnitude of design loads shall be as specified by the Contract Documents.
- b. Loads to be considered are defined as follows:
 - 1. Building shall be designed and constructed for loads shown on the Drawings and if not shown on the Drawings as required by the North Carolina State Building Code.
 - (a) Dead Load: The weight of the building system materials.
 - (b) Collateral Loads: The weight of additional permanent materials, other than the building system, such as sprinklers, mechanical and/or electrical systems, partitions, and ceilings (5 pounds per square foot).
 - (c) Roof Live Loads*: Loads that are produced 1) during maintenance by workers, equipment, and materials, and 2) during the life of the structure by movable objects. Live loads do not include snow, wind, seismic, or collateral loads.
 - (d) Roof Snow Loads*: The vertical load induced by the weight of snow, assumed to act on the horizontal projection of the roof of the

structure.

- (e) Wind Loads: The load caused by wind blowing from any horizontal direction.
- (f) Seismic Loads: The lateral load due to the action of an earthquake acting on the structure in any horizontal direction.

*Note: Building system shall be designed for the live load specified or the snow load specified, whichever produces the most unfavorable effect.

- c. Specified design loads shall be considered to act in various combinations to produce the most unfavorable effect on the building or structural member concerned. Unless otherwise specified, load combinations shall be those listed in the North Carolina State Building Code.

2.4 DESIGN CRITERIA:

- a. Wind exposure category C shall be used for application of wind loads on the primary and secondary framing. For application of wind loads on the primary framing, table 1205.6A (combined velocity pressure and gust response factor) and 1205.6C (pressure coefficients for average loads on main wind force resisting system) in the North Carolina State Building Code shall be used. The use of shape factors from NAVFAC DM-2 will not be allowed for determining wind loads on primary or secondary framing. For application of wind loads on secondary framing, tables 1205.6A (combined velocity pressure and gust response factor) and 1205.6D (pressure coefficients for components and cladding) in the North Carolina State Building Code shall be used.
- b. Pressure coefficients for wind application shall be selected with the assumption that any one door in any wall may be open during full wind load conditions.
- c. Roof purlin deflection shall be limited to L/180 under full live load. Wall girt deflections shall be limited to L/180 for full wind load.
- d. Structural deflections shall be evaluated under full wind load as defined by the North Carolina State Building Code. The use of 10-year mean recurrence wind pressures or the use of probability factors will not be allowed to reduce wind loads for deflection calculations.
- e. The panel diaphragm capacity of roof and wall panels shall not be utilized to resist lateral loads.
- f. The connections of the column bases to the foundation shall be considered as theoretical pins (incapable of transferring movement).
- g. The vertical cross bracing shall be provided as part of the design drawings and calculations. Vertical cross bracing shall not interfere with openings in the walls.

3. STRUCTURAL FRAMING

3.1 General:

- a. All framing members shall be shop-fabricated for bolted field assembly unless otherwise noted on erection drawings.
- b. All framing members shall be cleaned to remove loose rust and mill scale, and given one shop coat of red oxide, air drying, alkyd primer. The cleaning process shall meet or exceed Steel Structures Paint Council Specification SSPC-SP2 for Hand

Tool Cleaning. Primer shall be formulated to equal or exceed performance, under laboratory conditions, requirements of US Federal Specification TTP-636. The primer coat thickness shall be a minimum of one mil.

- c. At the metal building manufacturer's option, secondary structural framing may be cold formed using pre-painted coil stock which eliminates the need for a shop coat of primer. Base metal shall be thoroughly cleaned then treated with iron phosphate solution to enhance paint adherence before coil is coated with a red oxide polyester paint. Paint dry film thickness shall be 0.5 mil on both sides.

