PROJECT MANUAL

AND

SPECIFICATIONS

FOR THE

OCONEE COUNTY
SENIOR CENTER ADDITION
ITB# 21-04-016

Watkinsville, Georgia

April 07, 2021

Prepared by

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ARCHITECTS, INC.

137 East Washington Street Post Office Box 1004
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Oconee County Board of Commissioners
23 N Main Street
Watkinsville, Georgia 30677

Invitation to Bid
ITB# 21-04-016
Oconee County Senior Center Addition
Issue Date: April 7, 2021

The Oconee County Board of Commissioners is soliciting bids from qualified contractors interested in providing the construction and site work of an addition to the Oconee County Senior Center located at 3500B Hog Mountain Road Watkinsville, Georgia 30677. This is a Section 3 contract opportunity. Please see the ITB documents for full Scope of Work.

A mandatory pre-bid meeting is scheduled for April 15, 2021 at 2:00 PM on site at the Oconee County Senior Center. Attendance is required to qualify as a respondent.

Sealed bids will be accepted by the Oconee County Finance Department located at the Oconee County Courthouse, 23 N Main Street Suite 203 Watkinsville, Georgia 30677 until 10:00 AM May 11, 2021. At that time and date, sealed bids will be publicly opened and the names and amounts read aloud in the Commissioner's Chambers located at 23 N Main Street Suite 205 Watkinsville, Georgia 30677. Bids received after this time will not be accepted.

All submissions must be marked on the outside 'Oconee County Senior Center Addition ITB# 21-04-016' and must include your company's name and address.

Pursuant to Georgia law, no bids will be considered without an executed E-Verify affidavit. All bidders must submit A305 qualifications with their bid submission. The successful bidder will be required to pay sales and use tax on materials purchased or used on this project. All equal products will be acceptable for substitutions without prior approval. However, the burden of proof will be on the respondent. Proof of General Liability Insurance and Workman's Compensation Insurance will be required with the Oconee County Board of Commissioners listed as an additional insured. Progress payments and retainage for construction shall be submitted by the owner monthly and payment terms are net thirty (30) days. This Public Works construction project is estimated to begin in July 2021.

Questions regarding this ITB should be emailed to info@carterwatkins.com and shall be received no later than April 22, 2021 at 2:00 PM.

Bid documents can be obtained by sending an email request to info@carterwatkins.com. All documents are also posted on the Oconee County website for review only. No copies will be printed or mailed. Bidders are responsible for accessing PDF files online and having prints made. Additionally, all Bidder's are responsible for obtaining a copy of any addenda issued on the Architect's FTP website or the Oconee County website.

This project is funded, in part, by a Community Development Block Grant which requires Wage Rates and Salary Interviews in addition to Contractors being in good standing with the Georgia Department of Community Affairs.

A bid bond* in the amount of five percent (5%) of the total bid amount and a Consent of Surety letter must be enclosed in bid submissions at the time of the bid opening. The Consent of Surety shall state that upon award of agreement, a Payment and Performance bond of one hundred percent (100%) of the total agreement amount can be furnished. *Surety companies executing bonds must be authorized to transact business in the State of Georgia.

The OCBOC reserves the right to accept or reject all bids or any bid that is non-responsive or non-responsible, to waive technicalities, and to issue change orders altering the original scope of work to address changes or unforeseen conditions necessary for the project completion.

By the Oconee County Board of Commissioners
The Honorable John Daniell

ITB# 21-04-016
Oconee County Senior Center Addition

BIDDER'S CHECKLIST

Company Name _____

Please indicate you have completed the following documentation and submit them in the following order.

ITEM DESCRIPTION

Check

- ☐ Bidder's Checklist
- ☐ Bidder's Information Form
- ☐ Experience Statement
- ☐ Bid Submittal Form
- ☐ Subcontractor List
- ☐ Addenda Acknowledgement Form
- ☐ Partnership Affidavit (if applicable)
- ☐ Corporate Affidavit (if applicable)
- ☐ Individual Affidavit (if applicable)
- ☐ Certificate of Non-Collusion
- ☐ Georgia's Security & Immigration Compliance Act Affidavit (E-
- ☐ Verify) S.A.V.E. Affidavit
- ☐ Drug-Free Workplace Certificate
- ☐ W-9

_____ _____
Authorized Signature *Date*

_____
Printed Name

_____
Title

_____
Email

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS PART OF YOUR BID

ITB# 21-04-016
Oconee County Senior Center Addition

BIDDER'S INFORMATION FORM

LEGAL BUSINESS NAME _____ **TIN #** _____

INDICATE LEGAL FORM OF BUSINESS:

Corporation _____ Partnership _____ Individual _____ Other (specify) _____

ADDRESS_____
Street **City** **State** **Zip Code**

AUTHORIZED SIGNER _____
Name **Title**

PRIMARY CONTACT _____
Name **Phone** **Email**

SECONDARY CONTACT _____
Name **Phone** **Email**

COMPANY WEBSITE _____

BILLING ADDRESS (IF DIFFERENT THAN ABOVE)

_____
Street **City** **State** **Zip Code**

DO YOU HAVE AN OCCUPATIONAL TAX LICENSE IN THE STATE OF GEORGIA? Yes _____ No _____

LICENSED BY CITY/STATE? _____ OCCUPATIONAL TAX LICENSE # _____

HAS YOUR COMPANY EVER BEEN DISBARRED FROM DOING BUSINESS WITH ANY FEDERAL, STATE, OR LOCAL ENTITY?

YES _____ NO _____ IF YES, PLEASE STATE THE AGENCY NAME, DATES, AND REASON FOR DEBARMENT.

_____

_____

_____

THIS PAGE MUST BE COMPLETED AND SUBMITTED WITH BID

ITB# 21-04-016
Oconee County Senior Center Addition

Bidder Experience Statement

All questions must be answered and the date given must be clear and comprehensive. This instrument must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information he desires. Attach all additional sheets to these Contract Documents.

1. Name of Bidder _____
2. Permanent Office Address _____
   Street *City* *State* *Zip Code*
3. When Organized _____
4. If a corporation, where incorporated? _____
5. Federal ID Number _____
6. How many years have you been engaged in business under your present firm or trade name? _____
7. General character of work performed by your company _____
   _____
   _____
8. Have you ever failed to complete any work awarded to you? _____ If so, where and why?_____
   _____
   _____
   _____
9. List any project of similar scope and complexity that your organization has completed or has in progress as of the date of receiving bids. (Please include additional pages, as needed, and attach hereto.)

Project Name _____

Owner _____
Name

_____
Contact *Phone* *Email*

Project Engineer Firm_____
Name

_____
Contact *Phone* *Email*

Contract Amount $_____ Date Completed _____ % Complete _____

Project Name _____

Owner _____
Name

_____
Contact *Phone* *Email*

Project Engineer Firm_____
Name

_____
Contact *Phone* *Email*

Contract Amount $_____ Date Completed _____ % Complete _____

Project Name _____

Owner _____
Name

_____
Contact *Phone* *Email*

Project Engineer Firm_____
Name

_____
Contact *Phone* *Email*

Contract Amount $_____ Date Completed _____ % Complete _____

Project Name _____

Owner _____
Name

_____
Contact *Phone* *Email*

Project Engineer Firm_____
Name

_____
Contact *Phone* *Email*

Contract Amount $_____ Date Completed _____ % Complete _____

_____ _____

Firm/Company - Printed Contractor/Respondent – Printed

_____ _____

Email Title

_____ _____

Phone Signature Date

ITB# 21-04-016

Oconee County Senior Center Addition

BID SUBMITTAL FORM

Project Location: Watkinsville, GA

The undersigned CONTRACTOR, having examined these documents, and having full knowledge of the condition under which the work described herein must be performed, hereby proposes that she/he will fulfill the obligations contain herein in accordance with all instructions, terms, conditions, and specifications set forth; and that she/he will furnish all required products/services and pay all incidental costs in strict conformity with these documents for the stated prices as payment in full.

Base Bid $ _____

Included and attached is a Bid Bond in the amount of not less than 5% of the base bid. Also included in the amount above is the sum of $_____for providing a Performance and Payment Bond for 100% of the total base bid. Same shall be provided by a surety corporation licensed in the State of Georgia and a certified Power of attorney shall be attached

Alternates (if any) Mark all figures entered clearly with a plus (+) indicating an add to the base bid or a minus (-) indicating a deduct from the base bid.

Alternate 1	$ _____
Alternate 2:	$ _____
Alternate 3:	$ _____
Alternate 4:	$ _____
Alternate 5:	$ _____

Submitting Firm:

Address: _____

Name and Title of Authorized Representative (print/type):_____

Authorized Signature: _____

(Signature-When signed, this bid is legal and binding to the Oconee County Board of Commissioners and acknowledges that ALL Specifications, Terms and Conditions and/or instructions to Bidders have been read and understood).

Date: _____Email:_____

FIRM PRICING - Prices submitted on this bid form are firm through (minimum 90 days).

ITB# 21-04-016
Oconee County Senior Center Addition

SUBCONTRACTOR LIST

LIST BELOW ALL SUBCONTRACTORS PROPOSED BY THE RESPONDENT AT THE TIME OF BID SUBMITTAL.

NAME		**PHONE**		**FEI/SSN**	
ADDRESS					
TYPE OF WORK		**% OF PROJECT**		**AMOUNT**	

NAME		**PHONE**		**FEI/SSN**	
ADDRESS					
TYPE OF WORK		**% OF PROJECT**		**AMOUNT**	

NAME		**PHONE**		**FEI/SSN**	
ADDRESS					
TYPE OF WORK		**% OF PROJECT**		**AMOUNT**	

NAME		**PHONE**		**FEI/SSN**	
ADDRESS					
TYPE OF WORK		**% OF PROJECT**		**AMOUNT**	

NAME		**PHONE**		**FEI/SSN**	
ADDRESS					
TYPE OF WORK		**% OF PROJECT**		**AMOUNT**	

NAME		**PHONE**		**FEI/SSN**	
ADDRESS					
TYPE OF WORK		**% OF PROJECT**		**AMOUNT**	

NAME		**PHONE**		**FEI/SSN**	
ADDRESS					
TYPE OF WORK		**% OF PROJECT**		**AMOUNT**	

NAME		**PHONE**		**FEI/SSN**	
ADDRESS					
TYPE OF WORK		**% OF PROJECT**		**AMOUNT**	

(USE ADDITIONAL PAGES IF NEEDED. ATTACH HERETO)

ITB# 21-04-016
Oconee County Senior Center Addition

ADDENDA ACKNOWLEDGEMENT

The Respondent has examined and carefully studied the Invitation to Bid and the following Addenda, receipt of all of which is herby acknowledged:

Addendum Number _____ Date _____

Addendum Number _____ Date _____

Addendum Number _____ Date _____

Addendum Number _____ Date _____

_____ _____
Authorized Signature *Date*

_____
Printed Name

Respondent must acknowledge any issued addenda. Bids which fail to acknowledge the Respondent's receipt of any addenda may result in the rejection of the bid if the addendum contains information that substantively changes the Owner's requirements.

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS PART OF YOUR BID

ITB# 21-04-016
Oconee County Senior Center Addition

Partnership Certificate

STATE OF }
} SS
COUNTY OF }

On this day of _____, 20____ before me personally appeared _____ known to me to be the person who executed the above instrument, who, being by first duly sworn, did depose and say the he is a general partner in the firm of _____ and that firm consists of himself and _____ and that he executed the foregoing instrument on behalf of said firm for the uses and purposes stated therein, and that no one except the above named members of the firm have any financial interest whatsoever in said proposed contract.

_____ PARTNER

_____ PARTNER

_____ PARTNER

_____ PARTNER

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

_____ NOTARY PUBLIC

My Commission Expires: (SEAL)

_____ (Date)

NOTE: if only one partner signs, a power of attorney executed by all other partners authorizing him to act in the name of the Company must be attached, otherwise, all partners must sign.

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Corporate Certificate

I, _____ , certify that I am the Secretary of the Corporation named as CONTRACTOR in the foregoing bid; that _____, who signed said bid on behalf on the CONTRACTOR was then _____ of said Corporation; that said authority was duly signed for and in behalf of said Corporation by authority of its Board of Directors, and is within the scope of its corporate powers; that said Corporation is organized under the laws of the State of _____.

This _____ day of _____, 20____.

_____

CORPORATE SECRETARY

(SEAL)

ITB# 21-04-016
Oconee County Senior Center Addition

Individual Certificate

STATE OF }
} SS
COUNTY OF }

On this _____ day of _____, 20____, before me personally came and appeared _____ to me known, and known to me to the person described in and who executed the foregoing instrument and acknowledged that executed the same.

_____
NOTARY PUBLIC

(SEAL)

My Commission Expires:

_____ (Date)

ITB# 21-04-016
Oconee County Senior Center Addition

CERTIFICATE OF NON-COLLUSION

OCONEE COUNTY SENIOR CENTER ADDITION
ITB# 21-04-016
STATE OF GEORGIA
OCONEE COUNTY BOARD OF COMMISSIONERS

Being first duly sworn, deposes and says that he is

(sole owner, partner, president, secretary, etc.)

the party making the forgoing Proposal or Bid; that such ITB is genuine and not collusive or sham; that said Respondent has not colluded, conspired, connived, or agreed, directly or indirectly, with any Respondent or person, to put in a sham Response, or that such other person shall refrain from Responding, and has not in any manner, directly or indirectly sought by agreement or collusion, or communication or conference, with any person, to fix the Response price of affiant or any other Respondent, or to fix any overhead, profit or cost element of said Response Price, or of that of any other Respondent, or to secure any advantage against Oconee County, or any other person interested in the proposed Agreement; and all statements in said Proposal or Bid are true; and further, that such Respondent has not, directly or indirectly, submitted this Response, or the contents thereof, or divulged information or data relative thereto any association or to any member or agent thereof.

(Affiant)

Subscribed and Sworn to before me this _____ Day of _____, 20_____.

(Notary Public in and for)

(County)

My Commission expires _____, 20_____.

(SEAL)

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS PART OF YOUR BID

Contractor Affidavit under O.C.G.A. § 13-10-91(b)(l)

The undersigned contractor ("Contractor") executes this Affidavit to comply with O.C.G.A § 13-10-91 related to any contract to which Contractor is a party that is subject to O.C.G.A. § 13-10-91 and hereby verifies its compliance with O.C.G.A. § 13-10-91, attesting as follows:

a) The Contractor has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program;
b) The Contractor will continue to use the federal work authorization program throughout the contract period, including any renewal or extension thereof;
c) The Contractor will notify the public employer in the event the Contractor ceases to utilize the federal work authorization program during the contract period, including renewals or extensions thereof;
d) The Contractor understands that ceasing to utilize the federal work authorization program constitutes a material breach of Contract;
e) The Contractor will contract for the performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the Contractor with the information required by O.C.G.A. § 13-10-91(a), (b), and (c);
f) The Contractor acknowledges and agrees that this Affidavit shall be incorporated into any contract(s) subject to the provisions of O.C.G.A. § 13-10- 91 for the project listed below to which Contractor is a party after the date hereof without further action or consent by Contractor; and
g) Contractor acknowledges its responsibility to submit copies of any affidavits, drivers' licenses, and identification cards required pursuant to O.C.G.A. § 13-10-91 to the public employer within five business days of receipt.

_____ _____
Federal Work Authorization User Identification Number Date of Authorization

_____ _____
Name of Contractor Name of Project

_____
Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, _____, 20_____ in _____ (city), _____ (state).

_____
Signature of Authorized Officer or Agent

_____
Printed Name and Title of Authorized Officer or Agent

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

_____
NOTARY PUBLIC
My Commission Expires: _____

ITB# 21-04-016
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Subcontractor Affidavit under O.C.G.A. § 13-10-91(b)(3)

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with (name of contractor) on behalf of (name of public employer) has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the subcontractor with the information required by O.C.G.A. § 13-10-91(b). Additionally, the undersigned subcontractor will forward notice of the receipt of an affidavit from a sub-subcontractor to the contractor within five business days of receipt. If the undersigned subcontractor receives notice that a sub-subcontractor has received an affidavit from any other contracted sub-subcontractor, the undersigned subcontractor must forward, within five business days of receipt, a copy of the notice to the contractor. Subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

_____
Federal Work Authorization User Identification Number

_____
Date of Authorization

_____
Name of Subcontractor

_____
Name of Project

_____
Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, ___, 201__ in _____(city), _____(state).

_____
Signature of Authorized Officer or Agent

_____
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE _____ DAY OF _____,201__.

_____
NOTARY PUBLIC

My Commission Expires:

_____

Affidavit Verifying Status for County Public Benefit Application
(SAVE AFFIDAVIT)
O.C.G.A. § 50-36-1(e)(2)

By executing this affidavit under oath, as an applicant for a Business Occupation Tax Certificate, Alcohol License or <u>other</u> public benefit as referenced in O.C.G.A. § 50-36-1, from Oconee County, Georgia, the undersigned applicant verifies one of the following with respect to my application for a public benefit:

1) ____ I am a United States citizen.
2) ____ I am a legal permanent resident of the United States.
3) ____ I am a qualified alien or non-immigrant under the Federal Immigration and Nationality Act with an alien number issued by the Department of Homeland Security or other federal immigration agency.

My alien number issued by the Department of Homeland Security or other federal:
immigration agency is: _____
My card number is: _____

The undersigned applicant also hereby verifies that he or she is 18 years of age or older and has provided at least one secure and verifiable document, as required by O.C.G.A. § 50-36-1(e)(1), with this affidavit.

The secure and verifiable document provided with this affidavit can best be classified as:

_____.

In making the above representation under oath, I understand that any person who knowingly and willfully makes a false, fictitious, or fraudulent statement or representation in an affidavit shall be guilty of a violation of O.C.G.A. § 16-10-2, and face criminal penalties as allowed by such criminal statute.

Executed in _____(city), _____(state).

Signature of Applicant: _____

Date: _____

Printed Name: _____

Date of Birth: _____

Subscribed and Sworn to before me, this

_____ day of _____, 20____

_____

Notary Public

My Commission Expires: _____

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID

ITB# 21-04-016
Oconee County Senior Center Addition

Drug Free Workplace Certificate

By signature on this certificate, the contractor certifies that the provisions of O.C.G.A. Section 50-24-1 through 50-24-6 related to the "Drug-Free Workplace Act" has been complied with in full. The contractor further certifies that:

1. A drug-free workplace will be provided for the contractor's employees during the performance of the contract; and

2. Each contractor who hires a subcontractor to work in a drug-free workplace shall secure from that subcontractor the following written certification: "As part of the subcontracting agreement with (contractors name), (subcontractor's name) certifies to the contractor that a drug-free workplace will be provided for the subcontractor's employees during the performance of this contract pursuant to O.C.G.A. Section 50-24- 3(b) (7)."

By signature on this certificate, the contractor further certifies that it will not engage in the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana during the performance of this contract.

Contractor: _____

By: _____

Name (Printed): _____

Title: _____

Date: _____

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID

Form **W-9**
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▸ **Go to *www.irs.gov/FormW9* for instructions and the latest information.**

Give Form to the requester. Do not send to the IRS.

Print or type. See **Specific Instructions** on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▸ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▸

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any)

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN,* later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

			–			–				

or

Employer identification number

		–							

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	**Signature of U.S. person** ▸	**Date** ▸

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9.*

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),

2. Certify that you are not subject to backup withholding, or

3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and

4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting,* later, for further information.

Note: If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 24% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,

2. You do not certify your TIN when required (see the instructions for Part II for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code,* later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships,* earlier.

What is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code,* later, and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note: ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C corporation, or S corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2—The United States or any of its agencies or instrumentalities 3—

A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5—A corporation

6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8—A real estate investment trust

9—An entity registered at all times during the tax year under the Investment Company Act of 1940

10—A common trust fund operated by a bank under section 584(a) 11—

A financial institution

12—A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over $600 required to be reported and direct sales over $5,000[1]	Generally, exempt payees 1 through 5[2]
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

[1] See Form 1099-MISC, Miscellaneous Income, and its instructions.

[2] However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a) J—

A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note: You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note: See *What Name and Number To Give the Requester,* later, for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at *www.SSA.gov*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/Businesses* and clicking on Employer Identification Number (EIN) under Starting a Business. Go to *www.irs.gov/Forms* to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to *www.irs.gov/OrderForms* to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note: Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code,* earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account[1]
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor[2]
5. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee[1] The actual owner[1]
6. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
7. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	**Give name and EIN of:**
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity[4]
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

[4] List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships,* earlier.

***Note:** The grantor also must provide a Form W-9 to trustee of trust.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records From Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov.* You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at *spam@uce.gov* or report them at *www.ftc.gov/complaint.* You can contact the FTC at *www.ftc.gov/idtheft* or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see *www.IdentityTheft.gov* and Pub. 5027.

Visit *www.irs.gov/IdentityTheft* to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

AIA® Document A101™ – 2007

Standard Form of Agreement Between Owner and Contractor *where the basis of payment is a Stipulated Sum*

AGREEMENT made as of the First day of February in the year 2021.

BETWEEN the Owner:
(Name, legal status, address and other information)

Oconee County Board of Commissioners
23 N Main Street
Watkinsville, Georgia 30677

and the Contractor:

for the following Project:
(Name, location and detailed description)

OCONEE COUNTY SENIOR CENTER ADDITION

The Architect:
(Name, legal status, address and other information)

Carter Watkins Architects Associates Inc., Subchapter S Corporation
P.O. Box 1004
137 East Washington Street
Monroe, Georgia
Telephone Number: 770-267-7799
Fax Number: 77-267-1064

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

AIA Document A201™–2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

Init.
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User Notes: (3B9ADA18)

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ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.
(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

If, prior to the commencement of the Work, the Owner requires time to file mortgages and other security interests, the Owner's time requirement shall be as follows:

N/A

§ 3.2 The Contract Time shall be measured from the date of commencement.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than Two Hundred Forty calendar days including all holidays and weekends. (240) days from the date of commencement, or as follows:
(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

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Portion of Work	Substantial Completion Date
N/A	N/A

, subject to adjustments of this Contract Time as provided in the Contract Documents.
A liquidated damages fee of $750 per calendar day will be assessed after the 240-day period.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be Dollars. ($).

§ 4.2 The Contract Sum is based upon the following alternates, and Value Engineering items and are hereby accepted by the Owner:

ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month.

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the FIRST day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the THIRTIETH day of the SAME month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than FORTY-FIVE (45) days after the Architect receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported

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by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

.1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of TEN percent (10 %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™–2007, General Conditions of the Contract for Construction;

.2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of TEN percent (10 %);

.3 Subtract the aggregate of previous payments made by the Owner; and

.4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

.1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and
(Section 9.8.5 of AIA Document A201–2007 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)

.2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201–2007.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:
(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)

Reduction per O.C.G.A. 13-10-80b – If work is satisfactory, owner may elect to discontinue withholding retainage from future Pay Applications. Retainage withheld, prior to this point, is held to the end of the project.

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 FINAL PAYMENT

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment; and

.2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

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ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 INITIAL DECISION MAKER

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201–2007, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 BINDING DISPUTE RESOLUTION

For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201–2007, the method of binding dispute resolution shall be as follows:
(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)

[ ] Arbitration pursuant to Section 15.4 of AIA Document A201–2007

[X] Litigation in a court of competent jurisdiction in Oconee County, Georgia.

[ ] Other *(Specify)*

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.
(Insert rate of interest agreed upon, if any.)

six % 6

§ 8.3 The Owner's representative:
(Name, address and other information)

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§ 8.4 The Contractor's representative:

§ 8.5 Neither the Owner's nor the Contractor's representative shall be changed without ten days written notice to the other party.

§ 8.6 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101–2007, Standard Form of Agreement Between Owner and Contractor.

§ 9.1.2 The General Conditions are AIA Document A201–2007, General Conditions of the Contract for Construction.

§ 9.1.4 The Specifications:
(Either list the Specifications here or refer to an exhibit attached to this Agreement.)
See Project Manual

§ 9.1.5 The Drawings:
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)
Drawings Dated

§ 9.1.6 The Addenda, if any:

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Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents:

.1 AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed by the parties, or the following:

.2 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201–2007 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor's bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)

ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201–2007.
(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201–2007.)

Type of insurance or bond	Limit of liability or bond amount ($0.00)
Payment and Performance Bonds	100% of contract price
Builder's Risk Insurance	100% of contract price
General Liability	$1 million
Automobile Liability	$ 1million
Workman's Compensation	$1 million
Bid Bond	5% of Bid Amount

This Agreement entered into as of the day and year first written above.

OWNER*(Signature)*	***CONTRACTOR****(Signature)*
The Honorable John Daniell, Chairman OCONEE COUNTY BOARD OF COMMISSIONERS	
(Printed name and title)	*(Printed name and title)*

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AIA® Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)
OCONEE COUNTY SENIOR CENTER ADDITION
Oconee Veterans Park
3500 Hog Mountain Road
Watkinsville, GA 30677

THE OWNER:
(Name, legal status and address)
Oconee County Board of Commissioners
23 North Main Street
Wtkinsville, GA 30677

THE ARCHITECT:
(Name, legal status and address)
Carter Watkins Architects Associates Inc., Subchapter S Corporation
P.O. Box 1004
137 East Washington Street
Monroe, Georgia

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

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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 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 and certify termination of the Agreement under Section 14.2.2.

§ 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.

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§ 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 will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment 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 this 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 material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them 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 material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

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 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or

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the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 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.

§ 2.2.3 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.

§ 2.2.4 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.

§ 2.2.5 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.

§ 2.3 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.

§ 2.4 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 written 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 deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor 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. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

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 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.

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§ 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 2.2.3, 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 make 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 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, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and 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 written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required 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

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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 authorized by the Architect in accordance with Sections 3.12.8 or 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

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.

§ 3.6 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 21 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 an equitable adjustment 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 in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed 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

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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 furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply 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 SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be 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, 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.

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§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be 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 the way by which 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 requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing 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 written 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

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required to provide professional services in violation of applicable law. 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 cause such services or certifications to be provided by a properly 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, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, 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. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 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, and 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 and patching shall be restored to the condition existing prior to the cutting, fitting and 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 such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's 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 or 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 Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect 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 such 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 the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

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§ 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 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.

§ 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.

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

§ 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, except as provided in Section 3.3.1.

§ 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 report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) 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.

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§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 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 13.5.2 and 13.5.3, whether or not such 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, material and equipment 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, unless otherwise specifically stated by the Architect, 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 authorize 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 duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 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.

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§ 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 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 or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply 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 previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, 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, which the Contractor, by these 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

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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 in writing; 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 such 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 Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 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 other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the 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, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor 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 report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that

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the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 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 the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors 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, and the Contractor shall proceed promptly, 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.

PLEASE NOTE THAT THE CONTRACTOR OH&P MARKUP ON ANY CHANGE SHALL BE LIMITED TO 10%.

§ 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;

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.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 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 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.

§ 7.3.6 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.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and 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 7.3.7 shall be limited to the following:

.1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;

.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 related to the Work; and

.5 Additional costs of supervision and field office personnel directly attributable to the change.

THE TOTAL OF ITEMS 4 AND 5 SHALL NOT EXCEED 10% OF THE SUM OF ITEMS 1 –
(Paragraph Deleted)

3.

§ 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.

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§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

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, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 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 an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order 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

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.

§ 9.2 SCHEDULE OF VALUES

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

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Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material 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 material 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, material suppliers, or other persons or entities making a claim by reason of having 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 issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part 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 comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. 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. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. 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 material 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

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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 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 the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 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 material or equipment suppliers 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 Architect will reflect such payment on the next Certificate 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 material and equipment 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 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, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment 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 and 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, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

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§ 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' written 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 shut-down, 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, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall 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 such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such 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 as required under Section 11.3.1.5 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.

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§ 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 written 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 and, 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 terms and conditions of 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 and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial 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 and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, 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. If such lien 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 such lien, 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 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 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; or
- **.3** terms of special warranties required by the Contract Documents.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material 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;

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.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 or the Contractor's Subcontractors or Sub-subcontractors; 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 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 owners and users of adjacent sites and utilities.

§ 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, except damage or loss 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, written notice of such 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

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. 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 report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written 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 such material or substance or who are to perform the task of removal or safe containment of such 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

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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 in the amount of the Contractor's reasonable additional costs of shut-down, 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 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 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 indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance 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 indemnify 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 LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- **.1** Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- **.2** Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- **.3** Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- **.4** Claims for damages insured by usual personal injury liability coverage;
- **.5** Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- **.6** Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- **.7** Claims for bodily injury or property damage arising out of completed operations; and
- **.8** Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

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§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 Unless otherwise provided, the Contractor shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

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§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.3.3 LOSS OF USE INSURANCE

The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 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, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 WAIVERS OF SUBROGATION

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, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, 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 covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance 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 11.3.10. The Contractor shall pay Subcontractors their just shares of

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insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 11.4.2 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.

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, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after 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 an 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 written 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

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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 2.4.

§ 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, whether completed or partially completed, of the Owner or separate contractors 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 except that, 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 such 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 such assignment.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

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§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 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.

§ 13.4.2 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 there under, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 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 (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 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 13.5.1, 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 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 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.

§ 13.5.4 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.

§ 13.5.5 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.

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

§ 13.6 INTEREST

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may 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.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time 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 13.7.

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 or a Subcontractor, Sub-subcontractor or their agents or employees or any

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other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, 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 promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, 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' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor 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' written 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 for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;

.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 above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, 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' written 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

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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 as described in 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 written 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 Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

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, 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.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written 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 must 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 CONTINUING CONTRACT PERFORMANCE

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. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

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

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§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein 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.

§ 15.1.5.2 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.

§ 15.1.6 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 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, 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 arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no 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 such 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

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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 an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, 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.

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AIA® Document A305™ – 1986

Contractor's Qualification Statement

The Undersigned certifies under oath that the information provided herein is true and sufficiently complete so as not to be misleading.

SUBMITTED TO:

ADDRESS:

SUBMITTED BY:

NAME:

ADDRESS:

PRINCIPAL OFFICE:

[ ] Corporation
[ ] Partnership
[ ] Individual
[ ] Joint Venture
[ ] Other

NAME OF PROJECT: Oconee County Senior Center Addition.

TYPE OF WORK: *(file separate form for each Classification of Work)*

[X] General Construction
[X] HVAC
[X] Electrical
[X] Plumbing
[X] Other: *(Specify)* Steel erectors; masons; fire protections; fire alarms.

§ 1 ORGANIZATION

§ 1.1 How many years has your organization been in business as a Contractor?

§ 1.2 How many years has your organization been in business under its present business name?

§ 1.2.1 Under what other or former names has your organization operated?

§ 1.3 If your organization is a corporation, answer the following:

§ 1.3.1 Date of incorporation:
§ 1.3.2 State of incorporation:
§ 1.3.3 President's name:
§ 1.3.4 Vice-president's name(s)

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

This form is approved and recommended by the American Institute of Architects (AIA) and The Associated General Contractors of America (AGC) for use in evaluating the qualifications of contractors. No endorsement of the submitting party or verification of the information is made by AIA or AGC.

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§ 1.3.5 Secretary's name:
§ 1.3.6 Treasurer's name:

§ 1.4 If your organization is a partnership, answer the following:
§ 1.4.1 Date of organization:
§ 1.4.2 Type of partnership (if applicable):
§ 1.4.3 Name(s) of general partner(s)

§ 1.5 If your organization is individually owned, answer the following:
§ 1.5.1 Date of organization:
§ 1.5.2 Name of owner:

§ 1.6 If the form of your organization is other than those listed above, describe it and name the principals:

§ 2 LICENSING
§ 2.1 List jurisdictions and trade categories in which your organization is legally qualified to do business, and indicate registration or license numbers, if applicable.

§ 2.2 List jurisdictions in which your organization's partnership or trade name is filed.

§ 3 EXPERIENCE
§ 3.1 List the categories of work that your organization normally performs with its own forces.

§ 3.2 Claims and Suits. (If the answer to any of the questions below is yes, please attach details.)
§ 3.2.1 Has your organization ever failed to complete any work awarded to it?

§ 3.2.2 Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your organization or its officers?

§ 3.2.3 Has your organization filed any law suits or requested arbitration with regard to construction contracts within the last five years?

§ 3.3 Within the last five years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract? (If the answer is yes, please attach details.)

§ 3.4 On a separate sheet, list major construction projects your organization has in progress, giving the name of project, owner, architect, contract amount, percent complete and scheduled completion date.

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§ 3.4.1 State total worth of work in progress and under contract:

§ 3.5 On a separate sheet, list the major projects your organization has completed in the past five years, giving the name of project, owner, architect, contract amount, date of completion and percentage of the cost of the work performed with your own forces.

§ 3.5.1 State average annual amount of construction work performed during the past five years:

§ 3.6 On a separate sheet, list the construction experience and present commitments of the key individuals of your organization.

§ 4 REFERENCES

§ 4.1 Trade References:

§ 4.2 Bank References:

§ 4.3 Surety:

§ 4.3.1 Name of bonding company:

§ 4.3.2 Name and address of agent:

§ 5 FINANCING

§ 5.1 Financial Statement.

§ 5.1.1 Attach a financial statement, preferably audited, including your organization's latest balance sheet and income statement showing the following items:

Current Assets (e.g., cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses);

Net Fixed Assets;

Other Assets;

Current Liabilities (e.g., accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries and accrued payroll taxes);

Other Liabilities (e.g., capital, capital stock, authorized and outstanding shares par values, earned surplus and retained earnings).

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§ 5.1.2 Name and address of firm preparing attached financial statement, and date thereof:

§ 5.1.3 Is the attached financial statement for the identical organization named on page one?

§ 5.1.4 If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsidiary).

§ 5.2 Will the organization whose financial statement is attached act as guarantor of the contract for construction?

§ 6 SIGNATURE

§ 6.1 Dated at this day of

Name of Organization:

By:

Title:

§ 6.2

M being duly sworn deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

Subscribed and sworn before me this day of

Notary Public:

My Commission Expires:

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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)
Oconee County Board of Commissioners
23 N Main Street
Watkinsville Georgia 30677

BOND AMOUNT: $

PROJECT:
(Name, location or address, and Project number, if any)
Oconee County Senior Center Addition

ADDITIONS AND DELETIONS:
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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

Init.
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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)*

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Payment Bond

CONTRACTOR:
(Name, legal status and address)

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

OWNER:
(Name, legal status and address)
OconeeCounty Board of Commissioners
23 N Main Street
Watkinsville, Georgia 30677

CONSTRUCTION CONTRACT
Date:
Amount: $
Description:
(Name and location)
Oconee County Senior Center Addition.

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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.

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BOND
Date:
(Not earlier than Construction Contract Date)

Amount: $
Modifications to this Bond: | | None | | See Section 18

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:		Name and Title:	

(Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or **BROKER:**	**OWNER'S REPRESENTATIVE:**
	(Architect, Engineer or other party:)

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§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and

.2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

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§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, 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.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- **.1** the name of the Claimant;
- **.2** the name of the person for whom the labor was done, or materials or equipment furnished;
- **.3** a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- **.4** a brief description of the labor, materials or equipment furnished;
- **.5** the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- **.6** the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- **.7** the total amount of previous payments received by the Claimant; and
- **.8** the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

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§ 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:		Name and Title:	
Address:		Address:	

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Performance Bond

CONTRACTOR:
(Name, legal status and address)

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

OWNER:
(Name, legal status and address)

Oconee County Board of Commissioners
23 N Main Street
Watkinsville, Ga 30677

CONSTRUCTION CONTRACT
Date:
Amount: $
Description:
(Name and location)
Oconee County Senior Center

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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.

Init.
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§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

.1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

.2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

.3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

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§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

.2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and

.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, 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.

§ 14 Definitions

§ 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

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§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:		Name and Title:	
Address:		Address:	

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What Your Business Needs to Know about Georgia's E- Verify Requirements (Effective July 1, 2013)

E-Verify Contractor Requirements

Georgia law, **O.C.G.A. § 13-10-91**, requires **all businesses** that contract with a public employer for **labor or services** by bid or by contract in which the labor or services **exceed $2499.99** to sign an affidavit attesting that they are registered for and use E-Verify **unless** 1) the contractor has **no employees** (in which case they must present an approved state issued identification card/drivers' license from an approved state as provided on the Attorney General's website) or, 2) the contract is with an individual licensed under Title 26, Title 43, or the State Bar of Georgia who is in good standing and that individual is performing that service. Anyone your business subcontracts with for labor and services, as well as the subcontractors of your subcontractors, in furtherance of that contract is also subject to this requirement. E-Verify Contractor, Subcontractor, and Sub-Subcontractor affidavits can be found here.

E-Verify Private Employer Requirements

Georgia law, **O.C.G.A. § 36-60-6**, requires all businesses, **with more than 10 employees** that are seeking an occupation tax certificate/business license or other document required to operate a business with a county or city to sign an affidavit attesting that they are registered for and use E-Verify. Businesses with **10 or fewer employees** are required to sign an affidavit attesting that they are exempt from this requirement. Once a business has provided this affidavit to the county, all subsequent renewals can be provided with the submission of the E-Verify number, as long as it is the same number as provided on the affidavit, or assertion that your business is exempt. The county will provide the format in which renewal information is collected. E-Verify Private Employer and Exemption Affidavits can be found here.

What Is E-Verify?

E-Verify is a federal Web-based system that electronically verifies the employment eligibility of newly hired employees. It works by allowing participating employers to electronically compare employee information taken from the I-9 Form (the paper-based employee eligibility verification form used for all new hires) against records in the Social Security Administration's database and the records in the Department of Homeland Security immigration databases.

Where Do I Find My E-Verify Number?

The Human Resources Department for your business should have that information, if you have registered. The E-Verify number, which consists of four to six numerical characters, is located directly below the E-Verify logo on the first page of the memorandum of understanding (MOU) entered into between your business and the Department of Homeland Security (DHS) to use E-Verify.

What if I cannot locate or do not have access to my MOU?

If the HR director/program administrator for E-Verify from your business has taken the E-Verify tutorial, you may obtain your company ID number by: 1) Logging in to E-Verify with your assigned user ID and password; 2) From 'My Company,' select 'Edit Company Profile;' 3) The Company Information page will display the company ID number. If your HR director/ program administrator has not completed the tutorial, you must contact E-Verify Customer Support at 888-464-4218 or at E-Verify@dhs.gov for assistance.

Is the Federal Tax Identification Number/Employer Identification Number (EIN) the same as the E-Verify Number?

No. While you will be required to provide the Federal Tax Identification Number/EIN for your business to DHS in order to register for E-Verify, a separate number, which consists of four to six numerical characters, will be provided as the E-Verify number for your business by DHS, which will be located on the MOU.

How Do I Register for E-Verify? To register for E-Verify, please visit the DHS website. If you need assistance in completing the registration process or need additional information relating to E-Verify, call their customer service number at 1-888-464-4218, email them at E-Verify@dhs.gov or visit their website at http://www.dhs.gov/e-verify.

GEORGIA SECURITY & IMMIGRATION COMPLIANCE (GSIC) AFFIDAVIT

The Oconee County Board of Commissioners and Contractor agree that compliance with the requirements of O.C.G.A. § 13-10-91, as amended, and Rule 300-10-1-.02 of the Rules of the Georgia Department of Labor are conditions of this Agreement for the physical performance of services.

The Contractor further agrees that its compliance with the requirements of O.C.G.A. § 13-10-91, as amended, and DOL Rule 300-10-1-.02 is attested to on the executed Contractor Affidavit and Agreement attached hereto.

If employing or contracting with any subcontractor(s) in connection with this Agreement, Contractor further agrees:

1) To secure from the subcontractor(s) an affidavit attesting to the subcontractor's compliance with O.C.G.A. § 13-10-91, as amended, and DOL Rule 300-10-1-.02; such affidavit being in the form attached hereto; and
2) The failure of Contractor to supply the affidavit of compliance at the time of execution of this Agreement and/or the failure of Contractor to continue to satisfy the obligations of O.C.G.A. § 13-10-91, as amended, and DOL Rule 300-10-1-02 as set forth in this Agreement throughout the contract period shall constitute a material breach of the contract.

Upon notice of such breach, Contractor shall be entitled to cure the breach within ten days, upon providing satisfactory evidence of compliance with the terms of this Agreement and State law. Should the breach not be cured, Oconee County shall be entitled to all available remedies, including termination of the contract and damages.

SEE AFFIDAVITS ON FOLLOWING PAGE

GEORGIA SECURITY AND IMMIGRATION COMPLIANCE AFFIDAVIT

O.C.G.A. § 13-10-91(b)(1)

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of (Oconee County Board of Commissioners has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

_____
Federal Work Authorization User Identification Number (E-Verify Number)

_____
Date of Authorization

_____
Name of Contractor

_____
Name of Project
Oconee County Board of Commissioners
Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, ___, 20__ in ____,(city) _____(state).

_____
Signature of Authorized Officer or Agent

_____
Printed Name and Title of Authorized Officer or Agent

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

_____
NOTARY PUBLIC

My Commission Expires:

_____

CDBG Contract Conditions

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Section 3 Clause of the Urban Development Act of 1968

1.) The work to be performed under this contract is on a project assisted under a program providing direct Federal financial assistance from the Department of Housing and Urban Development and is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. l701u. Section 3 requires that to the greatest extent feasible opportunities for training and employment be given lower income residents of the project area and contracts for work in connection with the project to be awarded to business concerns which are located in, or owned in substantial part by persons residing in the area of the project.

2.) The parties to this contract will comply with the provisions of said Section 3 and the regulations issued pursuant thereto by the Secretary of Housing and Urban Development set forth in 24 CFR Part 135, and all applicable roles and orders of the Department issued thereunder prior to the execution of this contract The parties to this contract certify and agree that they are under no contractual or other disability which would prevent them from complying with these requirements.

3.) The Contractor will send to each labor organization or representative of workers with which he has a collective bargain-agreement or other contract or understanding, if any, a notice advising the said labor organization or workers' representative of his commitments under this Section 3 clause and shall post copies of the notice in conspicuous places available to employees and applicants for employment or training.

4.) The Contractor will include this Section 3 clause in every Subcontract for work in connection with the project and will, at the direction of the applicant for or recipient of Federal financial assistance, take appropriate action pursuant to the Subcontract upon a finding that the Subcontractor is in violation of regulations issued by the Secretary of Housing and Urban Developmen4 24 CPR. Part 135. The Contractor will not Subcontract with any Subcontractor where it has notice or knowledge that the letter bas been found in violation of regulations under 24 CPR Part 135 and will not let any Subcontract unless the Subcontractor has first provided it with a preliminary statement of ability to comply with the requirements of these regulations.

5.) Compliance with the provisions of Section 3, the regulations set forth in the 24 CPR Part 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of the contract, shall be a condition of the Federal financial assistance provided to the project, binding upon the applicant or recipient for such assistance, its successors, and assigns. Failure to fulfill these requirements shall subject the applicant or recipient, its Contractors and Subcontractors, its successors, and assigns to those sanctions specified by the grant or loan agreement or contract through which Federal assistance is provided, and to such sanctions as are specified by 24 CFR Part 135.

“Provision for Remedies” Clause

1.) **Termination:** Unearned payments under this contract may be suspended or terminated upon refusal to accept any additional conditions that may be imposed by City/County; or if the grant to the City/County under the Community Development Block Grant Program is suspended or terminated. Moreover, if through any cause, the Contractor shall fail to fulfill its obligations under this contract in. a timely and proper manner, or if the Contractor shall violate any of the covenants, agreements, conditions or obligations of the contract documents; the City/County may terminate this contract by giving written notice to the Contractor and surety of such termination and specifying the effective date of such termination. In such event, the City/County may take over the "work and prosecute the same to completion, by contract or otherwise, and the Contractor and his sureties shall be liable to the City/County for any additional cost incurred by the Owner in its completion of the work and they shall also be liable to the Owner for liquidated damages for any delay in the completion of the work as provided below. Furthermore, the Contractor will be paid an amount which bears the same ratio to the total compensation as the work and services actually performed bear to the total work and services required. Provided, however, that if less than sixty percent of the services required by this Contract have been performed upon the effective date of such termination, the Contractor shall be reimbursed (in addition to the above payment) for that portion of the actual out-of-pocket expenses (not otherwise reimbursed under this Contract) incurred by the Contractor during the Contract period which are directly attributable to the uncompleted portion of the services required by this Contract.

2.) **Liquidated Damages for Delays.** If the work is not completed within the time stipulated, therefore, including any extensions of time for excusable delays as herein provided, the Contractor shall pay to the Owner as fixed and agreed liquidated damages (it being impossible to determine the damages occasioned by the delay) for each working day of delay, until the work is completed, the amount as set forth in Article 2, Section 2.2: Contract Time and the Contractor and his sureties shall be liable to the Owner for the amount thereof.