3.2 Primary Members:

- a. Primary structural framing shall refer to the primary frames (transverse rigid frames, columns, expandable and non-expandable end frames (rafters/corner posts/end posts), wind/seismic bracing.
 - 1. Members fabricated from plate, plate coils, strip mill plate or flat bar stock shall have flanges and webs joined on one side of the web by a continuous welding process. All material shall have a minimum yield strength of 50,000 psi. Material will conform to physical specifications of the following ASTM specifications: plate (ASTM A-572, Gr. 50); plate coils and strip mill plate (ASTM A-570, Gr. 50); and flat bar (ASTM A-36, Modified 50).
 - 2. Members fabricated from W shapes (hot-rolled structural sections) will conform to the physical specifications of ASTM A-36 except that steel shall have a minimum yield strength of 42,000 psi.
 - 3. Members fabricated from other hot-rolled structural sections (S shapes/American Standard channels/angles/rods for anchor bolts/all other miscellaneous structural shapes) shall have a minimum yield strength of 36,000 psi and will conform to the physical specifications ASTM A-36.
 - 4. Rods used for bracing will conform to the physical specifications of ASTM A-36 except that steel shall have a minimum yield strength of 50,000 psi.
 - 5. Cables used for bracing shall be zinc coated steel wire (7 strands), extra high strength grade.
 - 6. Members fabricated by cold forming process shall have a minimum yield strength of 55,000 psi and will conform to the physical specifications of ASTM A-570

3.3 Secondary Members:

- a. Secondary structural framing shall refer to purlins, girts, eave struts, base members, flange bracing, gable angles, clips and other miscellaneous structural parts.
 - 1. Purlins, girts, eave struts, base members and gable angles shall be cold formed from steel which has a minimum yield strength of 55,000 psi and will conform to the physical specifications of ASTM A-570.
 - (a) Purlins are roll formed "Z" sections. Each flange of these "Z"s shall have a stiffening lip formed at 50° to the flange.
 - (b) Girts are either roll formed "Z" sections, or cold formed "C" sections. Each flange of these members shall have a stiffening lip formed at 50° to the flange on "Z"s and at 90° on "C"s.

(c) Eave struts are roll formed "C" sections, or brake formed "C" sections. Flanges are formed at angles other than 90° to the web to accommodate various roof slopes. Each flange has a stiffening lip formed at 90° to the flange.

2. All other miscellaneous secondary members shall have a minimum yield strength of 36,000 psi.

3.4 Connections:

a. All field connections shall be bolted, unless otherwise shown on the Drawings.

1. All primary bolted connections, as shown in the drawings, shall be furnished with high strength bolts conforming to the physical specifications of ASTM A-325. All high strength bolts and nuts shall be plated and coated with a zinc chromate dip for extended life and for easy identification.

2. All secondary bolted connections, as shown on drawings, will be furnished with machine bolts conforming to the physical specifications of ASTM A-307 unless ASTM A-325 bolts are required by design. Bolts and nuts for secondary connections shall also be plated for extended life.

b. All shop connections shall be welded using either submerged arc or gas metal arc or shielded arc process, and welding shall be in accordance with the applicable sections, relating to design requirements and allowable stresses, of the latest editions of the American Welding Society "Structural Welding Code".

4. ROOF AND WALL PANELS:

4.1 General:

a. Standard covering for roofs or walls shall be a ribbed-type panel having 36-inch net coverage. These panels shall be a minimum of 26 gage, Galvalume steel, with a color coating as specified hereinafter.

b. All panels shall be precision roll-formed to the required configuration specified hereinafter.

4.2 Panel Materials:

a. Galvalume is a specialty steel sheet product with a patented coating of corrosion-resistant, aluminum-zinc alloy applied by a continuous hot dipping process. Typical coating weight is 0.5 oz. per square foot of coated sheet (both sides) -- equivalent to approximately 0.8 mil thickness on each side. Galvalume steel panels shall have a minimum yield strength of 50,000 psi unless otherwise specified. Galvalume steel shall conform to ASTM specification A-792.

b. Roof and wall panels shall have the exterior side finished with a silicone polyester coating system, or equal paint system standard with the building manufacturer as required to provide the specified paint warranty, applied over the Galvalume substrate. Surfaces shall be chemically cleaned, pre-treated, primed, and coated, then oven-baked to cure. The total coating system shall have a one mil dry film thickness. Gloss rating for exterior coating shall be 20 to 35. The interior side of these panels shall be protected by a wash coat of primer applied at 0.5 mil dry film thickness. Panels shall be coated prior to roll forming.