3.) **Excusable Delays.** The right of the Contractor to proceed shall not be terminated nor shall the Contractor be charged with liquidated damages for any delays in the completion of the work due:

(a) To any acts of the Government, including controls or restrictions upon or requisitioning of materials, equipment, tools, or labor by reason of war, National Defense, or any other national emergency;

(b) To any acts of the Owner;

(c) To causes not reasonable foreseeable by the parties to this Contract at the time of the execution of the Contract which are beyond the control and without the fault or negligence of the

Contractor, including, but not restricted to, acts of God or of the public enemy, acts of another Contractor in the performance of some other contract with the Owner, fires, floods, epidemics, quarantine, strikes, freight embargoes, and weather of unusual severity such as hurricanes, tornadoes, and cyclones; and

(d) To any delay of any Subcontractor occasioned by any of the causes specified in subparagraphs
(a) (b) and (c) or this subparagraph "d"

Provided, however, that the Contractor promptly notified the Owner within ten (10) days of the delay. Upon receipt of such notification, the Owner shall ascertain the facts and the cause and extent of delay. If upon the basis of the terms of this contract the delay is properly excusable, the Owner shall extend the time for completing the work for a period of time commensurate with the period of excusable delay.

"Termination for Convenience Clause"

1.) Termination for Convenience of Bartow County:

Bartow County may terminate this contract at any time for any reason by giving at least thirty (30) days' notice in writing to the Contractor. If the contract is terminated by Bartow County as provided herein, the Contractor will be paid a fair payment as negotiated with Bartow County for the work completed as of the date of termination.

Equal Employment Opportunity (EEO) Clause

During the performance of this contract, the Contractor agrees as follows:

1.) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor will take affirmative action to ensure that applicants are employed and the employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2.) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

3.) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

4.) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations and relevant orders of the Secretary of Labor.

5.) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.

6.) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by the rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

7.) The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every Subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding

upon each Subcontractor or vendor. The Contractor will take such action with respect to any Subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance. Provided, however, that in the event a Contractor becomes involved in, or is threatened with litigation with a Subcontractor or vendor as a result of such direction by the administering agency the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1.) As used in these specifications:

a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

b. "Director" means Director, Office of Federal Contract Compliance Program, United States Department of Labor, or any person to whom the Director delegates authority;

c. "Employer identification number" means the Federal Social Security Number used on the Employer's Quarterly Federal Tax Return, US. Treasury Department Form 941.

d. "Minority" includes:

(i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

(ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

(iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership, and participation or community identification).

2.) Whenever the Contractor, or any Subcontractor at any tier, Subcontracts a portion of the work involving any construction trade, it shall physically include in each' Subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3.) If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the US. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trade which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a

goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4.) The Contractor shall implement the specific affirmative action standards provided in paragraphs “7a” through “p” of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

5.) Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications. Executive Order 11246, or the regulations promulgated pursuant thereto.

6.) In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U. S. Department of Labor.

7.) The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If

such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union, or if referred, not employed by the Contractor, this shall be documented in the file with the reasons therefor, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, lay-off, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Directs its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source. The Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment of minority and female youth both on the sit e and in other areas of a Contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

I. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for Subcontracts from minority and female construction Contractors and suppliers, including circulation of solicitations to minority and female Contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8.) Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a Contractor association, joint Contractor-union, Contractor-community, or other similar group of which the Contractor is a member and participant may be asserted as fulfilling any one or more of its obligations under 7a through p of those Specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9.) A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantial1y disparate manner (for example, even though the

Contractor has achieved it goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10.) The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race color, religi9n, sex or national origin.

11.) The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12.) The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing Subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs, any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13.) The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action stops, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.S.

14.) The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, Contractors shall not be required to maintain separate records.

15.) Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

1.) The Offerer’s or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

2.) The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Timetable:	Goals for minority participation	Goals for female participation
Until Further Notice	19.5%	6.9%

These goals are applicable to each non-exempt Contractor's total on-site construction workforce, regardless of whether or not part of that workforce is performing work on a Federal, Federally assisted or non-Federally related project, contract or sub-contract.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this soli citation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the tot al work hours performed.

3.) The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction Subcontract in excess of $ l 0,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the Subcontractor; employer identification number; estimated dollar amount of the Subcontract; estimated starting and completion dates of the Subcontract; and the geographical area in which the contract is to be performed.

4.) As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is Bartow County is included in the Atlanta-Sandy Springs-Roswell, GA Metropolitan Statistical Area. Bartow County proposes to build the expansion on the adjacent 4-acre lot located at the junction of Allatoona Dam Road and Monroe Crossing SE, parcel number 0093-0608-001.

NOTICE OF REQUIREMENT OF PARTICIPATION GOALS FOR MINORITIES AND FEMALES IN THE CONSTRUCTION INDUSTRY

For federal and federally assisted construction contractors, goals for minorities and females are established as a percentage participation rate. The percentage goal established for minority participation must be at least equal to the percentage established for that "economic area" as outlined in the list below.

Contractors may establish higher goals if they desire. Although a contractor is required to make good faith efforts to meet their goals, the goals are not quotas and no sanctions are imposed solely for failure to meet them.

For more information about the development of the goals, see Federal Register, Vol. 45, No. 194, at 65976-65991. (October 3, 1980) (minorities) and Federal Register, Vol. 45, No. 251 at 85750-85751 (December 30, 1980) (females). The text of these Federal Register notices can be found:
Federal Register Notice : Vol. 45, No. 194, at 65976-65991 (October 3, 1980) HTML PDF
Federal Register Notice : Vol. 45, No. 251, at 85750-85751 (December 30, 1980) HTML PDF

Georgia:

Non-SMSA Counties	**19.5**

GA Banks; GA Barrow; **GA Bartow**; GA Carroll; GA Clarke; GA Coweta; GA Dawson; GA Elbert; GA Fannin; GA Floyd; GA Franklin; GA Gilmer; GA Gordon; GA Greene; GA Habersham; GA Hall; GA Haralson; GA Hart; GA Heard; GA Jackson; GA Jasper; GA Lamar, GA Lumpkin; GA Madison, GA Morgan; GA Oconee, GA Oglethorpe; GA Pickens; GA Pike; GA PoIk; GA Rabun, GA Spalding; GA Stephens; GA Towns; GA Union; GA Upson; GA White.

Certification of Non-segregated Facilities

By the submission of this bid, the bidder, offerer, applicant or Subcontractor certifies that s/he does not maintain or provide for his/her employees any segregated facility at any of his/her establishments, and that s/he does not permit employees to perform their services at any location, under his/her control where segregated facilities are maintained. S/He certifies further that s/he will not maintain or provide for employees any segregated facilities at any of his/her establishments, and s/he will not permit employees to perform their services at any location under his/her control where segregated facilities are maintained. The bidder, offerer, applicant or Subcontractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause of this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. S/He further agrees that (except where s/he has obtained identical certifications from proposed Subcontractors for specific time periods) s/he will obtain identical certification from proposed Subcontractors prior to the award of Subcontracts exceeding$10,000 which are not exempt from the provisions of the Equal Opportunity Clause; that s/he will retain such certifications in his/her files; and that s/he will forward the following notice to such proposed Subcontractors (except where proposed Subcontractors have submitted identical certifications for specific time periods).

FEDERAL LABOR STANDARDS PROVISION
Georgia Community Development Block Grant

Applicability The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A.1. (i) **Minimum Wages**. All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the **Copeland Act (29 CFR Part 3)**, the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the **Davis-Bacon Act** on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The **wage determination** (including any additional classification and wage rates conformed under 29 CFR Part 5.5(a)(I)(ii)) and the Davis-Bacon poster (WH- 1321) shall be posted at all times by the Contractor and its Subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii)(a) The contracting officer shall require that any class of laborers or mechanics, which is not listed in the wage detem1ination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
(b) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the

action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, US. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary.

(c) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary.

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (l) (b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 12] 5-0140.)

2. **Withholding**. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime Contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the Contractor or any Subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 for under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, HUD or its designee may, after

written notice to the Contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the Contractor, disburse such amounts withheld for and on account of the Contractor or Subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project.) Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1 (b) (2) (B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1 (b)(2)(8) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable program (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii)(a) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the Contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR Part 5.5(a) (3) (i). This information may be submitted in any form desired. Optional Form WH- 347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), US. Government Printing Office, Washington, DC, 20402. The prime Contractor is responsible for the submission of copies of payrolls by all Subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or Subcontractor-or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be maintained under 29 CFR Part 5.5(a) (3) (i) and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly fi-om the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph A.3 (ii) (b) of this section.

(d) The falsification of any of the above certifications may subject the Contractor or Subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The Contractor or Subcontractor shall make the records required under paragraph A.3(i) of this section available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or Subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR PaJ1 5.12.

4. (i) **Apprentices and Trainees**. Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the US. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ration permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeymen's

hourly rate) specified in the Contractor's or Subcontractor’s registered program shall be observed.

Every apprentice must be paid at not Jess than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification.

If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) **Trainees**. Except as provided in 29 CFR 5. I 6, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the US. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journey hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performs. In addition, any trainee performing work on the job site in excess of the ration permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with **Copeland Act** requirements. The Contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract.

6. **Subcontracts**. The Contractor or Subcontractor wil1 insert in any Subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as HUD or its designee may be appropriate instructions require, and al.so a clause requiring the Subcontractors to include these clauses in any lower tier Subcontracts. The prime Contractor shall be responsible for the compliance by any Subcontractor or lower tier Subcontractor with all the contract clauses in 29 CFR Part 5.5.

7. **Contract termination**: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounded for termination of the contract, and for debarment as a Contractor and a Subcontractor as provided in 29 CFR 5. 12.

8. **Compliance with Davis-Bacon and Related Act Requirements**. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. **Disputes concerning labor standards**. Disputes arising out of a labor standards provision of this contract shall to be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6 and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its Subcontractors) and HUD or its designee, the US. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5. 12(a) (1) or to be awarded HUD contracts or participant in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be Subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5. 12(a) (1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the US. Criminal Code, 18 U.S.C. 1001. Additiona11y, US. Criminal Code, Section 1010, Title 18, U .S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of ... influencing in any way the action of such Administration ... makes, utters or publishes any statement, knowing the same to be false ... shall be fined not more than $5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other _labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any Subcontractor because such employee has filed any complaint or instituted or caused to be instituted any

proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. **Contract Work Hours and Safety Standards Act**. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) **Overtime requirements:** No Contractor or Subcontractor contracting for any part of the contract work may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) **Violation:** liability for unpaid wages, liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the Contractor and any Subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such Contractor and Subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) **Withholding for unpaid wages and liquidated damages**: HUD or its designee shall upon its own action or upon w1itten request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any money payable on account of work performed by the Contractor or Subcontractor under any such contract or any other Federal contract with the same prime Contractor such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or Subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) **Subcontracts**: The Contractor or Subcontractor shall insert in any Subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the Subcontractors to include these clauses in any lower tier Subcontracts. The prime Contractor shall be responsible for compliance by any Subcontractor or lower tier Subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. **Health and Safety**

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 (formerly part 1518) and failure to comply may result in imposition of

sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54,83 Stat. 96).

(3) The Contractor shall include the provisions of this Article in every subcontract so that such provisions will be binding on each Subcontractor. 1be Contractor sbal1 take such action with respect to any Subcontract as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

ACCEPTABLE ALTERNATE WORK SHEET
FOR CONTRACTOR CERTIFICATION FOR HUD PROGRAMS UNDER 24 CFR

Certification regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion- Lower-Tier Covered Transactions pursuant to 24 code of Federal Regulations, Part 24.510(b) and HUD Handbook 1300.13, REV-1 (excluding public and Indian housing programs):

By signing and submitting this proposal, the prospective lower-tier participant certifies that neither it, it's principals nor affiliates, is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. Further, the Participant provides the certification set out below:

1. The certification in this clause is a material representation of fact upon which reliance was placed when this Transaction was entered into. If it is later determined that an erroneous certification was rendered, in addition to other remedies available to the Federal Government, The Department or agency with which this transaction originated may pursue available remedies.
2. Further, the Participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the Participant learns that this certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
3. By submitting this proposal, it is agreed that should the proposed covered transaction be entered into, the Participant will not knowingly enter into lower-tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction unless authorized by the agency with which this transaction originated.
4. It is further agreed that by submitting this proposal, the Participant will include this Certification, without modification, in all lower-tier covered transactions and in all solicitations for lower-tier covered transactions.

Contractor Name _____
Date _____ Title _____
Address _____
City_____ State _____ Zip _____
Contractor Signature _____

NON-CERTIFICATION:

1. As the prospective lower-tier participant, I am unable to certify to statements in this Certification as explained in the attachment to this proposal.

Contractor Name _____
Date _____ Title _____
Address _____
City_____ State _____ Zip _____
Contractor Signature _____

The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U.S.C. 1001.

COMPLIANCE WITH CLEAN AIR AND WATER ACTS

The contract is subject to the requirements of the Clean Air Act, as amended, 42 USC 1857 et. seq., and the regulations of the Environmental Protection Agency with respect thereto, at 40 CFR Part 15, as amended from time to time.

In compliance with said regulations:

1.) The Contractor shall require of Subcontractors that any facility to be utilized in the performance of any nonexempt contract or Subcontract is not listed on the List of Violating Facilities issued by the Environmental Protection Agency (EPA) pursuant to 4C CFR 15.20.

2.) The Contractor will comply with all the requirements of Section 114 of the Clean Air Act, as amended, (42 USC 1857c-8) and section 308 of the Federal Water Pollution Control Act as amended, (330 USC l 3 18) relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in said section 114 and section 308, and all regulations and guidelines issued thereunder.

3.) The Contractor will provide prompt notice of any notification received from the Director, Office of Federal Activities, and EPA, indicating that a facility utilized or to be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4.) The Contract will include or cause to be included the criteria and requirements to paragraph (1) through (4) of this section in every nonexempt Subcontract and take such action as the Government will direct as a means of enforcing such provisions.

PERFORMANCE, PAYMENT and BID BONDS

Contract Performance and Payment Bonds issued in the full amount of the contract are required by federal procurement rules if the contract is for $100,000 or more.

A Bid Bond or other security is required by federal rules whenever the contract is for $100,000 or more.

Generally these bonds must be issued by a surety company satisfactory to the local government, qualified to do business in Georgia, and in a format meeting the federal and state legal requirements. The bonding company must also appear on the "List of Acceptable Sureties" published annually by the US Department of the Treasury.

DCA recommends that CDBG Recipients be sure to assign responsibility for reviewing construction bonds. This job may be given to the local attorney, the grant administrator, or the project architect/engineer. Specific duties include verification that the agent is licensed by the state and authorized by the bonding company and verification through the Insurance Commissioner that the company is financially sound and licensed in Georgia. The actual bond should also be reviewed and verified as being valid.

CDBG CONTRACT REVIEW CHECKLIST

CDBG Grantee:	Grant Number:	Contract Amount:	Reviewer:	Date of Review:
☐ Contractor/Subcontractor Affidavit	(Compliance with OCGA 13-10-91) Applicable to All Contracts and Subcontracts			
☐ Section 3 Clause	All Contracts			
☐ Provision for Remedies	All Contracts			

	ARCHITECTURAL & ENGINEERING SERVICES	HOUSING REHAB		CONSTRUCTION CONTRACTS			
		☐ Less than 8 Units	☐ 8 or More Units	☐ Over $100,000	☐ Over $40,000	☐ Over $10,000	☐ Over $2,000
☐ Provision for termination	✓ If over $10,000	✓ If over $10,000	✓ If over $10,000	✓	✓	✓	
Executive Orders 11246/11375							
☐ EEO Clause				✓	✓	✓	
☐ EEO Specifications				✓	✓	✓	
☐ Affirmative Action Clause				✓	✓	✓	
☐ Non-Segregated Facilities				✓	✓	✓	
Federal Labor Standards							
☐ Copeland Anti-Kickback			✓	✓	✓	✓	✓
☐ Davis-Bacon Clause			✓	✓	✓	✓	✓
☐ Wage Rate from DCA			✓	✓	✓	✓	✓
☐ Work Hours & Safety			✓ If over $10,000	✓			
☐ Performance Bonds				✓	✓		
☐ 5% Bid Bond				✓			
☐ Clean Air/ Water Clause				✓			
☐ Provision for Disability Accessibility (if a bldg.)	✓						
☐ Provision for GA Energy Code (if a bldg.)	✓						

Mandatory Section 3 Solicitation Package

Georgia Department of Community Affairs
60 Executive Park South, NE, Atlanta, GA 30329

Section 3 of the HUD Act of 1968 fosters local economic development, neighborhood economic improvement, and individual self-sufficiency. Section 3 is the legal basis for providing jobs for residents and awarding contracts to businesses in areas receiving certain types of HUD financial assistance. This project is a Section 3 contract oppotunity.

A. To be considered for a contract award exceeding $100,000, the solicitation package must be satisfactorily completed and submitted with your bid/proposal prior to award.

B. To be considered for a contract award of $100,000 or less, please sign this page indicating have recieved, read and understood this information. Submit this with your bid/proposal prior to award.

C. To claim Section 3 preference for a contract of any amount, the solicitation package must be satisfactorily completed and submitted with your bid/proposal prior to award.

This mandatory solicitation package has been developed in accordance with DCA's Section 3 Policy for Covered HUD Funded Activities. DCA encourages all recipients, sub-recipients, contractors, and sub-contractors to review this policy prior to completion of the solicitation package. For those solicitations that meet the applicable Section 3 thresholds, this package must be returned in accordance with the applicable instructions to the contracting entity prior to award ***or at the time of submission of a bid/proposal in order to claim a Section 3 preference***. The Section 3 Clause, required forms, and instructions are included in this package.

A. To be considered for a contract award exceeding $100,000, the entire solicitation package must be satisfactorily completed and submitted prior to award. In order to claim a preference for a contract award exceeding $100,000, the Section 3 Self-Certification and Action Plan and the Section 3 Business Concern Self Certification portions of the solicitation package must be satisfactorily completed and submitted at the time of submission of a bid/proposal.

The following Section 3 forms must be completed and returned as instructed. Failure to return these forms with your bid/proposal may disqualify you from this contract opportunity.

- Mandatory Section 3 Solicitation Package Cover Sheet
- Section 3 Self Certification and Action Plan (pages 8 - 10)
- Previous Section 3 Compliance Certification (page 11)
- Assurance of Compliance Certification (page 12)
- Preliminary Statement of Work Force Needs (pages 13-15)

***B. For Section 3 Covered Assistance of $100,000 or less**, the solicitation package must be made available to bidders/offerors in accordance with DCA's Section 3 Policy; however, bidders/ offerors are not required to submit the solicitation package unless a preference is being claimed. In this case, only the Section 3 Self-Certification and Action Plan and the Section 3 Business Concern Self Certification must be completed at the time of submission of a bid/proposal.*

C. Any bid/proposal claiming a preference must include the completed and signed Section 3 Self-Certification and Action Plan and the Section 3 Business Concern Self Certification, and be submitted by the bid/proposal deadline. Additionally, if the contractor is claiming certification as a 51% Resident Owned Business (ROB) or is certifying as a 30% employer, the Resident Self-Certification and Skills Data Form must be returned for all employees who meet the low- or very low-income requirement as well as the appropriate Section 3 Business Certification.

I received, read and understood the Mandatory Section 3 Solicitation Package.

Printed Name _____ **Date** _____

Signature _____

Section 3 Solicitation Overview and Instructions for Contractors

The DCA Section 3 Policy requires that, when the **Section 3 regulation is triggered,** every effort within the contractor's disposal must be made, to the greatest extent feasible, to offer all available employment and contracting opportunities to Section 3 residents and Section 3 businesses based on the compliance methods below.

All Contracts and All Contractors must meet Section 3 compliance by:

A. Giving notice of any and all opportunities for employment and contracting to residents of the local Public Housing Authority (PHA), and other low and very low income area residents and businesses, by posting the opportunity in community sources generally available to low income residents and the general public. Exercising a ***minimum of three (3)*** of the following listed sources must be completed prior to offering employment to anyone not covered by Section 3 requirements:

   1. The local community newspaper
   2. The most widely distributed newspaper
   3. Company or agency website
   4. The management office of the local housing authority/homeless service agency/local low income housing community
   5. Local Workforce Board (i.e. Department of Labor)
   6. Local office of the Georgia Division of Family and Children Services
   7. Dodge Room http://www.construction.com/dodge/dodge.asp
   8. Other locations as approved by DCA

B. The recipient, sub-recipient or contractor must check the HUD Section 3 Business Registry to determine if there are any Section 3 businesses in the County where the work will be performed. If there are Section 3 businesses in the County that may be able to perform the work, the recipient, sub-recipient or contractor must provide a copy of the contracting opportunity(ies) (e.g., bid notices) to the Section 3 businesses. See the HUD Section 3 Business Registry at: https://portalapps.hud.gov/Sec3BusReg/BRegistry/What.

C. Clearly stating in notices that the position is a "Section 3 covered position under the HUD Act of 1968 and that Section 3 Residents and Business Concerns are encouraged to apply."

D. Placing the Section 3 Clause provided in Appendix A in ALL solicitations.

E. When possible, other activities may be done to demonstrate effort to comply with the Safe Harbor Limits. These other efforts are listed in the appendix to part 135 of the Code of Federal Regulations—24 CFR Part 135 and include:

   1. Distributing or posting flyers advertising positions to be filled;

2. Contacting the local government or housing authority for a list of residents who have expressed interest in Section 3 employment;
3. Holding job informational meetings for residents, contractors, etc…;
4. Contacting agencies administering HUD YouthBuild programs and requesting their assistance in recruiting HUD YouthBuild program participants for training and employment positions.

F. Linking residents or businesses to local resources that may be available to help prepare them for applying for and achieving the opportunity.

G. Working with DCA, the recipient, sub-recipient or contractor as applicable in developing a communication and follow up process to track and report all Section 3 applications and hiring activities to ensure the reporting of compliance efforts, and that contracting and sub-contracting are accurate. Provide preference in hiring and contracting to Section 3 applicants and contractors when employment or contracting opportunities are offered and all requirements are met and remain equal. Contractors must:

1. Provide this package to all sub-contractors when soliciting bids for all contracts or sub-contracts;
2. Meet all the same processes in A-E; and
3. Provide Preference to all sub-contractors meeting the definitions as stated in Section VI of DCA's Section 3 Policy for Covered HUD Funded Activities.

H. In order for Preference as a Section 3 Contractor to be factored into the award decision, all elements of the solicitation criteria must be equal between contracts. This means price and all other factors must be equal. Then the contractors that elect Preference on the Certification and Action Plan form that meet that Preference criterion will be provided Preference in the award of the contract as provided in Part VI., Preferences and Eligibility of DCA's Section 3 Policy for Covered HUD Funded Activities.

Example:
Bill's electrical and Sue's Electrical bid a job where the housing authority has a budget of $500,000. Bill bids $480,000 and elects a Preference as a Section 3 business concern because he qualifies as a 51% Resident Owned Business. Sue bids $450,000 but does not elect any Preference. Both companies met all the other requirements. Sue will be awarded the contract because Bill's bid was higher.

Important items to remember about receiving Preferences in contract award:

All contractors and/or subcontractors that elect a Preference and are awarded a contract must be in compliance prior to the issuance of a Notice to Proceed by DCA, the recipient, sub-recipient, or the contractor based on the policies established for the applicable DCA funding program. The contractor and/or subcontractor must maintain the elected Preference standard during the entire contract or risk having the contract terminated for failure to comply. **See Appendix B for further details.**

When a contractor and/or subcontractor that elected a Preference is unable to identify a Section 3 resident or a Section 3 business for employment or contracting opportunities, the contractor then ***must*** offer employment related training to the Section 3 residents in the county. The training must be provided according to Part VII – Other Economic Opportunities in DCA's Section 3 Policy.

Appendix A
Section 3 Clause

Training and Employment Opportunities for Residents in the Project Area (Section 3, HUD Act of 1968; 24 CFR 135)

(a) The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

(b) The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the Part 135 regulations.

(c) The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of Section 3 apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

(d) The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.

(e) The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR Part 135.

(f) Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

Appendix B

Section 3 Contract Non-Compliance Cure /Termination Processes

This language is a component of contract compliance with the work to which you are responding in this solicitation. The full requirements are provided in the Section 3 Clause found elsewhere in this package and in DCA's Section 3 Policy for Covered HUD Funded Activities.

Any recipient, sub-recipient or contractor claiming Preference **must be in compliance prior to issuance of a notice to proceed by DCA, recipient, sub-recipient, or contractor based on the policies established for the applicable DCA funding program. This preference can be met by any of the three qualifications:**

1. Resident Owned Businesses (ROBs) owned and operated at 51% by Section 3 Residents.
2. Businesses that employ Section 3 residents at no less than 30% of the contractors aggregate full time staff.
3. Contractors that at the time of bid show evidence (meaning the specific name and preference met) of their intent to award no less than 25% of their total award to Section 3 business concerns.

The recipient, sub-recipient or contractor must maintain compliance throughout the life of the contract. The contractor understands and agrees that a compliance management firm may be used to conduct routine and certified payroll reviews to ensure compliance. The Contractor agrees to provide the payroll data in an Excel or Word format each time the payroll is processed throughout the contract.

Failure to meet the Section 3 requirements will result in penalties up to and including contract termination. Any contractor triggering the regulation by doing any hiring or contracting once they are awarded the contract through execution must comply with the Section 3 requirements by executing the efforts on their Certification and Action Plan in accordance with DCA's Section 3 Policy.

DCA, the recipient, sub-recipient or contractor shall execute these remedies to achieve compliance in this order:

NON-COMPLIANCE CURE PROCESS

A. Based on the first observation or report of non-compliance with Section 3, the recipient, sub-recipient or contractor will be sent an e-mail by the compliance manager notifying them of their non-compliance issue. The recipient, sub-recipient or contractor will have until the next payroll or 10 business days, whichever is less, to bring the contract into compliance and/or justify in writing why they cannot meet compliance requirements.

B. DCA, the recipient, sub-recipient or contractor must render a response to the violating party within 10 business days of receipt of the violating party's letter of reason for non-compliance. If DCA, the recipient, sub-recipient, or the contractor deems the reason to

be unacceptable, at its option, DCA, the recipient, sub-recipient, or the contractor can extend the response period one time for up to 5 business days to allow the violating party to identify and secure other compliance options.

NON-COMPLIANCE TERMINATION PROCESS

If the violating party fails to take any corrective action to bring the contract into compliance within the allotted time, or DCA, the recipient, sub-recipient, or the contractor rejects any of the corrective plans and justifications for non-compliance, DCA, the recipient, sub-recipient, or the contractor will either terminate the contract immediately or impose liquidated damages equal to $100 a day for every day out of compliance. At DCA's determination, any liquidated damages received must be paid to the recipient, sub-recipient or DCA, at DCA's determination, and be used to promote economic opportunities for Section 3 Residents and Business Concerns.

DCA, the recipient, sub-recipient, or the contractor will hold **all funds due to the violating party until such time that a financial workout is completed**.

Additionally the violating party may be banned by DCA, the recipient, sub-recipient, and the contractor on future HUD funded projects.

Appendix C
Section 3
Forms

The following Section 3 forms must be completed and returned as instructed. Failure to return these forms with your bid/proposal may disqualify you from this contract opportunity.

Section 3 Self Certification and Action Plan (pages 8 - 10)

Previous Section 3 Compliance Certification (page 11)

Assurance of Compliance Certification (page 12)

Preliminary Statement of Work Force Needs (pages 13-15)

Georgia Department of Community Affairs
Required Submittal - Section 3 Self-Certification and Action Plan

All firms and individuals intending to do business with DCA, its recipients, sub-recipients and contractors MUST complete and submit this Action Plan and submit it with the bid, offer, or proposal in order to claim a preference on any contract or prior to award of a contract exceeding $100,000 if no preference is claimed. ***For contracts exceeding $100,000, this document (signed, and notarized) must be satisfactorily completed to be eligible for award.***

Business Name:		
D.B.A. (if different from above):		
Address:	City:	State/Zip:
Business Phone: ( )	Fax: ( )	
E-Mail:	Business Website:	
Federal Employer Identification Number:	Owner Social Security Number (if no EIN):	
Contact Person & Title:	Contact Phone:	

Trade Description:

☐ Carpentry	☐ Heating (HVAC)	☐ Electrical	☐ Painting
☐ Masonry Restoration	☐ Asbestos	☐ Plumbing	☐ Roofing
☐ Lead (Abatement)	☐ General Contractor	☐ Concrete	☐ Ironwork
☐ Carpet/Flooring	☐ Rubbish Removal/Hauling	☐ Appraisal Services	☐ Landscaping
☐ Demolition	☐ Other:		

Date Business was established (MM/DD/YYYY): _____

Type of Business (Check One): ☐Corporation ☐ Partnership ☐ Sole Proprietorship
☐ Limited Liability Corporation (LLC) ☐ Limited Liability Partnership (LLP) ☐ Joint Venture
☐ Other (Describe):

_____

_____

Number of employees: Full-time: _____ Part-time: _____ Contract: _____ **Total:** _____

Section 3 employees: Full-time: _____ Part-time: _____ Contract: _____ **Total:** _____

I am Certifying as a Section 3 Business Concern and requesting Preference accordingly (Select only One Option):

Option 1

☐ A business claiming status as a Section 3 Resident-Owned Business Concern (ROB) entity:

_____Initial here to confirm selection of this option

Option 2

☐ A business claiming Section 3 status, because at least 30% of the existing or newly hired workforce for this specific contract will be Section 3 residents throughout the entire contract period. If a Prime or General Contractor is electing this option, the 30% employment requirement will be for the entire project including all the sub-contractors' employees:

Check all methods you will employ to secure Section 3 Residents/Persons

Posting the position in community sources that are generally available to low income residents and the general public is a standard requirement. **Check at least three (3) methods you will employ:**

☐ The local community newspaper
☐ The most widely distributed newspaper
☐ Company or agency website
☐ The management office of the local housing authority, or homeless service agency, or local low income housing community
☐ Local Workforce Board (i.e., Department of Labor)
☐ Local office of the Georgia Division of Family and Children Services
☐ Local office of the Georgia Department of Public Health
☐ Dodge Room http://www.construction.com/dodge/dodge.asp
☐ Other locations identified below and subject to DCA approval:

_____

_____

_____Initial here to confirm selection of this option

I anticipate my total number of employees for this contract to be ____ and _____ will be qualified Section 3 Residents/persons.

Option 3

☐ A business claiming Section 3 status by subcontracting 25% of the dollar award to qualified Section 3 Business:

Attach a list of intended subcontract Section 3 business(es) with subcontract amount.
Attach certification & all supporting documentation for each planned subcontract Section 3 Business.

_____Initial here to confirm selection of this option

I am NOT Requesting Preference under Section 3:

☐ *I am **NOT** certifying as a qualified Section 3 Business Concern and I am not requesting a preference.* However ***if*** *I do trigger the regulation by doing any sub-contracting or hiring, I will comply by meeting all requirements of DCA's Section 3 policy and am* committing to do the outreach as specified below.

Check all methods you will employ to secure Section 3 Residents/Businesses

Posting the position/contract opportunity in community sources that are generally available to low income residents and Section 3 Businesses and the general public is a standard requirement. **Check at least three (3) methods you will employ:**

- ☐ The local community newspaper
- ☐ The most widely distributed newspaper
- ☐ Company or agency website
- ☐ The management office of the local housing authority, or homeless service agency, or local low income housing community
- ☐ Local Workforce Board (i.e., Department of Labor)
- ☐ Local office of the Georgia Division of Family and Children Services
- ☐ Local office of the Georgia Department of Public Health
- ☐ Dodge Room http://www.construction.com/dodge/dodge.asp
- ☐ Other locations identified below and subject to DCA approval:

_____

_____

_____Initial here to confirm selection of this option

Signature: _____

Printed/Typed Name:_____

Title:_____

Date:_____

Notarial Affidavit

Sworn to and subscribed before me this _____ day of _____, 20_____.

_____

Signature of Notary Public

_____

Printed Name of Notary Public

Commission Expiration Date: _____

(Notarial Seal)

Georgia Department of Community Affairs
Required Submittal - Previous Section 3 Compliance Certification

Name of Business: _____

Address of Business: _____

Type of Business (Check One): ☐ Corporation ☐ Partnership

☐ Sole Proprietorship ☐ Other

Business Activity: _____

All firms and individuals intending to do business with DCA, its recpients, sub-recipients, or contractors **MUST** complete and submit this certification of prior compliance prior to award of any contract exceeding $100,000. Please check the appropriate line box below and sign and date the form.

1. I am certifying that I have complied with the HUD Section 3 Regulations, when triggered by new hiring or contracting opportunities, in my past contracts **when required** by the recipient, sub-recipient or contractor by either:

i. Certifying as Resident Owned Business (ROB); or,
ii. Employing Section 3 residents for at least 30% of the newly hired workforce; or,
iii. Subcontracting 25% of the total dollar award to a qualified Section 3 Business; or,
iv. Hiring or contracting to the "greatest extent feasible" with Section 3 Residents or Section 3 Businesses.

☐ Check this box

2. I have never done any HUD funded contracting.

☐ Check this box

3. I completed HUD Section 3 covered contracts in the past three years but the regulation was not triggered because either there were no new hires on the contract(s) and/or I did not do any new contracting or subcontracting.

☐ Check this box

Signature: _____
Print Name: _____
Title: _____

Required Submittal - Assurance of Compliance Certification
Section 3 Action Plan
Housing and Urban Development Act of 1968
(12 U.S.C. 1701 U)

Contract/Solicitation Name or Number:

_____

DCA Funding Program:_____

Entity Receiving DCA Funding Award:_____

Purpose: To ensure that regulations promulgated under 24 CFR Part 135 Employment Opportunities for Businesses and Lower Income Persons in Connection with Assisted Projects and the Section 3 Policy of DCA, its recipients, sub-recipients and contractors to the greatest extent feasible is adhered to, and to serve as the "assurance of compliance" certification and action plan as required in the bid documents, supplemental general conditions, and required forms for the contract for any HUD work funded by DCA.

Description of the project's work detail: The project work will be as listed in the final scope of work in the contract with DCA, its recipients, sub-recipients and contractors including any change orders. List all known subcontractors below:

Subcontractor(s): _____

Subcontractor(s): _____

Subcontractor(s): _____

Subcontractor(s): _____

Subcontractor(s): _____

Subcontractor(s): _____

Subcontractor(s): _____

Subcontractor(s): _____

Use an additional sheet if required.

Note: If subcontractors are unknown at this time, print UNKNOWN on the line above. Also, the contractor must notify DCA or recipient or sub-recipient if subcontractors are added or changed during the contract. Any changes to this certification requires a resubmission of this form to DCA or recipient or sub-recipient.

Preliminary Statement for Work Force Needs:

DCA intends to meet Section 3 compliance at the highest level and it is our intent to identify any short-term and long-term employment or contracting opportunities for qualified Section 3 persons and Business Concerns during the course of the contract funded by DCA via its recipients or sub-recipients and contractors. Please list the status of all planned employment positions and opportunities for this contract. **Preference for all opportunities must be given to low and very low-income residents if they qualify. If awarded a contract,** regardless of whether your firm has elected a preference, **you are <u>required</u> to provide a list of your aggregate workforce on this project. Any changes to that workforce during the project will constitute NEW hires. You must notify DCA, its recipient, sub-recipient or contractor (respectively) overseeing your contract of any new hire opportunities that arise during the life of your contract.** The a*nticipated workforce list may be provided on a separate sheet or in a different format.*

List All Employees	**Date Hired**	**Section 3 Resident (Yes/No)**	**Job Title/Trade**	**Salary Range**
Name: Address: City, ZIP:				
Name: Address: City, Zip Code:				
Name: Address: City, Zip Code:				
Name: Address: City, Zip Code:				

Use additional pages as needed.

"To the Greatest Extent Feasible":

The Contractor has identified ___ # of **OPEN** positions with respect to this contract. The positions are filled by the _____ (Position title) of the Contractor.

Should the scope of work or duties of the contractor change to a degree requiring a modification of the work force needs, the contractor shall put forth a reasonable effort to fill vacant positions with eligible Section 3 residents.

Documentation of "To the Greatest Extent Feasible":

The contractor will work with DCA, its recipients, sub-recipients, and contractors staff to notify residents of any opportunities afforded under the contract. The contractor will partner with DCA, its recipients, sub-recipients, and contractors by giving preference of any employment opportunities to the Section 3 persons or businesses.

The contractor shall recruit or attempt to recruit from the Section 3 area the necessary number of low-income and very low-income residents and Section 3 businesses, as applicable. The contractor must also document their recruiting efforts and any impediments to compliance with DCA's Section 3 policy and the requirements of this solicitation package. This documentation must be submitted to the recipient or sub-recipient.

1. DCA, its sub-recipients and contractors shall: Maintain a list of all low-income area residents who have applied, either on their own or from referral from any source, and employ such person if otherwise eligible and if a trainee vacancy exists.
2. Conduct solicitation in accordance with DCA's Section 3 policy and the requirements outlined in the solicitation package.

The contractor shall review all employment applications and determine if low-income and very low-income residents or Section 3 businesses meet minimum hiring or contracting qualifications. If these applicants meet such minimum qualifications, but are not hired due to lack of employment opportunities or for other reasons, they will be placed on a priority list and offered positions/contracts upon the occurrence of the first available appropriate opening.

Utilization of Section 3 Businesses Located Within the County:

The recipient, sub-recipient or contractor does ___ does not ___ intend to subcontract any of the work identified in the scope of work cited in the bid specifications, scope of work or General Conditions. Should the scope of work or needs of the contractor change, the contractor shall, to the greatest extent feasible, assure that subcontracts be awarded to business concerns within the Section 3 covered area, or to business concerns owned in the substantial part (at least 51%) by persons residing in the Section 3 covered area.

Record Keeping:
The recipient, sub-recipient, contractor or subcontractor, as applicable, shall maintain on file all records related to employment and job training of low-income and very low-income residents or other such records, advertisements, legal notices, brochures, flyers, publications, assurances of compliance from sub-contractors, etc., in connection with this contract. If a report is needed in the future, the recipient,

sub-recipient, contractor or subcontractor, as applicable, agrees to provide all records upon request. The contractor shall, upon request, provide such records or copies of records to HUD, DCA, their recipients, sub-recipients, contractors, staff, or agents. Records shall be maintained for at least three (3) years after the close of the contract.

Reports:
The recipient, sub-recipient or contractor shall provide reports as required in connection with the contractor specifications. All certified and regular payrolls shall clearly detail which employees qualify under Section 3.

Certification:
The recipient, sub-recipient or contractor will certify that any vacant employment positions, including training positions that filled:

1) After the recipient, sub-recipient or contractor is selected but before the contract is executed, and
2) With persons other than those to who the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the subcontractor's obligations under 24 CFR Part 135.

Grievance and Compliance:
The recipient, sub-recipient, contractor or subcontractor hereby acknowledges that they understand that any low-income and very low-income resident of the project area, for him/her or as representatives of persons similarly situated, seeking employment or job training opportunities in the project area, or any eligible business concerns seeking contract opportunities may file a grievance if efforts to the greatest extent feasible were not executed. The grievance must be filed with HUD not later than one hundred eighty (180) calendar days from the date of the action (or omission) upon which the grievance is based.

I attest that the information on the preceding pages is true and correct.

_____ _____

Signature Date

_____

Print Name

_____

Title

RESIDENT SECTION 3 SELF-CERTIFICATION AND SKILLS DATA FORM

The purpose of this form is to comply with HUD Section 3 administration and certification regulations.

Certification for Section 3 Residents or other Low-Income Persons Seeking Employment, Training or Contracting

I, _____, am a legal resident of the United States and meet the income eligibility and federal guidelines for a Section 3 Resident as defined within this Certification.

My home address is: _____
Must be a **Street** address not a P O Box # Apt Number

_____
City State Zip Home # Cell #

_____
County of Residence

Graduated High School or GED (month/year): _____ I Read and Speak English Fluently: Yes or No

Attended College, Trade, or Technical School: Yes or No Graduated? Yes or No Year Graduated:_____

Check the Skills, Trades, and/or Professions in which you have been employed or contracted to do for others:

☐Drywall Hanging	☐Drywall Finishing	☐Interior Painting	☐Framing
☐HVAC	☐Electrical	☐Interior Plumbing	☐Exterior Plumbing
☐Siding	☐Cabinet Hanging	☐Door Replacement	☐Trim/Carpentry
☐Stucco	☐Window/Door Replacement	☐Construction Cleaning	☐Exterior Framing
☐Data Entry	☐Receptionist	☐ Sales	☐Telephone Customer Service
☐Administrative	☐Teaching/Training	☐Personal Care Aide	☐Landscaping
☐CDL License	☐Roofing	☐Concrete/Asphalt Work	☐Heavy Equipment Operator
☐Fencing	☐Metal/Steel Work	☐Welding	
☐Other		☐Other	

I am certifying as a Section 3 Resident**:** ☐ **Person seeking Training** **or** ☐ **Person seeking employment**

(Check all that apply):

☐ I am a public housing or section 8 Leaseholder ☐ I live in the service area

My total annual household income is $_____. There are a total of _____ people living in my household.

I certify that all of the information given on this Certification is true and correct. If found to be inaccurate, I understand that I may be disqualified as an applicant and/or a certified Section 3 individual which may be grounds for termination of training, employment, or contracts that resulted from this certification. I attest under penalty of perjury that my total household income annually, based on my total household size as listed above is at or below the income amount for that specific size at the time of this document is being signed and notarized. I understand that proof of this statement may be requested in the future.

_____ _____
Signature Date

Printed Name: _____

Purpose:
The purpose of Section 3 of the Housing and Urban Development of 1968 (12 U.S.C. 1701u) (Section 3) is to ensure that employment and other economic and business opportunities generated by HUD Financial Assistance shall be directed to the Authority Residents and other low- and very low-income persons, particularly those who are recipients of government housing assistance and to business concerns which provide economic opportunities to Residents and other low- and very low-income persons.

Section 3 resident means:

(1) A public housing resident; or

(2) An individual who resides in the metropolitan area or non-metropolitan county in which the section 3 covered assistance is expended, and who is:
   I. A low-income person, as this term is defined in section 3(b)(2) of the 1937 Act (42 U.S.C. 1437a(b)(2)). Section 3(b)(2) of the 1937 Act defines this term to mean families (including single persons) whose incomes do not exceed 80% of the median family income for the area, as determined by the Secretary, with adjustments for smaller and larger families, except that the Secretary may establish income ceilings higher or lower than 80% of the median for the area on the basis of the Secretary's findings that such variations are necessary because of prevailing levels of construction costs or unusually high or low-income families; or

   II. A very low-income person, as this term is defined in section 3(b)(2) of the 1937 Act (42 U.S.C. 1437a(b)(2). Section 3(b)(2) of the 1937 Act (42 U.S.C. 1437a(b)(2) defines this term to mean families (including single persons) whose incomes do not exceed 50% of the median family income for the area, as determined by the Secretary with adjustments made for smaller or larger families, except that the Secretary may establish income ceilings higher or lower than 50% of the median for the area on the basis of the Secretary's findings that such variations are necessary because of unusually high or low family incomes.

(3) A person seeking the training and employment preference provided by section 3 bears the responsibility of providing evidence (if requested) that the person is eligible for the preference.

Service area means the geographical area in which the persons benefiting from the Section 3-covered project reside.

The figures below represent very low-income families; bottom figures represent low-income families. The most recent income limits established for each county may be found at:
http://www.hud.gov/offices/cpd/affordablehousing/programs/home/limits/income/.

Subrecipient or Contractor to Insert 2013 Income Limits for Project Location

FY 20XX Income Limit Area	Median Income	FY 20XX Income Limit Category	1 Person	2 Person	3 Person	4 Person	5 Person	6 Person	7 Person	8 Person
		Very Low (50%) Income Limits								
		Low (80%) Income Limits								

RESIDENT SECTION 3 SELF-CERTIFICATION
AND SKILLS DATA FORM
AFFADAVIT

STATE OF _____

County of _____

I, _____, a Notary Public of the City/County of _____, State of _____, do hereby certify that, _____, whose name is signed to the writing above bearing date on the _____ Day of _____, 20_____, has acknowledged the same before me in my State aforesaid.

Given under my hand and official seal, this the _____ day of _____, 20___.

_____
Signature of Notary Public

_____
Printed Name of Notary Public

Commission Expiration Date: _____

(Notarial Seal)

SECTION 3 BUSINESS CONCERN SELF CERTIFICATION

The Georgia Department of Community Affairs (DCA) is seeking to extend the benefits of and to promote compliance with Section 3 by identifying Section 3 Business Concerns and targeting Section 3 Business Concerns for business opportunities, events and educational programs.

In an effort to comply with Federal Section 3 Regulations which promote contract, employment and training opportunities for State of Georgia residents, DCA has instituted a Section 3 Self Certification process.

Businesses seeking certification must complete and submit the attached Section 3 Business Concern Self Certification forms as follow:

1. If your company is qualified because it is owned (51% or more) by one or more Section 3 residents, then complete **Form A, "Section 3 Business Concern – Resident Business Owner(s) Verification";**

   OR

2. If your company is qualified because 30% or more of its full time permanent workforce are Section 3 Residents*, then complete **Form B, "Section 3 Business Concern – 30% + Workforce".**

   OR

3. If more than 25% of all subcontract work to be awarded shall be performed by Section 3 business concerns as described above, then complete **Form C, "Section 3 Business Concern-Subcontractor".**

Please answer all questions, sign the completed forms, and notarize the affidavit.