4.3 Panel Configurations and Finishes:

- a. Ribbed Wall Panels shall be as follows:
 - 1. MVW (Versatile Panel) shall have 1 3/16" deep major ribs which taper in width from 2 inches to 3 7/8" and are spaced 12" on center. Between each major rib are two minor stiffening ribs. The "leading edge" rib has a bearing leg. Each panel shall provide 3 feet of lateral coverage. Panel finish shall be as specified hereinbefore. Color will be selected by the Architect from the metal building manufacturer's standard colors.
- b. Ribbed roof panels shall be as follows:
 - 1. MVR (Versatile Panel) shall have 1-3/16" deep major ribs which taper in width from 2" to 3-7/8" and are spaced 12" on center. Between each major rib are two minor stiffening ribs. Each panel shall provide 3 feet of lateral coverage. Panel finish shall be Galvalume with factory paint finish in any one of the metal building manufacturer's standard panel colors. Color will be selected by the Architect. Panel shall have a preformed anti-capillary groove at side laps.

4.4 Flashing, Trim & Closures:

- a. Flashing and/or trim shall be furnished at eaves, rakes, corners, base, framed openings, and wherever necessary to seal against the weather and provide a watertight and finished appearance. Color shall be selected from the metal building manufacturer's standard panel colors. Profiles and dimensions of all flashing/trim will be the metal building manufacturer's standards.
- b. Eave gutters and downspouts shall be provided. Gutters are to be box-shaped with face profile shaped to match rake trim. Downspouts are rectangular-shaped (2 7/8" x 4 1/4" min. size) and shall have a 45-degree elbow at the bottom. Standard colors for eave gutters are "Glacier White" or "Burnished Slate" although other colors are available by special request. Color for downspouts shall be selected from the metal building manufacturer's standard panel colors.
- c. Color coated, Galvalume for flashing, trim, metal closures, gutter and downspouts, and other miscellaneous uses shall be 26 gage thickness of the same specification as the roof and wall covering material.
- d. Material used for Base Angle/Trim members shall be color coated, 18 gage, galvanized steel, 36,000 yield strength. Color shall be selected by the Architect from the metal building manufacturer's standard colors.
- e. Preformed, closed cell, polyethylene closure strips matching the profile of the panel shall be installed along the eave and at other locations to provide weather tightness.

4.5 FASTENERS:

- a. Standard wall fasteners shall be No. 12, self-drilling carbon steel screws with an integral, hex-washer head, and without a sealing washer. The minimum length of fasteners shall be 1 1/4 inches for "panel to structural" application and 3/4 inches for "stitch" screws.
 - 1. Optional wall fasteners shall be No. 14 self-tapping, carbon steel screws with an integral, hex-washer head, and without a sealing washer. The minimum length of fasteners shall be 1 inch for both "panel to structural" and "stitch" applications.

2. Both "standard" and "optional" wall fasteners shall have a corrosion-resistant coating applied for long term protection. Fasteners shall be painted to match the panel and/or trim color. Sealing washers on either "standard" or "optional" wall fasteners are available upon request.
- b. Standard roof fasteners shall be No. 12 self-drilling carbon steel screws with an "extended life" hexagon head that is compatible with Galvalume or color coated panels. A sealing washer shall be provided. The minimum length of fasteners shall be 1 1/4 inches for "panel to structural" application and 3/4 inches for "stitch" screws.
 1. Optional roof fasteners shall be No. 12 self-tapping, carbon steel screws with an "extended life" hexagon head that is compatible with Galvalume or color coated panels. A sealing washer shall be provided. The minimum length of fasteners shall be 1 inch for both "panel to structural" and "stitch" applications.
 2. "Extended life" heads will be either a zinc/aluminum/manganese alloy casting or a 302 stainless steel cap over the carbon steel head, at the metal building manufacturer's option. When used with color coated material, fasteners shall be painted to match panel and/or trim color.