Completed packets must be returned to the sub-recipient or contractor as follows:

Name of sub-recipient/contractor: _____
Attn: _____
Mailing Address: _____
_____

If you have any questions or require assistance, please contact:

Name: _____
Phone Number: _____
Email Address: _____

Form A
SECTION 3 BUSINESS CONCERN
Resident Business Owner(s) Verification

A business can be certified as a Section 3 Business Concern if the business is owned (51% or more) by Georgia Section 3 Resident(s).

Name of Owner: _____

Home Street Address: _____

Home City, County, & Zip Code:_____

Name of Business: _____

Percentage of Ownership: _____%

Low- to – Moderate Income (80% of Median)
Check the appropriate box for your family size and income *if your total household income is equal to or less than the Gross Household Income Maximum amount listed for your appropriate household size*:

Check Box	# of Persons in Household	Gross Household Income Maximum
	1 Individual	
	2 Individuals	
	3 Individuals	
	4 Individuals	
	5 Individuals	
	6 Individuals	
	7 Individuals	
	8 Individuals	

(Effective _____, 2013)

If the business is owned by more than one Section 3 resident, list each owner below and each should submit a separate Resident Business Owner Verification Form (Form A).

Please list additional Section 3 Resident owners of the business below:

Name	Position	% Percentage of Ownership

I certify that I am a resident of the State of Georgia and my total household income last year was not more than the amount shown above for my family size. I further certify the information provided is true and accurate and agree to provide upon request, documents verifying the information submitted to qualify as a Section 3 Business Concern.

Print: _____ Signature: _____ Date: _____

Form B

SECTION 3 BUSINESS CONCERN

30% + Workforce

A business can be certified as a Section 3 Business Concern if at least 30% of its permanent, full-time employees are Section 3 residents, or were Section 3 residents within three years of the date of the first employment with the business. You may also certify as a Section 3 Business Concern if, for this award, you will hire Section 3 residents for at least 30% of your permanent, full-time employees for this specific project. For your firm to be eligible UNDER THIS CRITERIA, you must provide the following information for **all permanent, full-time employees.**

You may attach additional copies of this chart, if necessary.

List All Employees	**Date Hired**	**Section 3 Resident**	**Job Title/Trade**	**Salary Range**
Name: Address: City/Zip:				
Name: Address: City/Zip:				
Name: Address: City/Zip:				
Name: Address: City/Zip:				
Name: Address: City/Zip:				
Total Number of Employees:	**Full-Time:** _____	**Part-Time:** _____	**Contract:** _____	
Number of Section 3 Residents:				
Section 3 % of Total Workforce:				

I certify that the information provided is true and accurate and agree to provide upon request, any/all documents verifying the information submitted to qualify as a Section 3 Business Concern.

Print Name: _____

Title: _____

Company Name: _____

Signature: _____

Date: _____

Form C
SECTION 3 BUSINESS CONCERN
Subcontractor Awarded

A business can be certified as a Section 3 Business Concern if the firm makes a commitment to subcontract in excess of twenty-five percent (25%) of the total amount of subcontracts to be awarded to: A) Section 3 Resident Owned Businesses; or B) Businesses for which 30% or more of their permanent full-time workforce is comprised of Section 3 Residents.

List all work performed by Section 3 Business Concerns Identified (This Form is to be updated as Section 3 Business Concerns are awarded through the completion of the project):

Name of Business	Qualifying Conditions	Total Contract Award

All identified Section 3 Business Concerns listed above are required to complete a Section 3 Self Certification Application (Forms A – C as appropriate) or provide proof of Section 3 Certification status. Attach all required documents to this form.

I certify that the information provided is true and accurate and agree to provide upon request, any/all documents verifying the information submitted to qualify as a Section 3 business concern.

Print Name: _____

Title: _____

Company Name: _____

Signature: _____

Date: _____

Oconee County Insurance Requirements

The following recommended minimum insurance limits apply to vendors doing business with the Oconee County Board of Commissioners. The Standard Insurance Limits are recommended for all procurements of goods and ancillary services. The specific requirements for vendors providing high risk services supersede the Standard Insurance Limits. Coverage types and limits are recommended minimums and should be increased as appropriate based on contract value and potential risks to the County.

To achieve the appropriate coverage levels, a combination of a specific policy written with an umbrella policy covering liabilities above stated limits is acceptable. [1]

Important:

All policies shall contain a provision that coverage afforded under the policies shall not be canceled, changed, allowed to lapse, or allowed to expire until thirty (30) calendar days after written notice has been given to the certificate holder on the certificate of insurance. All such coverage shall remain in full force and effect during the initial term of the agreement and any renewal or extension thereof.

All policies must be issued by an insurance company licensed to do business in the State of Georgia, with a minimum AM Best rating of A-, and signed by an authorized agent.

[1] For example: If appropriate limits are $2 million per occurrence and $2 million aggregate, acceptable coverage would include a specific policy covering $1 million per occurrence and $1 million aggregate written with an umbrella policy for an additional $1 million.

- Certificate Holder should read:
  Oconee County Board of Commissioners
  23 North Main Street
  Watkinsville, Georgia 30677

- Certificates of Insurance, and any subsequent renewals, must reference specific bid/contract by projected name and project/bid number.

- Contractor shall incorporate a copy of the insurance requirements as herein provided in each and every subcontract with each and every Subcontractor in any tier, and shall require each and every Subcontractor of any tier to comply with all such requirements. Contractor agrees that if for any reason Subcontractor fails to procure and maintain insurance as required, all such required Insurance shall be procured and maintained by Contractor at Contractor's expense.

- No Contractor or Subcontractor shall commence any work of any kind under this Contract until all insurance requirements contained in this Contract have been complied with and until evidence of such compliance satisfactory to Oconee County as to form and content has been filed with Oconee County.

- Compliance by the Contractor and all subcontractors with the foregoing requirements as to carrying insurance shall not relieve the Contractor and all Subcontractors of their liability provisions of the Contract.

- The Contractor and all Subcontractors are to comply with the Occupational Safety and Health Act of 1970, Public Law 91-956, and any other laws that may apply to this Contract.

- The Contractor shall at a minimum apply risk management practices accepted by the contractors' industry.

A. STANDARD INSURANCE LIMITS FOR GOODS AND ANCILLARY SERVICES

Workers Compensation (WC):	**Statutory Limits – required in all contracts**
Bodily injury by Accident – each employee	$ 100,000
Bodily injury by Disease – each employee	$ 100,000
Bodily Injury by Disease – policy limit	$ 500,000
Commercial General Liability (CGL):	
Each Occurrence Limit	$ 1,000,000
Personal & Advertising Injury Limit	$ 1,000,000
General Aggregate Limit	$ 2,000,000
Products/Completed Ops. Aggregate Limit	$ 2,000,000
Automobile Liability	
Combined Single Limit	$ 1,000,000

B. HIGH RISK INSURANCE LIMITS

1. **Ambulance Service:**

Workers Compensation (WC):	**Required for all Contracts**
	NO EXEMPTIONS
Commercial General Liability (CGL):	

Each Occurrence Limit	$ 1,000,000
Personal & Advertising Injury Limit	$ 1,000,000
General Aggregate Limit	$ 2,000,000
Products/Completed Ops. Aggregate Limit	$ 2,000,000

Automobile Liability

Combined Single Limit	$ 3,000,000
Professional liability	$ 3,000,000

Additional Insured: The vendor shall add the "Oconee County Board of Commissioners, its officers, employees and agents" as an additional insured under the commercial general, automobile, and professional liability policies.

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2. **Asbestos Abatement:**

Workers Compensation (WC): **Required for all Contracts**

NO EXEMPTIONS

Commercial General Liability (CGL):

Each Occurrence Limit	$ 1,000,000
Personal & Advertising Injury Limit	$ 1,000,000
General Aggregate Limit	$ 2,000,000
Products/Completed Ops. Aggregate Limit	$ 2,000,000

Automobile Liability

Combined Single Limit	$ 1,000,000

Contractor's Pollution Liability (with 1 year extended reporting period)

Each Occurrence	$ 3,000,000

Additional Insured: The vendor shall add the "Oconee County Board of Commissioners, its officers, employees and agents" as an additional insured under the commercial general, automobile, and contractor's pollution liability policies.

3. **Building Remodeling and Construction:** This includes all aspects of building work, including, but not limited to, ducts, electrical, HVAC, painting, plumbing, roofing, etc.

Workers Compensation (WC):	**Required for all Contracts** **NO EXEMPTIONS**
Commercial General Liability (CGL):	
Each Occurrence Limit	$ 1,000,000
Personal & Advertising Injury Limit	$ 1,000,000
General Aggregate Limit	$ 2,000,000 (per project)
Products/Completed Ops. Aggregate Limit	$ 2,000,000
Automobile Liability	
Combined Single Limit	$ 1,000,000
Property Coverage or Builders Risk Policy	Equal to or greater than the existing building limit if performing renovations.

If hazardous substances are involved:

Contractor's Pollution Liability (with 1 year extended reporting period)	
Each Occurrence	$ 1,000,000
Aggregate	$ 2,000,000

Other specific coverage requirements / levels may exist depending on project size, scope, and type.

Additional Insured: The vendor shall add the "Oconee County Board of Commissioners, its officers, employees and agents" as an additional insured under the commercial general, automobile, and contractor's pollution liability policies.

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4. **Consulting Services:**

Workers Compensation (WC):	**Required for all Contracts** **NO EXEMPTIONS**

Commercial General Liability (CGL):

Each Occurrence Limit	$ 1,000,000
Personal & Advertising Injury Limit	$ 1,000,000
General Aggregate Limit	$ 2,000,000
Products/Completed Ops. Aggregate Limit	$ 2,000,000

Automobile Liability

Combined Single Limit	$ 1,000,000

Professional Liability Type and limits defer by consulting type

Additional Insured: The vendor shall add the "Oconee County Board of Commissioners, its officers, employees and agents" as an additional insured under the commercial general, automobile, and professional liability policies.

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5. **Custodial Services:**

Workers Compensation (WC): **Required for all Contracts**

NO EXEMPTIONS

Commercial General Liability (CGL):

Each Occurrence Limit	$1,000,000
Personal & Advertising Injury Limit	$ 1,000,000
General Aggregate Limit	$ 2,000,000
Products/Completed Ops. Aggregate Limit	$ 2,000,000

Automobile Liability

Combined Single Limit	$ 1,000,000

Additional Insured: The vendor shall add the "Oconee County Board of Commissioners, its officers, employees and agents" as an additional insured under the commercial general, automobile and professional liability policies.

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6. **Elevator Maintenance** (includes all passenger and freight elevators):

Workers Compensation (WC):	**Required for all Contracts** **NO EXEMPTIONS**
Commercial General Liability (CGL):	
Each Occurrence Limit	$ 1,000,000
Personal & Advertising Injury Limit	$ 1,000,000
General Aggregate Limit	$ 2,000,000
Products/Completed Ops. Aggregate Limit	$ 2,000,000
Automobile Liability	
Combined Single Limit	$ 1,000,000

Additional Insured: The vendor shall add the "Oconee County Board of Commissioners, its officers, employees and agents" as an additional insured under the commercial general and automobile liability policies.

---

7. **Food Service:**

Workers Compensation (WC):	**Required for all Contracts** **NO EXEMPTIONS**
Commercial General Liability (CGL):	
Each Occurrence Limit	$ 1,000,000
Personal & Advertising Injury Limit	$ 1,000,000
General Aggregate Limit	$ 2,000,000
Products/Completed Ops. Aggregate Limit	$ 2,000,000
Liquor Liability (When applicable)	$ 1,000,000
Automobile Liability	
Combined Single Limit	$ 1,000,000

Additional Insured: The vendor shall add the "Oconee County Board of Commissioners, its officers, employees and agents" as an additional insured under the commercial general, automobile, and liquor liability policies.

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8. **Information Technology:** See Standard Insurance Limits and Professional Liability insurance which includes Errors and Omissions coverage.

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9. **Landscaping / Lawn Care:**

Workers Compensation (WC):	**Required for all Contracts**
	NO EXEMPTIONS
Commercial General Liability (CGL):	
Each Occurrence Limit	$ 1,000,000
Personal & Advertising Injury Limit	$ 1,000,000
General Aggregate Limit	$ 2,000,000
Products/Completed Ops. Aggregate Limit	$ 2,000,000
Automobile Liability	
Combined Single Limit	$ 1,000,000

If herbicide, fungicide, pesticide or other chemical application is involved:

Environmental Impairment Liability (with 1 year extended reporting period)

Each Occurrence	$ 1,000,000
Aggregate	$ 2,000,000

Additional Insured: The vendor shall add the "Oconee County Board of Commissioners, its officers, employees and agents" as an additional insured under the commercial general, automobile, and environmental impairment liability policies.

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10. **Medical/Therapist Services** (including optical and laboratory): This includes all contracted medical services, including but not limited to, assisted physician services, laboratory equipment maintenance, and patient testing.

Workers Compensation (WC):	**Required for all Contracts** **NO EXEMPTIONS**
Commercial General Liability (CGL):	
Each Occurrence Limit	$ 1,000,000
Personal & Advertising Injury Limit	$ 1,000,000
General Aggregate Limit	$ 2,000,000
Products/Completed Ops. Aggregate Limit	$ 2,000,000
Automobile Liability	
Combined Single Limit	$ 1,000,000
Professional liability (malpractice)	$ 3,000,000

Additional Insured: The vendor shall add the "Oconee County Board of Commissioners, its officers, employees and agents" as an additional insured under the commercial general, automobile, and professional liability policies.

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11. Pest Control:

Workers Compensation (WC):	**Required for all Contracts** **NO EXEMPTIONS**
Commercial General Liability (CGL):	
Each Occurrence Limit	$ 1,000,000
Personal & Advertising Injury Limit	$ 1,000,000
General Aggregate Limit	$ 2,000,000
Products/Completed Ops. Aggregate Limit	$ 2,000,000

Automobile Liability

Combined Single Limit $ 1,000,000

Environmental Impairment Liability (with 1 year extended reporting period)

Each Occurrence $ 1,000,000

Aggregate $ 2,000,000

Additional Insured: The vendor shall add the "Oconee County Board of Commissioners, its officers, employees and agents" as an additional insured under the commercial general, automobile, and professional environmental impairment liability policies.

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12. **Recreational Services:** This includes a broad range of contracted services, including, but not limited to, golf course management, amusement services, pyrotechnic display, camps and clinics not sponsored by the agency.

Workers Compensation (WC): **Required for all Contracts**

NO EXEMPTIONS

Commercial General Liability (CGL):

Each Occurrence Limit $ 1,000,000

Personal & Advertising Injury Limit $ 1,000,000

General Aggregate Limit $ 2,000,000

Products/Completed Ops. Aggregate Limit $ 2,000,000

Automobile Liability

Combined Single Limit $ 1,000,000

Umbrella Liability $ 2,000,000

Additional Insured: The vendor shall add the "Oconee County Board of Commissioners, its officers, employees and agents" as an additional insured under the commercial general and automobile liability policies.

---

13. **Refuse Transportation and Disposal**: See the **"Solid Waste Collection and Disposal Services of Oconee County, Georgia"** for insurance requirements. Document available upon request.

Additional Insured: The vendor shall add the "Oconee County Board of Commissioners, its officers, employees and agents" as an additional insured under the commercial general and contractor's pollution liability policies.

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14. Security:

Workers Compensation (WC):	**Required for all Contracts**
	NO EXEMPTIONS
Commercial General Liability (CGL):	
Each Occurrence Limit	$ 1,000,000
Personal & Advertising Injury Limit	$ 1,000,000
General Aggregate Limit	$ 2,000,000
Products/Completed Ops. Aggregate Limit	$ 2,000,000
Automobile Liability	
Combined Single Limit	$ 1,000,000
Professional Liability Insurance	$ 3,000,000

Additional Insured: The vendor shall add the "Oconee County Board of Commissioners, its officers, employees and agents" as an additional insured under the commercial general and professional liability policies.

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15. Staffing Services:

Workers Compensation (WC):	**Required for all Contracts**
	NO EXEMPTIONS
Commercial General Liability (CGL):	
Each Occurrence Limit	$ 1,000,000
Personal & Advertising Injury Limit	$ 1,000,000
General Aggregate Limit	$ 2,000,000
Products/Completed Ops. Aggregate Limit	$ 2,000,000

Automobile Liability

Combined Single Limit	$ 1,000,000

Additional Insured: The vendor shall add the “Oconee County Board of Commissioners, its officers, employees and agents” as an additional insured under the commercial general and automobile liability policies.

Brian P. Kemp
Governor

Georgia® Department of Community Affairs

Christopher Nunn
Commissioner

January 22, 2021

The Honorable John Daniell
Chair, Oconee County
23 N. Main Street
Watkinsville, GA 30677

Re: CDBG 20p-y-108-1-6151
Wage Decision Number GA210164, Mod 0

Dear Chairman Daniell:

In response to your request, enclosed is the Wage Decision applicable to the CDBG Project referenced above. It must be incorporated into the construction contract specifications before release to prospective bidders. The specifications must also include the Federal Labor Standards Provisions and other applicable contract clauses. These clauses can be obtained from the Office of Grant Administration upon request.

This Wage Decision is effective until a change or modification is issued by the US Department of Labor (DOL). If the change or modification is published by DOL less than 10 days before the bid opening, the requirement to use the modification may be waived if you find there is not sufficient time to notify all bidders of the modification, and a report of that finding is made part of the contract solicitation file. Please note that modifications or changes will not be automatically issued. You or your grant administrator must contact our Office 10 days prior to the bid opening to verify that the Wage Decision is still valid. Our Office will issue the appropriate Wage Decision, if needed, at that time.

Also enclosed are posters from the US Department of Labor and the US Occupational Safety and Health Administration. These posters, along with the subject Wage Decision, must be conspicuously displayed at the job site for review by workers at the site. Weekly payrolls and certifications must be submitted by the General Contractor and reviewed by your local contract administrator to verify that all laborers and mechanics engaged in the construction, including those employed by subcontractors, have been paid not less than the wage rates (including fringe benefits) required by the applicable Wage Decision.

Before the award of the construction contract, the contractor must be cleared by this Office to verify eligibility for an award of a federally assisted contract. Please return the enclosed "Notice of Contract Action" to this Office to advise us when the contract is awarded or construction started. Failure to submit the form may affect construction drawdowns.

If you have any questions or need additional assistance, please contact your CDBG Program Representative or I may be reached at (404) 679-3169.

Sincerely,

Cindi K. Bernhardt

Cindi K. Bernhardt
Office of Community Development

Enclosures
Cc: Stuart Swinea, NE GA RC
Malisa Thompson, DCA

Return to Index

Georgia Department of Community Affairs Office of Grant Administration 60 Executive Park South, NE Atlanta, Georgia 30329	Request for Determination and Response to Request (Davis-Bacon Act as amended and Related Statutes) Wage Determination under the Davis-Bacon and related act. (This decision is effective from the date of publication in the Federal Register without limitation as to time.)

Name, Address and Phone Number to Which a Copy of This Determination is to be Mailed (Other than Grant Recipient)		
Stuart Swinea	Oconee County	20p-y-108-1-6151
Name	CDBG Recipient (City/County)	Grant Number
305 Research Drive	John Daniell	Oconee County Senior Center
Street/Box	Name	Project Name
Athens, Georgia 30605	Chairman	Oconee County
City/State/Zip	Title (Mayor/County Commissioner)	County
sswinea@negrc.org	23 N Main Street	01/20/2021
E-mail Address/Telephone Number	Street/Box	Date of this Request
	Watkinsville, Georgia 30677	
	City/State/Zip	
	(706) 769-5120	
	Area Code/Phone Number	

Check Type of Work	Estimated Cost				
☐ Water/Sewer		Estimated Advertising Date:	04/01/2021	Estimated Date of Bid Opening:	05/03/2021
☐ Drainage					
☐ Street		Estimated Date of Contract Award:	06/01/2021	Estimated Construction Start Date:	06/14/2021
☑ Buildings	772,500.00				
Estimated Total Cost					

To Be Completed by Georgia Department of Community Affairs

Approving DCA Representative: Cindi Bernhardt

Wage Decision Number (s): GA210164, mod 0

"General Decision Number: GA20210164 01/01/2021

Superseded General Decision Number: GA20200164

State: Georgia

Construction Type: Building

Counties: Madison, Oconee and Oglethorpe Counties in Georgia.

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.95 for calendar year 2021 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.95 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/01/2021

BOIL0026-001 03/01/2018

	Rates	Fringes
BOILERMAKER	$ 28.97	22.39

ELEV0032-001 01/01/2020

	Rates	Fringes
ELEVATOR MECHANIC	$ 42.72	35.245

PAID HOLIDAYS:

a. New Year's Day, Memorial Day, Independence Day, Labor Day, Vetern's Day, Thanksgiving Day, the Friday after Thanksgiving, and Christmas Day.

b. Employer contributes 8% of regular hourly rate to vacation pay credit for employee who has worked in business more than 5 years; 6% for less than 5 years' service.

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* ENGI0926-001 07/01/2020

	Rates	Fringes
POWER EQUIPMENT OPERATOR: Backhoe/Excavator, Bobcat/Skid Loader/Skid Steer, Bulldozer, Forklift, and Loader	$ 23.24	13.83
Crane	$ 32.63	13.83
Oiler	$ 22.85	12.68

PLUM0072-032 08/01/2018

	Rates	Fringes
PIPEFITTER (Including HVAC Pipe and HVAC Electrical Temperature Control Installation)	$ 28.48	15.91
PLUMBER	$ 27.98	14.03

SHEE0085-007 07/01/2017

	Rates	Fringes
SHEET METAL WORKER (Including HVAC Duct Installation)	$ 31.54	13.58

SUGA2012-083 08/11/2012

	Rates	Fringes
BRICKLAYER	$ 16.00	0.00
CARPENTER	$ 16.63	0.00
CEMENT MASON/CONCRETE FINISHER	$ 18.50	0.00
ELECTRICIAN	$ 22.11	4.45
IRONWORKER, REINFORCING	$ 17.94	0.00
IRONWORKER, STRUCTURAL	$ 20.00	0.35
LABORER: Common or General	$ 13.38	0.00
LABORER: Mason Tender - Brick	$ 9.00	0.00
LABORER: Pipelayer	$ 12.00	0.23
OPERATOR: Grader/Blade	$ 17.52	0.00
PAINTER: Brush, Roller and Spray	$ 16.00	1.62
ROOFER	$ 10.76	0.00
TILE FINISHER	$ 10.31	0.00
TILE SETTER	$ 19.50	0.00

TRUCK DRIVER: Dump Truck.....$ 12.70 0.00

TRUCK DRIVER: Lowboy Truck.....$ 17.41 0.00

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

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

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

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing

this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

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

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

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

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the

Branch of Construction Wage Determinations. Write to:

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

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

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

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

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

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

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

==========

END OF GENERAL DECISION
"

NOTICE OF CONTRACT ACTION, PRIME CONTRACTORS

Community Development Block Grant

REPORT # _____

Attach itemized bid tabulation

Contract(s) No: _____
_____
_____
_____

Grantee: _____

Grant Number: _____

Submitted by: _____

Phone No: _____

Date Submitted: _____

RETURN TO:
CDBG Administrative Secretary
GA. Dept. of Community Affairs
60 Executive Park South, NE
Atlanta, Georgia 30329-2231

	Contract 1	Contract 2	Contract 3
1. Activity Number			
2. Architect/Engineer Name			
3. Description of Work			
4. Wage Dec.# / Mod. #			
5. Bid Date			
6. Date of Contract Execution			
7. Contract Amount			
8. Contractor			
Contractor Address			
Contractor Address			
9. Construction Start Date			
10. Estimated Completion Date			

INSTRUCTIONS:

1. Complete this form each time a contract is executed. This also applies to multiple contracts. Form should be submitted within 7 days of contract execution.
2. Include appropriate information for all contracts each time form is submitted.
3. Number reports beginning with #1. Mark last report "Final".
4. Submit "Request for Clearance of Prime Contractor" separately.
5. **Certified bid tabulation must be attached.**

V. 9.2018

EMPLOYEE RIGHTS

UNDER THE DAVIS-BACON ACT

FOR LABORERS AND MECHANICS EMPLOYED ON FEDERAL OR FEDERALLY ASSISTED CONSTRUCTION PROJECTS

PREVAILING WAGES

You must be paid not less than the wage rate listed in the Davis-Bacon Wage Decision posted with this Notice for the work you perform.