4.6 Sealants:

- a. Sealants for side laps, end laps, accessories, etc. shall be a preformed, butyl rubber-based compound. The material shall be non-hardening, non-shrinking and non-corrosive and shall have excellent adhesion to metals, painted surfaces and plastics at temperatures from -30° F to 160° F. These sealants shall be in tape mastic form, of shape and size recommended by the metal building manufacturer for various applications and shall have paper backing for easy handling.
- b. Tube sealants shall be used to supplement tape mastic sealants and shall be applied in locations indicated by erection instructions. Tube sealant shall be a synthetic, elastomer-based material which becomes tack-free in less than 2 hours at 75° F but retains flexibility.

4.7 Installation of Wall and Roof Panels:

- a. Wall panels shall be continuous from base to eave.
- b. Roof panels shall be continuous from eave to ridge.
- c. All ribbed roof panel side laps shall be sealed with a field applied, continuous ribbon of tape mastic sealant. Eaves shall also be sealed.
- d. Fastener population and pattern for both wall and roof panels shall be as shown in erection details.

4.8 Underwriters Laboratories Uplift Ratings:

- a. Provide roof fastener and installation pattern required to provide UL90 wind uplift rating.

5. ACCESSORY MATERIALS AND PRODUCTS

5.1 Items Specified Elsewhere:

- a. Personnel doors and frames are specified in Section 08 11 00.
- b. Door hardware is specified in Section 08 71 00.
- c. Aluminum windows are specified in Section 08 52 20.
- d. Sheet metal trim shall be furnished with all doors to flash around door frame and provide a finished appearance.

5.2 Wall Louvers:

- a. Wall louvers shall be operable type, with pull-chain operator, weather stripped blades, and removable insect screens. Mounting fins for connecting to structural sub-framing shall be provided.
- b. Unless shown otherwise on the Drawings, single louver size shall be 4040. Double or multiple louver banks shall be formed by joining side fins together and adding a reinforcing mullion.
- c. Louver shall be made of galvanized steel. Frame shall be 18 gage (min.) and blades shall be 20 gage (min.) material. Frame joints shall be welded. Blades shall be overlapping type, providing maximum weather tightness when closed and allowing free air flow when open.
- d. Screens shall be 18/16 aluminum mesh in an extruded or formed aluminum frame. Screens shall be exterior mounted. Louvers shall be "Premium" quality. Finish coating of polyester paint applied over galvanized steel; color selected by Architect from the manufacturer's standards.
- e. Structural sub-framing, consisting of angle or channel sections (hot-rolled or cold formed), shall be furnished with each louver.
- f. Sheet metal trim shall be furnished to flash around louver and provide a finished and watertight appearance.

5.3 Framed Openings:

- a. Framed openings shall be furnished by the metal building manufacturer to accommodate doors and windows. Framed openings shall consist of structural framing to provide a large opening in a wall, along with necessary trim to flash around this opening and provide a finished and watertight appearance.
- b. Size of opening shall be determined by the size of door specified. Structural framing (jamb and header) shall consist of cold-formed, open "C" sections (6 3/4", 8 3/4" or 10 1/4" deep) or hot-rolled channel sections, depending on structural requirements. Necessary clips and fasteners, for making connections for all members, shall be provided. Trim around opening shall be the metal building manufacturer's standard to accommodate wall panel configuration.
- c. Color-coated trim to entirely cover shop-primed structural jamb and header shall be provided where exposed to view.