OVERTIME

You must be paid not less than one and one-half times your basic rate of pay for all hours worked over 40 in a work week. There are few exceptions.

ENFORCEMENT

Contract payments can be withheld to ensure workers receive wages and overtime pay due, and liquidated damages may apply if overtime pay requirements are not met. Davis-Bacon contract clauses allow contract termination and debarment of contractors from future federal contracts for up to three years. A contractor who falsifies certified payroll records or induces wage kickbacks may be subject to civil or criminal prosecution, fines and/or imprisonment.

APPRENTICES

Apprentice rates apply only to apprentices properly registered under approved Federal or State apprenticeship programs.

PROPER PAY

If you do not receive proper pay, or require further information on the applicable wages, contact the Contracting Officer listed below:

or contact the U.S. Department of Labor's Wage and Hour Division.

OSHA®
Occupational Safety and Health Administration
U.S. Department of Labor

Job Safety and Health
IT'S THE LAW!

All workers have the right to:

- A safe workplace.
- Raise a safety or health concern with your employer or OSHA, or report a work-related injury or illness, without being retaliated against.
- Receive information and training on job hazards, including all hazardous substances in your workplace.
- Request a confidential OSHA inspection of your workplace if you believe there are unsafe or unhealthy conditions. You have the right to have a representative contact OSHA on your behalf.
- Participate (or have your representative participate) in an OSHA inspection and speak in private to the inspector.
- File a complaint with OSHA within 30 days (by phone, online or by mail) if you have been retaliated against for using your rights.
- See any OSHA citations issued to your employer.
- Request copies of your medical records, tests that measure hazards in the workplace, and the workplace injury and illness log.

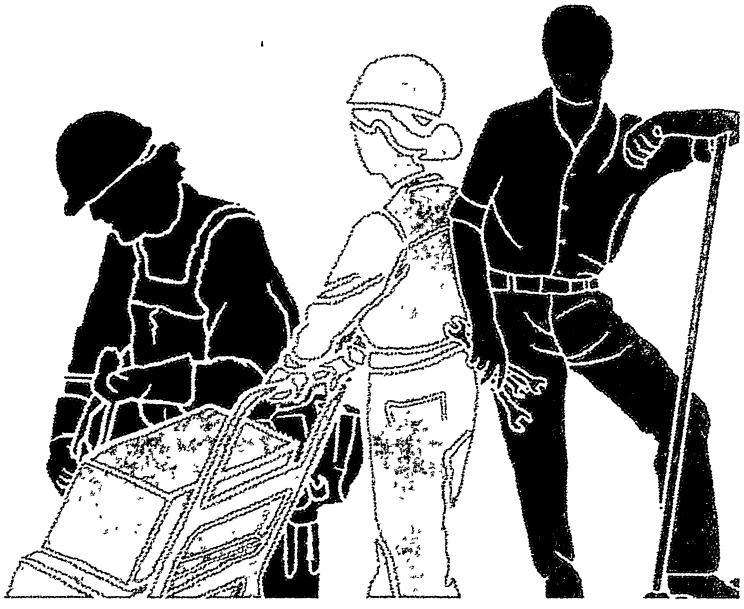
This poster is available free from OSHA.

Contact OSHA. We can help.

Employers must:

- Provide employees a workplace free from recognized hazards. It is illegal to retaliate against an employee for using any of their rights under the law, including raising a health and safety concern with you or with OSHA, or reporting a work-related injury or illness.
- Comply with all applicable OSHA standards.
- Notify OSHA within 8 hours of a workplace fatality or within 24 hours of any work-related inpatient hospitalization, amputation, or loss of an eye.
- Provide required training to all workers in a language and vocabulary they can understand.
- Prominently display this poster in the workplace.
- Post OSHA citations at or near the place of the alleged violations.

On-Site Consultation services are available to small and medium-sized employers, without citation or penalty, through OSHA-supported consultation programs in every state.



SECTION 004373 - PROPOSED SCHEDULE OF VALUES FORM

1.1 BID FORM SUPPLEMENT

A. A completed Proposed Schedule of Values form is required to be attached to the Bid Form.

1.2 PROPOSED SCHEDULE OF VALUES FORM

A. Proposed Schedule of Values Form: Provide a breakdown of the bid amount, including alternates, in enough detail to facilitate continued evaluation of bid. Coordinate with the Project Manual table of contents. Provide multiple line items for principal material and subcontract amounts in excess of [**five**] percent of the Contract Sum.

B. Arrange schedule of values using [**AIA Document G703-1992**] or other form providing complete breakdown of costs.

1. Copies of AIA standard forms may be obtained from the American Institute of Architects; https://www.aiacontracts.org/ library; (800) 942-7732.

END OF DOCUMENT 004373

SECTION 011113

SUMMARY OF THE WORK

1.1 RELATED DOCUMENTS

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

1.2 PROJECT DESCRIPTION

A. The Project consists of the construction of a 2,450 square foot addition to the existing Senior Center. The addition is a one-story building with slab-on-grade foundation, split-face concrete block structure with metal stud framing, steel bar joists metal deck, concrete, and membrane roofing and parapets. Refer to the drawings and project manual as prepared by CARTER WATKINS ASSOCIATES ARCHITECTS, INC. Contracting shall be by means of a General Contractor for Construction between one General Contractor and Burke County.

B. SPECIAL NOTES –

This project is funded, in part, by a Community Development Block Grant. All bidders should be in good standing with DCA and are to incorporate the enclosed Davis Bacon Wage rates into their bid amount.

1.3 CONTRACTORS USE OF PREMISES

A. General: Limit use of the premises only to construction activities in areas indicated.

1. Confine operations to areas within Construction limits to areas mutually agreed upon with the Owner. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.

2. Keep driveways and entrances serving the premises and the park grounds clean and available to the Owner. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

END OF SECTION

SECTION 01 21 13

ALLOWANCES

PART 1 - GENERAL

ALLOWANCES ARE AS FOLLOWS (IF ANY):

1. Hardware Allowance: (allowance to provide for the purchase of hardware materials only. Labor, preparation, etc. to be included in base bid amount). Figures below are not inclusive of Access Control and do not apply to specialty doors (Detention, Vault doors, etc.)

   $ 800.00 per interior door leaf

   $ 2,000.00 per exterior door leaf (Includes hardware for Storefront doors as well).

END OF SECTION

SECTION 01 23 00

ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for Alternates.

B. Definition: an Alternate is an amount proposed by Bidders and stated on the Bid Form for certain construction activities defined in the Bidding Requirements that may be added to or deducted from base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems, or installation methods described in Contract Documents.

C. Coordination: Coordinate related Work and modify or adjust adjacent work as necessary to ensure that work affected by each accepted Alternate is complete and fully integrated into the project.

D. Notification: Immediately following the award of the Contract, prepare and distribute to each party involved, notification of the status of each Alternate. Indicate whether Alternates have been accepted, rejected or deferred for consideration at a later date. Include a complete description of negotiated modifications to Alternates.

E. Schedule: Specification Sections contain requirements for materials and methods necessary to achieve the work described under each Alternate.

Alternate Additions/Deductions to the Base Bid (IF ANY) Refer to Addendums for future alternates.

1.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 25 13

PRODUCT SUBSTITUTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for handling requests for substitutions made after award of the Contract.

B. The Contractor's Construction Schedule and the Schedule of Submittals are included under Section "Submittals."

C. Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to produce specified.

D. Procedural requirements governing the Contractor's selection of products and product options are included under Section "Materials and Equipment."

1.3 DEFINITIONS

A. Definitions used in the Article 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. Revisions to Contract Documents requested by the Owner or Architect.
2. Specified options of products and construction methods included in Contract Documents.
3. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS

A. Substitution Request Submittal: Requests for substitution will be considered if received within 15 days after commencement of the work. Requests received more than 15 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. Submit requests in the form and in accordance with procedures required for Change Order proposals.
2. The Architect will consider only those requests accompanied by a copy of the Request for Substitution form bound herein, filled out completely, signed, and including the required attachments.
3. Architect's Action: Within one week of receipt of the request for substitution, 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 the 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 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.

PART 2 - PRODUCTS

2.1 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 Contract Documents.
3. The request is timely, fully documented and properly submitted.
4. 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 as a result of failure to pursue the work promptly or coordinate activities properly.
5. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
6. 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.

7. 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.
8. The specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.
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 providethe required warranty.

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.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 25 13

PRODUCT SUBSTITUTIONS

PROPOSED REQUEST FOR SUBSTITUTION

TO: _____
_____
_____

FROM: _____
Name of Manufacturer
_____
Street Address
_____
City and State
_____
Phone number and name of person to contact

PROJECT: _____
_____
_____

1. Specification Section and Paragraph numbers of product specified
_____.

2. Proposed Substitute

A. Name and Model No:

B. Description:

C. Attach applicable Submittals as required by the referenced

Specification Section, i.e. Product Data, Materials List, Shop Drawings, Samples, Design Data, Test Reports, and Certificates. Attach Shop Drawings to the effect of the proposed substitution on adjacent components of the work.

D. Insert Numbers of applicable reference standards:

E. Attach a color chart; if applicable.

F. Attach installation instructions.

3. Manufacturer's Reputation: Attach the following:
   A. Evidence of reputation for prompt delivery.
   B. Evidence of reputation for efficiency in servicing products.

4. Comparison: Attach an itemized comparison of the proposed substitution with product specified. Significant qualities may include elements such as size, weight, durability, performance, and visual effects.

5. Changes in Work: Attach data relating to changes required in other work to permit use of proposed substitution and changes required in construction schedule and overall contract time. Coordinate changes or modifications needed to other parts of the work and to construction performed by the Owner and separate Contractors that will be necessary to accommodate the proposed substitution.

6. Cost Data: Attach accurate cost data on proposed substitution in comparison with product specified.
7. Previous Installation: Provide the following information on similar projects on which proposed substitution was used, list projects in the locale of the project primarily and then in other areas that best represent its application on this project:

Name and Address of Project	Date of Installation	Name, Address and Phone Number of Architect

A.

B.

C.

D.

8. In making a request for substitution, the Manufacturer, Installer, and Contractor each represents that:
   A. He has examined the Drawings and Specifications and has determined that, to the best of his knowledge, the proposed substitution is appropriate for the use intended in the Drawings and Specifications.
   B. He will provide the same or better warranty for substitution as for product or method specified.
   C. The product is equal or better in quality and serviceability to the specified item.

9. In making a request for substitution, the Installer and Contractor each represents that:

   A. He will coordinate the installation of accepted substitution into the work, making such changes as may be required for the work to be complete in all respects.
   B. He waives all claims for additional costs related to substitution which consequently become apparent.
   C. Cost data is complete and includes all related costs under his Contract, but excludes costs under separate contracts and the Architect's redesign costs.
   D. The substitution meets the requirements of the Contract Documents, regardless of the evidence submitted or any review or independent investigation by the Owner or the Architect.

_____

Name of Manufacturer and signature of Manufacturer's Rep Date

_____

Name of Installer and signature of Installer's Rep Date

SECTION 01 25 13

PRODUCT SUBSTITUTIONS

_____

Name of Contractor and signature of Contractor's Rep Date

SECTION 01 26 00

MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to this section.

1.2 SUMMARY

A. This section specifies administrative and procedural requirements for handling and processing Contract modifications.

1.3 MINOR CHANGES IN THE WORK

A. Supplemental instructions authorizing minor changes in the Work, not involving an adjustment to the Contract Sum or Contract Time, will be issued by the Architect on AIA form G710, Architect's Supplemental Instructions.

1.4 CHANGE ORDER PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Proposed changes in the Work that will require adjustment to the Contract Sum or Contract Time will be issued by the Architect, with a detailed description of the proposed change and supplemental or revised Drawings and Specifications, if necessary.

1. Proposal requests issued by the Architect are for information only. Do not consider them instruction either to stop work in progress, or to execute the proposed change.
2. Unless otherwise indicated in the proposal request, within 20 days of receipt of the proposal request, submit to the Architect for the Owner's review an estimate of cost necessary to execute the proposed change.

    a. Include a list of quantities of products to be purchased and unit costs, along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
    b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade

discounts.

c. Include a statement indicating the effect the proposed change in the Work will have on the Contract Time.

B. Contractor-Initiated Change Order Proposals: When latent or other unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a change proposal to the Architect.

1. Include a statement outlining the reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and Contract Time.
2. Include a list of quantities of products to be purchased and unit costs along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Comply with requirements in Section "Product Substitutions" if the proposed change in the Work requires the substitution of one product or system for a product or system specified.

1.5 ALLOWANCES

A. Allowance Adjustment: Base each Change Order Proposal for an allowance cost adjustment solely on the difference between the actual purchase amount and the allowance, multiplied by the final measurement of work-in-place, with reasonable allowances, where applicable, for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.

1.6 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: When the Owner and Contractor are not in total agreement on the terms of a Change Order Proposal Request, the Architect may issue a Construction Change Directive on AIA for G714, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.7 CHANGE ORDER PROCEDURES

A. Upon the Owner's approval of a Change Order Proposal, the Architect will issue a Change Order for signatures of the Owner and Contractor on AIA Form G701, as provided in the Conditions of the Contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 29 00

APPLICATION FOR PAYMENT

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1.3 SCHEDULE OF VALUES

A. Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule.

1. Submit the Schedule of Values to the Architect at the earliest feasible date, but in no case later than 7 days before the date scheduled for submittal of the initial Application for Payment.

B. Format and Content: Use the Project Manual Table of Contents as a guide to establish the format for the Schedule of Values.

1. Identification: Include the following Project Identification on the Schedule of Values:

a. Project name
b. Name of the Architect
c. Project number
d. Contractor's name and address
e. Date of submittal

2. Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed:

a. Generic name

b. Related Specification Section
c. Name of subcontractor
d. Name of Manufacturer or fabricator
e. Name of supplier
f. Change Orders (numbers) that have affected value
g. Dollar value
h. Percentage of Contract Sum to the nearest one-hundredth percent, adjusted to total 100 percent

3. For each part of the Work where an Application for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

1.4 APPLICATIONS FOR PAYMENT:

A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect and paid for by the Owner.

B. Payment Application Times: Each progress payment date is as indicated in the Agreement. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Forms: Use AIA Document G 702 and Continuation Sheets G 703 as the form for Application for payment.

D. Application Preparation: Complete every entry on the form, including notarization and execution by person authorized to sign legal documents on behalf of the Owner. Incomplete applications will be returned without action.

E. Transmittal: Submit 3 executed copies of each Application for Payment to the Architect by means ensuring receipt within 24 hours.

F. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment.

G. Administrative actions and submittals that shall proceed or coincide with this application include:
1. Occupancy permits and similar approvals
2. Warranties (guarantees) and maintenance agreements

3. Test/adjust/balance records
4. Maintenance instructions
5. Meter readings
6. Start-up performance reports
7. Change-over information related to Owner's occupancy, use, operation, and maintenance.
8. Final cleaning
9. Application for reduction of retainage, and consent of surety
10. Advice on shifting insurance coverages
11. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial completion.

H. Final Payment Application: Administrative actions and submittals which must precede or coincide with submittal of the final payment Application for Payment include the following:

1. Completion of Project closeout requirements
2. Completion of items specified for completion after Substantial Completion
3. Assurance that unsettled claims will be settled
4. Assurance that Work not complete and accepted will be completed without undue delay
5. Transmittal of required Project construction records to Owner
6. Certified property survey.
7. Proof that taxes, fees, and similar obligations have been paid
8. Release of liens
9. Removal of temporary facilities and services
10. Removal of surplus materials, rubbish, and similar elements
11. Change of door locks to Owner's access

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 31 13

PROJECT COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to:

1. Coordination
2. General installation provisions
3. Cleaning and protection

1.3 COORDINATION

A. Coordination: Coordinate construction activities included under various Sections of these Specifications to assure efficient and orderly installation of each part of the work. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation, connection, and operation.

1. Where installation of one part of the work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.
2. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

1. Prepare similar memoranda for the Owner and separate Contractors where coordination of their work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION PROVISIONS

A. Inspection of Conditions: Require the Installer of each major component to inspect both the

substrate and conditions under which work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

B. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.

C. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.

D. Provide attachment and connection devices and methods necessary for securing work. Secure work true to line and level. Allow for expansion and building movement.

E. Visual Effects: Provide uniform joint widths in exposed work. Arrange joints in exposed work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.

F. Recheck measurements and dimensions, before starting each installation.

G. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.

H. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.

I. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.

3.2 CLEANING AND PROTECTION

A. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

B. Clean and maintain completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

C. Limiting Exposures: Supervise construction activities to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

END OF SECTION

SECTION 01 31 19

PROJECT MEETINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including general and Supplementary 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:
   1. Pre-Construction Conference
   2. Progress Meetings – to be held every other week at an agreed-upon time/date.

B. Construction schedules are specified in another Division-1 Section.

1.3 PRE-CONSTRUCTION CONFERENCE

A. Schedule a pre-construction conference and organizational meeting at the Project site or other convenient location no later than 15 days after execution of the Agreement and prior to commencement of construction activities. Conduct the meeting to review responsibilities and personnel assignments.

B. Attendees: The Owner, Architect and their consultants, the Contractor and its superintendent, major subcontractors, manufacturers, suppliers and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the work.

C. Agenda: Discuss items of significance that could affect progress including such topics as:
   1. Tentative construction schedule
   2. Critical Work sequencing
   3. Designation of responsible personnel
   4. Procedures for processing field decisions and Change Orders
   5. Procedures for processing Applications for Payment
   6. Distribution of Contract Documents
   7. Submittal of Shop Drawings, Product Data and Samples
   8. Preparation of record documents
   9. Use of the premises
   10. Office, Work, and storage areas
   11. Equipment deliveries and priorities
   12. Safety procedures
   13. First aid
   14. Security
   15. Housekeeping

16. Working hours

1.4 PROGRESS MEETINGS

A. Conduct progress meetings with subcontractors at weekly intervals. Notify the Owner and Architect of scheduled meeting dates in case they opt to attend. Coordinate dates of meetings with preparation of the payment request.

B. Attendees: In addition to representatives of the General Contractor, each subcontractor, supplier or other entity concerned with current progress or involved in planning, coordination or performance of future activities shall be represented at these meetings by persons familiar with the Project and authorized to conclude matters relating to progress.

C. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the current status of the Project.

1. 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.

2. Review the present and future needs of each entity present, including such items as:

a. Interface requirements
b. Time
c. Sequences
d. Deliveries
e. Off-site fabrication problems
f. Access
g. Site utilization
h. Temporary facilities and services
i. Hours of Work
j. Hazards and risks
k. Housekeeping
l. Quality and Work standards
m. Change Orders
n. Documentation of information for payment requests
o. Pre-installation discussions

D. Reporting: No later than 3 days after each progress meeting date, distribute copies of minutes of the meeting to each party present and to other parties who should have been present. Also, send the minutes to the Architect, via email, and include a brief summary, in narrative form, of progress since the previous meeting and report.

1. Schedule Updating: Revise the construction schedule after each progress meeting where revision to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final completion construction photographs.

B. Related Requirements:

1. Section 017700 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.
2. Section 024119 "Selective Demolition" for photographic documentation before selective demolition operations commence.
3. Section 311000 "Site Clearing" for photographic documentation before site clearing operations commence.

1.2 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.

B. Digital Photographs: Submit image files within [three] days of taking photographs.

1. Submit photos [on CD-ROM or thumb-drive]. Include copy of key plan indicating each photograph's location and direction.
2. Identification: Provide the following information with each image description [in file metadata tag]:

a. Name of Project.

b. Name and contact information for photographer.
c. Name of Owner and Architect.
d. Name of Contractor.
e. Date photograph was taken.
f. Description of location, vantage point, and direction.
g. Unique sequential identifier keyed to accompanying key plan.

1.3 QUALITY ASSURANCE

1.4 FORMATS AND MEDIA

A. Digital Photographs: Provide color images in JPG format, produced by a digital camera with minimum sensor size of [12] megapixels, and at an image resolution of not less than [3200 by 2400] pixels[, and with vibration-reduction technology]. Use flash in low light levels or backlit conditions.

B. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1.5 CONSTRUCTION PHOTOGRAPHS

A. Photographer: Engage a qualified photographer to take construction photographs.

B. General: Take photographs with maximum depth of field and in focus.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

C. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by [Architect].

1. Flag [construction limits] before taking construction photographs.
2. Take [20] photographs to show existing conditions adjacent to property before starting the Work.
3. Take [20] photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.

4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

D. Periodic Construction Photographs: Take [20] photographs [weekly] . Select vantage points to show status of construction and progress since last photographs were taken.

E. Final Completion Construction Photographs: Take [100] photographs after date of Substantial Completion for submission as Project Record Documents. [Architect] will inform photographer of desired vantage points.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013233

SECTION 01 33 00

SUBMITTALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for submittals required for performance of the work, including:

1. Contractor's construction schedule
2. Daily construction reports
3. Shop Drawings
4. Product Data
5. Samples

B. Administrative Submittals: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:

1. Permits
2. Applications for payment
3. Performance and payment bonds
4. Insurance certificates
5. List of Subcontractors

C. The Schedule of Values submittal is included in Section "Applications for Payment."

1.3 SUBMITTAL PROCEDURES

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

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related elements of the work so processing will not be delayed by the need to review submittals concurrently for coordination.

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

3. Processing: Allow sufficient review time so that installation will not be delayed as a result

of the time required to process submittals, including time for re-submittals.

a. Allow three weeks for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Architect will promptly advise the Contractor when a submittal being processed must be delayed for coordination.

b. If an intermediate submittal is necessary, process the same as the initial submittal.

c. Allow two weeks for reprocessing each submittal.

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

B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

1. Provide a space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.

2. Include the following information on the label for processing and recording action taken.

a. Project name

b. Date

c. Name and address of Architect

d. Name and address of Contractor

e. Name and address of subcontractor

f. Name and address of supplier

g. Name of manufacturer

h. Number and title of appropriate Specification Section

i. Drawing number and detail references, as appropriate

C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Architect using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.

1. On the transmittal Record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

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 of the date established for "Commencement of the Work".

1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown

of units of the Work as indicated in the "Schedule of Values".

B. Distribution: Following response to the initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.

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

C. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

1.5 SHOP DRAWINGS

A. Submit newly prepared information, drawn to accurate 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 considered Shop Drawings.

B. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. Include the following information:

1. Dimensions
2. Identification of products and materials included
3. Compliance with specified standards
4. Notation of coordination requirements
5. Notation of dimensions established by field measurement.
6. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings of sheets at least 8 1/2" x 11" but no larger then 30" x 42".
7. Initial Submittal: Submit one correctable translucent reproducible print and two blue or black-line print for the Architect's review; the reproducible print will be returned.
8. Final Submittal: Submit three blue or black-line prints; submit 5 prints where required for maintenance manuals. 2 prints will be retained; the remainder will be returned.
9. Do not use Shop Drawings without an appropriate final stamp indicating action taken in connection with construction.

C. SPECIFIC SHOP DRAWINGS TO BE SUBMITTED, IN ADDITION TO CUSTOMARY ITEMS, ARE AS FOLLOWS:

1. Engineered Wood Truss Shop drawings with Georgia Registered Engineer’s Stamp.
2. Steel Stud Shop drawings with Georgia Registered Engineer’s Stamp.
3. Parking and sidewalk layout shop drawing.
4. Roofing, flashing, and coping shop drawings.

5. Millwork and Cabinetry.
6. Interior Finishes.
7. HVAC, Plumbing, and Electrical.

1.6 PRODUCT DATA

A. Collect Product Data into a singe submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."

1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:
   a. Manufacturer's printed recommendations
   b. Compliance with recognized trade association standards
   c. Compliance with recognized testing agency standards
   d. Application of testing agency labels and seals
   e. Notation of dimensions verified by field measurement
   f. Notation of coordination requirements
2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
3. Preliminary Submittal: Submit a preliminary single-copy of Product Data where selection of options is required.
4. Submittals: Submit 3 copies of each required submittal; submit 5 copies where required for maintenance manuals. The Architect will retain one, and will return the other marked with action taken and corrections or modifications required.
   a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
5. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
   a. Do not proceed with installation until an applicable copy of Product Data applicable is in the installer's possession.
   b. Do not permit use of unmarked copies of Product Data in connection with construction.

1.7 SAMPLES

A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture and pattern.

1. Mount, display, or package Samples in the manner specified to facilitate review of qualities indicated. Prepare Samples to match the Architect's Sample. Include the following:
   a. Generic description of the Sample
   b. Sample source
   c. Product name or name of manufacturer
   d. Compliance with recognized standards
   e. Availability and delivery time
2. Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
   a. Where variation in color, pattern, texture or other characteristics are inherent in the material or product represented, submit multiple units (not less than 3) that show approximate limits of the variations.
   b. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation and similar construction characteristics.
   c. Refer to other Sections for Samples to be returned to the Contractor for incorporation in the Work. Such samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.
3. Preliminary submittals: Where Samples are for selection of color, pattern, texture or similar characteristics from a range of standard choices, submit a full set of choices for the material or product.
   a. Preliminary submittals will be reviewed and returned with the Architect's mark indicating selection and other action.
   4. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, submit 3 sets; one will be returned marked with the action taken.
5. Maintain sets of Samples, as returned, at the Project site, for quality comparisons throughout

the course of construction.

a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.

b. Sample sets may be used to obtain final acceptance of the construction associated with each set.

B. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.

1.8 ARCHITECT'S ACTION

A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Architect will review each submittal, mark to indicate action taken, and return promptly.

1. Compliance with specified characteristics is the Contractor's responsibility.

B. Action Stamp: The Architect will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:

1. Final Unrestricted Release: Where submittals are marked "Approved " or No Exceptions Taken" that part of the work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance. This does NOT preclude the Contractor from following the Construction Documents in any way. This does not comprise the Architect's "approval" of the submittal, other than for a cursory review, and does not allow the contractor to deviate from the documents in any fashion. It is simply a courtesy review of the submittal. The Architect has outlined the project in the Construction Document and any variation is taken at the Contractor's risk.

2. Final-But-Restricted Release: When submittals are marked "Make Corrections Noted" that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.

3. Returned for Resubmittal: When submittal is marked "Rejected, Resubmit," do not proceed with that part of the work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.

a. Do not permit submittals marked "Rejected, Resubmit" to be used at the Project site, or elsewhere where Work is in progress.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 42 19

REFERENCE STANDARDS AND DEFINITIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the General Conditions.

B. Indicated: The term "indicated" refers to graphic representations, notes, or schedules on the Drawings, other paragraphs or schedules in the Specifications, and similar requirements in the Contract Documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used, it is to help the reader locate the reference; no limitation on location is intended.

C. Directed: Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean "directed by the Architect", "requested by the Architect," and similar phrases.

D. Approve: The term "approved," where used in conjunction with the Architect's action on the Contractor's submittals, applications, and requests, is limited to the Architect's duties and responsibilities as stated in General and Supplementary Conditions.

E. Regulation: The term "Regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

F. Furnish: The term "furnish" is used to mean "supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations."

G. Install: The term "install" is used to describe operations at project site including the actual "unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations."

H. Provide: The term "provide" means "to furnish and install, complete and ready for the intended use."

I. Installer: An "Installer" is the Contractor or an entity engaged by the Contractor, either as an employee, subcontractor, or sub-subcontractor, for performance of a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

1. The term "experienced" when used with the term "Installer" means having a minimum of 5 previous Projects similar in size and scope to this Project, being familiar with the precautions required, and having complied with requirements of the authority having jurisdiction.

2. Trades: Use of titles such as "carpentry" is not intended to imply that certain construction

activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.

3. Assignment of Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in the operations to be performed. The specialists must be engaged for those activities, and assignments are requirements over which the Contractor has no choice or opinion. Nevertheless, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.

a. This requirement shall not be interpreted to conflict with enforcement of building codes and similar regulations governing the Work. It is also not intended to interfere with local trade union jurisdictional settlements and similar conventions.

J. Project Site is the space available to the Contractor for performance of construction activities, either exclusively or in conjunction with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land upon which the Project is to be built.

K. Testing Laboratories: A "testing laboratory" is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as f bound or copied directly into the Contract Documents. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Where the date of issue of a referenced standard is not specified, comply with The standard in effect as of date of Contract Documents.

C. Conflicting Requirements: Where compliance with two or more standards is specified, and the standards establish different or conflicting requirements for minimum quantities or quality levels, refer requirements that are different, but apparently equal, and uncertainties to the Architect for a decision before proceeding.

1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable

limits. In complying with these requirements, indicated numeric values are minimum or maximum, as appropriate for the context of the requirements. Refer uncertainties to the Architect for a decision before proceeding.

D. Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to that entity's construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed for performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.

2. Although copies of standards needed for enforcement of requirements may be included as part of required submittals, the Architect reserves the right to require the Contractor to submit additional copies as necessary for enforcement of requirements.

E. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.

1.4 GOVERNING REGULATIONS/AUTHORITIES

A. The Architect has contacted authorities having jurisdiction where necessary to obtain information necessary for preparation of Contract Documents; that information may or may not be of significance to the Contractor. Contact authorities having jurisdiction directly for information and decisions having a bearing on the Work.

1.5 SUBMITTALS

A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence, and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01 43 13

MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements governing the Contractor's selection of products for use in the Project.

B. The Contractor's Construction Schedule and the Schedule of Submittals are included under Section "Submittals."

C. Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to products specified.

D. Administrative procedures for handling requests for substitutions made after award of the Contract are included under Section "Product Substitutions."

1.3 DEFINITIONS

A. Definitions used in the Article 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 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.
2. "Materials" are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
3. "Equipment" is a product with operational parts, whether motorized of manually operated, that requires service connections such as wiring or piping.

1.4 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.

C. 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 which 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 which is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:

a. Name of product and manufacturer
b. Model and serial number
c. Capacity
d. Speed
e. Ratings

1.5 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 and other

losses.

3. Deliver products to the site in the manufacturer's original sealed container or other packaging system, 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, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 - PRODUCTS

2.1 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. Substitutions will be permitted, if approved equal.
2. Semi-proprietary Specification Requirements: Where two or more products or manufacturers are named, provide one of the products indicated. Substitutions will be permitted, if approved equal.
3. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or

trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.

4. 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. General overall performance of a product is implied where the product is specified for a specific application.
   a. Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.
5. 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.
6. Visual Matching: Where Specifications require matching an established Sample, the Architect's decision will be final on whether a proposed product matches satisfactorily.
   a. Where no product available within the specified category matches satisfactorily and also complies 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.
7. 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.
8. 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.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work.
   1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION

SECTION 01 51 00

TEMPORARY FACILITIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection.

B. Temporary utilities required include but are not limited to:

1. Water service and distribution
2. Temporary electric power and light
3. Telephone service.
4. Internet Service with email, Computer, and Printer.

C. Temporary construction and support facilities required include but are not limited to:

1. Temporary heat
2. Field offices and storage sheds
3. Sanitary facilities, including drinking water
4. Temporary enclosures
5. Elevator use
6. Temporary Project identification signs and bulletin boards
7. Waste disposal services
8. Rodent and pest control
9. Construction aids and miscellaneous services and facilities.

D. Security and protection facilities required include but are not limited to:

1. Temporary fire protection
2. Barricades, warning signs, lights
3. Environmental protection

1.3 SUBMITTALS

A. Temporary Utilities: Submit reports of tests, inspections, meter readings and similar procedures performed on temporary utilities.

1.4 QUALITY ASSURANCE

A. Regulations: Comply with industry standards and applicable laws and regulations if authorities having jurisdiction, including but not limited to:

1. Building Code requirements
2. Health and safety regulations
3. Utility company regulations
4. Police, Fire Department and Rescue Squad rules
5. Environmental protection regulations

B. Standards: Comply with NFPA Code 241, "Building Construction and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and NECA Electrical Design Library "Temporary Electrical Facilities."

1. Refer to "Guidelines for Bid Conditions for Temporary Job Utilities and Services", prepared jointly by AGC and ASC, for industry recommendations.
2. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service in compliance with National Electric Code (NFPA 70).

C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of the permanent service.

B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide new materials; if acceptable to the Architect, undamaged previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.

B. Lumber and Plywood: Comply with requirements in Division-6 Section "Rough Carpentry."

1. For job-built temporary offices, shops and sheds within the construction area, provide UL labeled, fire treated lumber and plywood for framing, sheathing and siding.
2. For signs and directory boards, provide exterior type, Grade B-B high Density Concrete Form Overlay Plywood conforming to PS-1, of sizes and thickness indicated.
3. For fences and vision barriers, provide exterior type, minimum 3/8" thick plywood.

C. Gypsum Wallboard: Provide gypsum wallboard complying with requirements of ASTM C 36 on interior walls of temporary offices.

D. Paint: Comply with requirements of Division-9 Section "Finish Painting."
1. For job-built temporary offices, shops, sheds, fences and other exposed lumber and plywood, provide exterior grade acrylic-latex emulsion over exterior primer.
2. For sign panels and applying graphics, provide exterior grade alkyd gloss enamel over exterior primer.
3. For interior walls of temporary offices, provide two coats interior latex flat wall paint.

E. Tarpaulins: Provide waterproof, fire-resistant, UL labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures provide translucent nylon reinforced laminated polyethylene or polyvinyl chloride fire retardant tarpaulins.

F. Water: Provide potable water approved by local health authorities.

2.2 EQUIPMENT

A. General: Provide new equipment; if acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.

B. Water Hoses: Provide 3/4" heavy-duty, abrasion-resistant, flexible rubber hoses 100 ft. long, with pressure rating greater than the maximum pressure of the water distribution system; provide adjustable shut-off nozzles at hose discharge.

C. Electrical Outlets: Provide properly configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.

D. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.

E. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.

F. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM or another recognized trade association related to the type of fuel being consumed.

G. Temporary Offices: Provide prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.

H. Temporary Toilet Units: Provide self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material.

I. First Aid Supplies: Comply with governing regulations.

J. Fire Extinguishers: Provide hand-carried, portable UL-rated, class "A" fire extinguishers for temporary offices and similar spaces. In other locations provide hand-carried, portable, UL-rated, class "ABC" dry chemical extinguishers, or a combination of extinguishers of NFPA recommended classes for the exposures.

1. Comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Connect to existing service.

B. Water Service: Install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use.

1. Sterilization: Sterilize temporary water piping prior to use.

C. Temporary Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload protected disconnects, automatic ground-fault interrupters and main distribution switch gear.

1. Except where overhead service must be used, install electric power service underground.

2. Power Distribution System: Install wiring overhead, and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 Volts, AC 20 ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance.

D. Temporary Lighting: Whenever overhead floor or roof deck has been installed, provide temporary lighting with local switching.

1. Install and operate temporary lighting that will fulfill security and protection requirements, without operating the entire system, and will provide adequate illumination for construction operations and traffic conditions.

E. Temporary Telephones: Provide temporary telephone service for all personnel engaged in construction activities, throughout the construction period. Install telephone on a separate line for each temporary office and first aid station. Where an office has more than two occupants, install a telephone for each additional occupant or pair of occupants.

1. At each telephone, post a list of important telephone numbers.

3.3 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES

A. Locate field offices, storage sheds, sanitary facilities and other temporary construction and support facilities for easy access.

1. Maintain temporary construction and support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.

B. Provide incombustible construction for offices, shops and sheds located within the construction area, or within 30 feet of building lines. Comply with requirements of NFPA 241.

C. Temporary Heat: Provide temporary heat required by construction activities, for curing or drying of completed installations or protection of installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.

D. Heating Facilities: Except where use of the permanent system is authorized, provide vented self-contained LP gas or fuel oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open flame, or salamander type heating units is prohibited.

E. Field offices: Provide insulated, weather-tight temporary offices of sufficient size to accommodate required office personnel at the Project site. Keep the office clean and orderly for use for small progress meetings. Furnish and equip offices as follows:

F. Sanitary facilities include temporary toilets, wash facilities and drinking water fixtures. Comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.

1. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used material.

G. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.

H. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.

1. Provide safety showers, eye-wash fountains and similar facilities for convenience, safety and sanitation of personnel.

I. Drinking Water Facilities: Provide containerized tap-dispenser bottled-water type drinking water units, including paper supply.

1. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F (7 to 13 deg C).

J. Temporary Enclosures: Provide temporary enclosure for protection of construction in progress and completed, from exposure, foul weather, other construction operations and similar activities.

1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate

enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.

2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 sq feet or less with plywood or similar materials.

3. Close openings through floor or roof decks and horizontal surfaces with load-bearing wood-framed construction.

4. Where temporary wood or plywood enclosure exceeds 100 sq ft in area, use UL-labeled fire-retardant treated material for framing and main sheathing.

K. Temporary Elevator Use: Use of Service Elevator for movement of materials and personnel is permitted.

L. Project Identification and Temporary Signs: Prepare project identification and other signs of the size indicated; install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative treated wood or steel. Do not permit installation of unauthorized signs.

1. Project Identification Signs: Engage an experienced sign painter to apply graphics. Comply with details indicated.

2. Temporary Signs: Prepare signs to provide directional information to construction personnel and visitors.

M. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner.

N. Rodent and Pest Control: Retain a local exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Employ this service to perform extermination and control procedures at regular intervals so the Project will be relatively free of pests and their residues at Substantial Completion. Perform control operations in a lawful manner using environmentally safe materials.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer as requested by the Architect.

B. Temporary Fire Protection: Until fire protection needs are supplied by permanent facilities, install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers," and NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations."

1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
2. Store combustible materials in containers in fire-safe locations.
3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.
4. Provide supervision of welding operations, combustion type temporary heating units, and similar sources of fire ignition.

C. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.

D. Barricades, Warning Signs and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed provide lighting, including flashing red or amber lights.

E. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

F. Environmental Protection: Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways and subsoil might be contaminated or polluted, or that other undesirable effects might

result. Avoid use of tools and equipment which produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.5 OPERATION, TERMINATION AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.

B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation and similar facilities on a 24-hour day basis where required to achieve indicated results and to avoid possibility of damage.

2. Protection: Prevent water filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

C. Termination and Removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, or when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of the Contractor. The Owner reserves the right to take possession of Project identification signs.

2. At Substantial Completion, clean and renovate permanent facilities that have been used during the construction period, including but not limited to:

a. Replace air filters and clean inside of ductwork and housings.

b. Replace significantly worn parts and parts that have been subject to unusual operating conditions.

c. Replace lamps that are burned out or noticeably dimmed by substantial hours of use.

END OF SECTION

SECTION 01 51 00

TEMPORARY FACILITIES

SECTION 01 58 13

PROJECT SIGNS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Furnish, install, and maintain project identification sign.

B. Provide temporary on-site informational signs:

1. As required by codes, laws, and regulatory agencies.
2. To identify key elements of construction facilities.
3. To direct traffic.

C. Remove signs at completion of construction.

D. Allow no other signs to be displayed.

1.2 PROJECT IDENTIFICATION SIGN

A. Erect on the site at a lighted location of high public visibility, adjacent to the main entrance to site, as approved by Architect. Sign to be two (2) 8' wide by 4' tall plywood sheets mounted on two 6 x 6 pressure treated posts in the shape of a "V". Sign shall have:

Job Title

Oconee County Board of Commissioners names list along with County Seal

Architects name with logo at bottom left

Contractor's name with logo at bottom right.

PART 2 - PRODUCTS

2.1 SIGN MATERIALS

A. Structure and Framing: May be new, wood or metal, in sound condition structurally adequate to work, and suitable for specified finish.

B. Sign Surfaces: Two, exterior marine grade 4' x 8' plywood sheets with vinyl or painted lettering mounted to three 6 x 6 pressure-treated posts (forming a "V").

C. Rough Hardware: Galvanized

D. Paint: Exterior quality, as specified in Section 09 900.

1. Use bulletin colors for graphics.
2. Colors for structure, framing, sign surfaces, and graphics as shown.

PART 3 - EXECUTION

3.1 PROJECT IDENTIFICATION SIGN

A. Paint all exposed surfaces of supports, framing, and surface materials; one coat of primer, and one coat of exterior paint.

B. Paint graphics in the styles, sizes and colors as indicated on drawing in this section of specifications.

C. Provide the Project name at top center; Owner's name middle center; in smaller font provide Architect's name and address at lower left; Contractor's name and address at lower right; and any other name deemed appropriate for the project at lower center.

3.2 MAINTENANCE

A. Maintain signs and supports in a neat, clean condition; repair damages to structure, framing, or sign.

B. Relocate informational signs as required by progress of work.

3.3 REMOVAL

A. Remove signs, framing, supports, and foundations at completion of project.

END OF SECTION

SECTION 01 70 00

PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:

1. Inspection procedures
2. Project record document submittal
3. Operating and maintenance manual submittal
4. Submittal of warranties
5. Final clearing

B. Closeout requirements for specific construction activities are included in the appropriate Sections in Division-2 through -16.

1.3 SUBSTANTIAL COMPLETION

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

1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
    a. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the work is not complete.
2. Advise Owner of pending insurance change-over requirements.
3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
5. Submit record drawings, maintenance manuals, and similar final record information.

6. Deliver tools, spare parts, extra stock, and similar items.
7. Make final change-over of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of change-over in security provisions.
8. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
9. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.

B. Inspect Procedures: On receipt of a request for inspection the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

1. The Architect will repeat inspection when requested and assured that the work has been substantially completed.
2. Results of the completed inspection will form the basis of requirements for final acceptance.
3. The initial inspection shall be scheduled at least 20 days prior to date of substantial completion.
4. If necessary, the initial inspection will be repeated. Architects and Engineers cost for re-inspection will be paid by the Contractor and deducted from the contract sum by change order.

1.4 FINAL ACCEPTANCE

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.

1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
3. Submit a certified copy of the Architect's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Architect.
4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data

as of the date of Substantial Completion, or when the Owner took possession of and responsibility for corresponding elements of the work.

5. Submit consent of surety to final payment.
6. Submit a final liquidated damages settlement statement.
7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Re-inspection Procedure: The Architect will re-inspect the work upon receipt of notice that the work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Architect.

1. Upon completion of re-inspection, the Architect will prepare a certificate of final acceptance, or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
2. If necessary, re-inspection will be repeated, and the Architect's and Engineer's costs for re-inspection will be paid by the Contractor and deducted from the contract sum by change order.

1.5 RECORD DOCUMENT SUBMITTALS

A. General: Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Architect's reference during normal working hours.

B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the work.
2. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
3. Note related Change Order numbers where applicable.
4. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.

C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued

in printed form during construction. Mark these documents to show substantial variations in actual work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data.

1. Upon completion of the work, submit record Specifications to the Architect for the Owner's records.

D. Record Product Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in actual work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of record drawings and Specifications.

1. Upon completion of mark-up, submit complete set of record Product Data to the Architect for the Owner's records.

E. Record Sample Submitted: Immediately prior to the date or dates of Substantial Completion, the Contractor will meet at the site with the Architect and the Owner's personnel to determine which of

the submitted Samples that have been maintained during progress of the Work are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's Sample storage area.

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

G. Maintenance Manuals: Organize operating and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information.

1. Emergency instructions
2. Spare parts lists
3. Copies of warranties

4. Wiring diagrams
5. Recommended "turn around" cycles
6. Inspection procedures
7. Shop Drawings and Product Data
8. Fixture lamping schedule

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

A. Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:

1. Maintenance manuals
2. Record documents
3. Spare parts and materials
4. Tools
5. Lubricants
6. Fuels
7. Identification systems
8. Control sequences
9. Hazards
10. Cleaning
11. Warranties and bonds
12. Maintenance agreements and similar continuing commitments

B. As part of instruction for operating equipment, demonstrate the following procedures:

1. Start-up
2. Shutdown
3. Emergency operations
4. Noise and vibration adjustments
5. Safety procedures
6. Economy and efficiency adjustments
7. Effective energy utilization

3.2 FINAL CLEANING

A. General: General cleaning during construction is required by the General Conditions and included in Section "Temporary Facilities".