5.4 Roof Curbs (for equipment):

- a. Roof curbs (if any) shall be a one-piece unit consisting of a tip box, or shell, and bottom skirt, or flange. Units shall be of welded construction, and the top of shell shall provide a level surface for supporting roof mounted equipment.
- b. Each unit shall be individually sized and designed to meet specific job requirements. The roof slope must be specified so that curb base will be fabricated to match. Curb shells can be insulated if specified.
- c. Roof curb shall be made using minimum 18 gage, G-90 galvanized steel for shell and flange and shall have internal angle reinforcing as required. Painted (white) units, to match color coated roof panels, are available.
- d. Roof curbs are supported by structural sub-framing and are installed with flange under the roof panels. Roof panels are fastened to the flange with sealant and screws to provide a weathertight assembly.

5.5 Pipe Flashing:

- a. Pipe flashing units shall be a one-piece construction that accommodates pipes made of steel, copper, cast iron, PVC, and sheet metal.
- b. Unit may be specified in one of three sizes, as follows:
 - #3 size for 1/4" to 4" outside pipe diameter
 - #5 size for 4" to 7" outside pipe diameter
 - #8 size for 7" to 13" outside pipe diameter
- c. Units shall be made of a flexible rubber compound (EPDM or equal) formulated to provide maximum weathertightness. Unit shall be pre-molded to form a pipe collar. Bonded to the base of collar shall be a 1/32" ± thick, moldable aluminum ring which bends with ease to conform to any panel configuration.
- d. Pipe flashing units shall be furnished with necessary sealant and screw fasteners to attach unit to roof panels and provide a weathertight assembly.
- e. These units are not to be used as flashing for any hot flue applications where temperatures exceed 150° F.

6. BUILDING FOUNDATION:

6.1 Anchor Bolts:

- a. Anchor bolts shall be furnished by the metal building manufacturer and shall be set in strict accordance with the metal building manufacturer's anchor bolt drawings. Anchor bolts shall be of length and strength to properly resist the governing reactions induced by the design loads and shall be of the diameter shown on the metal building manufacturer's anchor bolt drawings. All anchor bolts shall be unpainted to bond with the concrete in which they are set.

6.2 Foundations:

- a. The building foundation shall be as shown on the Structural Drawings and specified in the applicable sections of the Specifications.

7. BUILDING ERECTION:

- a. The erection of the pre-engineered metal building shall be in accordance with the Contract Documents and Specifications, applicable erection drawings, the Construction Techniques Manual, and other erection information furnished by the metal building manufacturer.
- b. Erection shall be performed by a qualified erector using proper tools and equipment. It shall be the responsibility of the erector to comply with all applicable legal and safety requirements. It shall further be the responsibility of the erector to determine and provide any and all temporary bracing, bridging, blocking, shoring, and/or securing of components, etc. as required for stability during the entire erection process.
- c. Erector shall not make any field modifications to any structural member except as authorized and specified by the metal building manufacturer.

8. WARRANTIES:

a. Material and Workmanship Warranties:

1. The metal building manufacturer shall furnish a three (3) year limited warranty against failures caused by faulty or substandard materials.
2. The warranty shall also include a one (1) year workmanship guarantee against failures caused by faulty erection.

b. Paint Warranty:

1. Color coated wall panels, roof panels, gutters and downspouts, wall louvers, soffit liner panels and other flashing and trim exposed to view shall be warranted, within limits set by the warranty, for a period of twenty (20) years against chalk, fade, crack, check, blister, peel, or other failure of the paint coating.

c. Roofing Warranty:

1. The roofing system shall have a ten-year manufacturer's warranty against leakage.
2. The General Contractor shall provide a two-year independent roofing warranty against leakage.

- d. All warranties are subject to certain limits and conditions. Specimen copies of all warranties shall be submitted to the Architect prior to beginning work of this Section.

END OF SECTION