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

a. Remove labels that are not permanent labels

b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.

c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

e. Clean the site, including landscape development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.

C. Pest Control: Engage an experienced exterminator to make a final inspection, and rid the Project of rodents, insects and other pests.

D. Removal of Protection: Remove temporary protection and facilities installed for protection of the work during construction.

E. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

1. Where extra materials of value remaining after completion of associated work have become the Owner's property, arrange for disposition of these materials as directed.

END OF SECTION

SECTION 01 78 33

WARRANTIES AND BONDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturers standard warranties on products and special warranties.

1. Refer to the General Conditions for terms of the Contractor's special warranty of workmanship and materials.
2. General closeout requirements are included in Section "Project Closeout."
3. Specific requirements for warranties for the Work and products and installations that are specified to be warranted, are included in the individual Sections of Divisions-2 through -16.
4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.

B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.3 DEFINITIONS

A. Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.

B. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

1.4 WARRANTY REQUIREMENTS

A. Related Damages and Losses: When correcting warranted work that has failed, remove and replace other work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted work.

B. Reinstatement of Warranty: When work covered by a warranty has failed and has been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty

shall be equal to the original warranty with an equitable adjustment for depreciation.

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

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

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

E. The Owner reserves the right to refuse to accept work for the Project where a special warranty, certification, or similar commitment is required on such work or part of the work, until evidence is presented that entities required to countersign such commitments are willing to do so.

1.5 SUBMITTALS

A. Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the work, submit written warranties upon request of the Architect.

1. When a designated portion of the work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within fifteen days of completion of that designated portion of the work.

B. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner through the Architect for approval prior to final execution.

1. Refer to individual Sections of Divisions-2 through -16 for specific content requirements, and particular requirements for submittal of special warranties.

C. Form of Submittal: At Final Completion compile two copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the

Project Manual.

D. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper.

1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the installer.
2. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS", the Project title or name, and the name of the Contractor.
3. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.

B. Related Sections include the following:

1. Division 1 Section "Summary of Multiple Contracts" for coordinating Project Record Documents covering the Work of multiple contracts.
2. Division 1 Section "Closeout Procedures" for general closeout procedures].
3. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
4. Divisions 2 through 16 Sections for specific requirements for Project Record Documents of products in those Sections.

1.3 SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit **one** set of marked-up Record Prints and one electronic copy.
2. Number of Copies: Submit copies of Record Drawings as follows:

a. Initial Submittal: Submit **one** set of **corrected Record electronic files** and **one** set of marked-up Record Prints. Architect will initial and date each **marked-up set** and mark whether general scope of changes, additional information recorded, and quality of drafting are acceptable. Architect will return **transparencies** and prints for organizing into sets, printing, binding, and final submittal.
b. Final Submittal: Submit o**ne** set of marked-up Record Prints, **one** set of record transparencies, and **three** copies printed from Record Transparencies. Print

each Drawing, whether or not changes and additional information were recorded.

c. Final Submittal: Submit **one** set of marked-up Record Prints, **one** set of Record CAD Drawing files, **one** set of Record CAD Drawing plots, and **three** copies printed from record plots. Plot and print each Drawing, whether or not changes and additional information were recorded.

1) Electronic Media: **CD-ROM**.

B. Record Specifications: Submit **one copy** of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit **one copy** of each Product Data submittal.

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

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.

1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.

a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
b. Accurately record information in an understandable drawing technique.
c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.

2. Content: Types of items requiring marking include, but are not limited to, the following:

a. Dimensional changes to Drawings.
b. Revisions to details shown on Drawings.
c. Depths of foundations below first floor.
d. Locations and depths of underground utilities.

e. Revisions to routing of piping and conduits.
f. Revisions to electrical circuitry.
g. Actual equipment locations.
h. Duct size and routing.
i. Locations of concealed internal utilities.
j. Changes made by Change Order or Construction Change Directive.
k. Changes made following Architect's written orders.
l. Details not on the original Contract Drawings.
m. Field records for variable and concealed conditions.
n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record Transparencies: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect. When authorized, prepare a full set of corrected transparencies of the Contract Drawings and Shop Drawings.

1. Incorporate changes and additional information previously marked on Record Prints. Erase, redraw, and add details and notations where applicable.
2. Refer instances of uncertainty to Architect for resolution.
3. Owner will furnish Contractor one set of transparencies of the Contract Drawings for use in recording information.
4. Print the Contract Drawings and Shop Drawings for use as Record Transparencies. Architect will make the Contract Drawings available to Contractor's print shop.

C. Record CAD Drawings: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect. When authorized, prepare a full set of corrected CAD Drawings of the Contract Drawings, as follows:

1. Format: Same CAD program, version, and operating system as the original Contract Drawings.
2. Format: **DWG**], operating in **Windows NT** operating system.
3. Incorporate changes and additional information previously marked on Record Prints. Delete, redraw, and add details and notations where applicable.
4. Refer instances of uncertainty to Architect for resolution.

5. Architect will furnish Contractor one set of CAD Drawings of the Contract Drawings for use in recording information.

    a. Architect makes no representations as to the accuracy or completeness of CAD Drawings as they relate to the Contract Drawings.
    b. CAD Software Program: The Contract Drawings are available in AUTOCAD 2000.

D. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing Record Drawings where Architect determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.

1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
2. Consult with Architect for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared Record Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.

E. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.
3. Record CAD Drawings: Organize CAD information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each CAD file.
4. Identification: As follows:

    a. Project name.
    b. Date.
    c. Designation "PROJECT RECORD DRAWINGS."
    d. Name of Architect .
    e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

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

2.3 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Drawings, **and Product Data** where applicable.

2.4 MISCELLANEOUS RECORD SUBMITTALS

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

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.

B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

END OF SECTION 01781

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:

1. Demonstration of operation of systems, subsystems, and equipment.
2. Training in operation and maintenance of systems, subsystems, and equipment.

B. Related Sections include the following:

1. Division 1 Section "Allowances" for administrative and procedural requirements for demonstration and training allowances.
2. Division 1 Section "Project Management and Coordination" for requirements for pre-instruction conferences.
3. Division 1 Section "Photographic Documentation" for preparing and submitting demonstration and training videotapes.

C. Allowances: Furnish demonstration and training instruction time under the Demonstration and Training Allowance as specified in Division 1 Section "Allowances."

D. Unit Price for Instruction Time: Length of instruction time will be measured by actual time spent performing demonstration and training in required location. No payment will be made for time spent assembling educational materials, setting up, or cleaning up.

1.3 SUBMITTALS

A. Instruction Program: Submit [**four**] copies of outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.

1. At completion of training, submit [**four**] complete training manual[**s**] for Owner's use.

B. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

C. Attendance Record: For each training module, submit list of participants and length of instruction time.

D. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

E. Demonstration and Training Videotape: Submit [**four**] copies at end of each training module.

1.4 QUALITY ASSURANCE

A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.

B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 1 Section "Quality Requirements," experienced in operation and maintenance procedures and training.

C. Pre-instruction Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to demonstration and training including, but not limited to, the following:

1. Inspect and discuss locations and other facilities required for instruction.
2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
3. Review required content of instruction.
4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.5 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM (as applicable)

A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections, and as follows:

1. Motorized doors, including [**overhead coiling doors**] .

2. Equipment, including [**residential appliances**].
3. Fire-protection systems, including [**fire alarm**] [**fire pumps**] [**and**] [**fire-extinguishing systems**].
4. Intrusion detection systems.
5. Conveying systems, including [**elevators**].
6. Medical equipment, including medical gas equipment and piping.
7. Heat generation, including [**boilers**] [**feedwater equipment**] [**pumps**] [**steam distribution piping**] [**and**] [**water distribution piping**].
8. Refrigeration systems, including [**chillers**] [**cooling towers**] [**condensers**] [**pumps**] [**and**] [**distribution piping**].
9. HVAC systems, including [**air-handling equipment**] [**air distribution systems**] [**and**] [**terminal equipment and devices**].
10. HVAC instrumentation and controls.
11. Electrical service and distribution, including [**transformers**] [**switchboards**] [**panelboards**] [**uninterruptible power supplies**] [**and**] [**motor controls**].
12. Packaged engine generators, including transfer switches.
13. Lighting equipment and controls.
14. Communication systems, including [**intercommunication**] [**surveillance**] [**clocks and programming**] [**voice and data**] [**and**] [**television**] equipment.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:

    a. System, subsystem, and equipment descriptions.
    b. Performance and design criteria if Contractor is delegated design responsibility.
    c. Operating standards.
    d. Regulatory requirements.
    e. Equipment function.
    f. Operating characteristics.
    g. Limiting conditions.
    h. Performance curves.

2. Documentation: Review the following items in detail:

    a. Emergency manuals.
    b. Operations manuals.
    c. Maintenance manuals.
    d. Project Record Documents.
    e. Identification systems.
    f. Warranties and bonds.
    g. Maintenance service agreements and similar continuing commitments.

3. Emergencies: Include the following, as applicable:

    a. Instructions on meaning of warnings, trouble indications, and error messages.
    b. Instructions on stopping.

c. Shutdown instructions for each type of emergency.
d. Operating instructions for conditions outside of normal operating limits.
e. Sequences for electric or electronic systems.
f. Special operating instructions and procedures.

4. Operations: Include the following, as applicable:

a. Startup procedures.
b. Equipment or system break-in procedures.
c. Routine and normal operating instructions.
d. Regulation and control procedures.
e. Control sequences.
f. Safety procedures.
g. Instructions on stopping.
h. Normal shutdown instructions.
i. Operating procedures for emergencies.
j. Operating procedures for system, subsystem, or equipment failure.
k. Seasonal and weekend operating instructions.
l. Required sequences for electric or electronic systems.
m. Special operating instructions and procedures.

5. Adjustments: Include the following:

a. Alignments.
b. Checking adjustments.
c. Noise and vibration adjustments.
d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:

a. Diagnostic instructions.
b. Test and inspection procedures.

7. Maintenance: Include the following:

a. Inspection procedures.
b. Types of cleaning agents to be used and methods of cleaning.
c. List of cleaning agents and methods of cleaning detrimental to product.
d. Procedures for routine cleaning
e. Procedures for preventive maintenance.
f. Procedures for routine maintenance.
g. Instruction on use of special tools.

8. Repairs: Include the following:

a. Diagnosis instructions.
b. Repair instructions.
c. Disassembly; component removal, repair, and replacement; and reassembly instructions.

d. Instructions for identifying parts and components.
e. Review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.

B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.

B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. Architect will furnish an instructor to describe basis of system design, operational requirements, criteria, and regulatory requirements.
2. Owner will furnish an instructor to describe Owner's operational philosophy.
3. Owner will furnish Contractor with names and positions of participants.

C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

1. Schedule training with Owner [**, through Architect,**] with at least [**seven**] days' advance notice.

D. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of [**a written**] performance-based test.

E. Demonstration and Training Videotape: Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.

1. Comply with requirements in Division 1 Section "Photographic Documentation."
2. At beginning of each training module, record each chart containing learning objective and lesson outline.

F. Cleanup: Collect used and leftover educational materials and [**give to Owner**]. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

END OF SECTION

SECTION 02 41 13

SELECTIVE DEMOLITION

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 this Section.

1.2 SUMMARY

A. This Section requires the selective removal and subsequent offsite disposal of the following as indicated on the drawings:

1. Portions of existing building indicated on drawings.
2. Removal of interior partitions as indicated on drawings.
3. Removal of doors and frames indicated "remove."
4. Removal of built-in casework indicated "remove."
5. Removal of spray-on fire protection on steel structure.
6. Removal and protection of existing fixtures, materials, and equipment items indicated "salvage."
7. Removal of existing floor finishes.
8. Removal of existing ceiling panels and suspension grid.
9. Removal of all mechanical, electrical and plumbing systems and all related components, accessories, etc.

B. Removal work specified elsewhere:

1. Cutting floors, ceilings, and masonry walls for piping, ducts, and conduits is included with the work of the removal of materials for reuse and incorporation into remodeling or new construction.

1.3 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections. The electrical services for the Annex also serves the Historic Courthouse. The Historic Courthouse will be occupied at all times and the Annex will have portions of it occupied after the work is completed. Therefore, ensure that all services serving the Historic Courthouse and undisturbed areas of the Annex remain in place and operable. This includes the Sprinkler System, Fire Alarm System, Emergency Power, Power, Plumbing systems, and any mechanical systems as indicated.

B. Schedule indicating proposed sequence of operations for selective demolition work to Owner's

Representative for review prior to start of work. Include coordination for shutoff, capping, and continuation of utility services as required, together with details for dust and noise control protection.

1. Provide detailed sequence of demolition and removal work to ensure uninterrupted progress of Owner's on-site operations.
2. Coordinate with Owner's continuing occupation of portions of existing building and with Owner's partial occupancy of completed new addition.

C. Photographs of existing conditions of structure surfaces, equipment, and adjacent improvements that might be misconstrued as damage related to removal operations. File with Owner's Representative prior to start of work.

1.4 JOB CONDITIONS

A. Occupancy: Owner will not occupy portions of the building immediately adjacent to areas of selective demolition. Conduct selective demolition work in a manner that will minimize need for disruption of Owner's normal operations in adjacent buildings.

B. Condition of Structures: Owner assumes no responsibility for actual condition of items or structures to be demolished.

1. Conditions existing at time of inspection for bidding purposes will be maintained by Owner insofar as practicable. However, minor variations within structure may occur by Owner's removal and salvage operations prior to start of selective demolition work.

C. Partial Demolition and Removal: Items indicated to be removed but of salvageable value to Contractor may be removed from structure as work progresses. Transport salvaged items from site as they are removed.

1. Storage or sale of removed items on site will not be permitted.

D. Protections: Provide temporary barricades and other forms of protection to protect Owner's personnel and general public from injury due to selective demolition work.

1. Provide protective measures as required to provide free and safe passage of Owner's personnel and general public to occupied portions of building.
2. Erect temporary covered passageways as required by authorities having jurisdiction.
3. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structure or element to be demolished and adjacent facilities or work to remain.
4. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.
5. Protect floors with suitable coverings when necessary.
6. Construct temporary insulated dustproof partitions where required to separate areas where noisy or extensive dirt or dust operations are performed. Equip partitions with

dustproof doors and security locks.

7. Provide temporary weather protection during interval between demolition and removal of existing construction on exterior surfaces and installation of new construction to ensure that no water leakage or damage occurs to structure or interior areas of existing building.
8. Provide negative pressure and all other remediation means and requirements while removing any hazardous materials.
9. Remove protections at completion of work.

E. Damages: Promptly repair damages caused to adjacent facilities by demolition work.

F. Traffic: Conduct selective demolition operations and debris removal to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.

1. Do not close, block, or otherwise obstruct streets, walks, or other occupied or used facilities without written permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

G. Flame Cutting: Do not use cutting torches for removal until work area is cleared of flammable materials. At concealed spaces, such as interior of ducts and pipe spaces, verify condition of hidden space before starting flame-cutting operations. Maintain portable fire suppression devices during flame-cutting operations.

H. Utility Services: Maintain existing utilities in service and protect them against damage during demolition operations.

1. Do not interrupt utilities serving occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.
2. Maintain fire protection services during selective demolition operations.

I. Environmental Controls: Use water sprinkling, temporary enclosures, and other methods to limit dust and dirt migration. Comply with governing regulations pertaining to environmental protection.

1. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 PREPARATION

A. General: Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of areas to be demolished and adjacent facilities to remain.

1. Cease operations and notify Owner's Representative immediately if safety of structure appears to be endangered. Take precautions to support structure until determination is made for continuing operations.

2. Cover and protect furniture, equipment, and fixtures from soilage or damage when demolition work is performed in areas where such items have not been removed.
3. Erect and maintain dust-proof partitions and closures as required to prevent spread of dust or fumes to occupied portions of the building.
   a. Where selective demolition occurs immediately adjacent to occupied portions of the building, construct dust-proof partitions of minimum 3-5/8" studs, 5/8-inch drywall (joints taped) on occupied side, 1/2-inch fire-retardant plywood on demolition side. Fill partition cavity with sound-deadening insulation.
   b. Provide weatherproof closures for exterior openings resulting from demolition work.
4. Locate, identify, stub off, and disconnect utility services that are not indicated to remain.
   a. Provide bypass connections as necessary to maintain continuity of service to occupied areas of building. Provide minimum of 72 hours advance notice to Owner if shutdown of service is necessary during changeover.

3.2 DEMOLITION

A. General: Perform selective demolition work in a systematic manner. Use such methods as required to complete work indicated on Drawings in accordance with demolition schedule and governing regulations.
   1. Demolish concrete and masonry in small sections. Cut concrete and masonry at junctures with construction to remain using power-driven masonry saw or hand tools; do not use power-driven impact tools.
   2. Locate demolition equipment throughout structure and promptly remove debris to avoid imposing excessive loads on supporting walls, floors, or framing.
   3. Provide services for effective air and water pollution controls as required by local authorities having jurisdiction.
   4. Demolish foundation walls to a depth of not less than 12 inches below existing ground surface. Demolish and remove below-grade wood or metal construction. Break up below-grade concrete slabs.
   5. For interior slabs on grade, use removal methods that will not crack or structurally disturb adjacent slabs or partitions. Use power saw where possible.
   6. Completely fill below-grade areas and voids resulting from demolition work. Provide fill consisting of approved earth, gravel, or sand, free of trash and debris, stones over 6 inches in diameter, roots, or other organic matter.

B. If unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to Owner's Representative in written, accurate detail. Pending receipt of directive from

Owner's Representative, rearrange selective demolition schedule as necessary to continue overall job progress without undue delay.

3.3 SALVAGED MATERIALS

A. Salvaged Items: Where indicated on Drawings as "Salvage - Deliver to Owner," carefully remove indicated items, clean, store, and turn over to Owner and obtain receipt. Also, Owner will review the extent of items to be salvaged with the Contractor prior to removal.

3.4 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove from building site debris, rubbish, and other materials resulting from demolition operations. Transport and legally dispose off site.

1. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution.
2. Burning of removed materials is not permitted on project site.

B. See Hazardous Materials Report.

3.5 CLEANUP AND REPAIR

A. General: Upon completion of demolition work, remove tools, equipment, and demolished materials from site. Remove protections and leave interior areas broom clean.

1. Repair demolition performed in excess of that required. Return elements of construction and surfaces to remain to condition existing prior to start operations. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

END OF SECTION

SECTION 03 30 00

CONCRETE WORK

PART 1 - GENERAL

1.01 SCOPE

A. This section shall include all labor, materials, accessories, equipment, and related services for the construction of concrete forms; detailing, fabrication, transportation, storage, handling, and placement of reinforcing; and mix design, testing, and placement of concrete as shown on the drawings and/or specified herein.

1.02 REFERENCE STANDARDS

A. The following publications, but referred to in this section by their basic designation, form a part of this section to the extent specified herein or called for on the drawings:

1. American Concrete Institute (ACI), publications:
    a. Standard Tolerances for Concrete Construction and Materials.
    b. Specification for Structural Concrete for Buildings.
    c. Recommended Practice for Measuring, Mixing, and Placing Concrete.
    d. Hot weather Concreting.
    e. Cold Weather Concreting.
    f. Standard Practice for Consolidation of Concrete.
    g. Building Code Requirements for Reinforced Concrete.
    h. Recommended Practice for Concrete Formwork.
    i. Recommended Practice for Shotcreting.
    j. Detailing Manual
2. Concrete Reinforcing Steel Institute (CRSI), publications:
    a. CRSI-Manual of Standard Practice
    b. CRSI-Placing Reinforcing Bars
3. American Society for Testing and Materials (ASTM) publications:
    a. Standard Specification for Welded Steel Wire Fabric for Concrete Reinforcement.
    b. Standard Specification for Deformed and Plain Billet - Steel Bars for Concrete Reinforcement with Supplementary Requirements S1.
    c. Standard Specification for Rail Steel Deformed and Plain Bars for Concrete Reinforcement.
    d. Standard Specification for Axle Steel Deformed and Plain Bars for Concrete Reinforcement.

e. Standard Method of Making and Curing Concrete Test Specimens in the Field.
f. Standard Specification for Concrete Aggregates.
g. Standard Method of Test for Compressive Strength of Cylindrical Concrete Specimens.
h. Standard Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
i. Standard Specification for Ready-Mixed Concrete.
j. Standard Specification for Aggregate for Masonry Mortar.
k. Standard Specification for Portland Cement.
l. Standard Method of Sampling Fresh Concrete.
m. Standard Method of Making and Curing Concrete Test Specimens in the Laboratory.
n. Standard Specification for Air-Entraining Admixtures for Concrete.
o. Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
p. Standard Specification for Chemical Admixtures for Concrete.
q. Standard Specifications for Performed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resistant Bituminous Types)

3. American Welding Society (AWS) publication
   a. AWS D1.4-79 Structural Welding Code-Reinforcing Steel.
4. International Building Code
5. American Institute of Steel Construction (AISC) publications:
   a. Manual of Steel Construction
6. American Institute of Timber Construction (AITC) publications:
   a. Timber Construction Manual

1.03 SUBMITTALS

A. The Contractor shall submit to the Architect five (5) copies of the following information for review:
   1. Curing compound manufacturer's data sheets.

B. Two copies will be returned to the Contractor marked as follows:
   1. "No Exceptions Taken" - Indicates the information has been reviewed for conformance with contract documents and no exceptions have been taken. Proceed with the work.

2. "Exceptions Noted" - Indicates that the drawings have been reviewed for conformance with the contract documents and that exceptions have been taken. Contractor may proceed with the work provided he corrects work as noted. Resubmittal will not be required.

3. "Exceptions Noted - Resubmit" - Indicates that the drawings have been reviewed for conformance with the contract documents and that work may proceed on items to which no exceptions have been taken. After items to which exceptions have been taken are corrected, Contractor shall again submit copies for review.

4. "Resubmit" - Indicates that the drawings have been reviewed for conformance with the contract documents and are too incomplete or in an unacceptable condition for review. A notation will be made on the shop drawings as to the exceptions taken. Drawings shall be revised and resubmitted for review before proceeding with the work.

1.04 DESIGN OF FORMWORK

A. Responsibility

1. The design and engineering of the formwork as well as its construction shall be the responsibility of the Contractor.

2. Where concrete is cast against earth cut or an existing structure, such cut or structure shall be considered a form for which the Contractor shall be responsible.

B. Criteria

1. Except as specifically called for otherwise herein, all formwork shall meet the requirements of ACI 347, Chapter 4 and 6 of ACI 301 and Chapter 6 of ACI 318.

2. Specifically the formwork shall be designed as a minimum for the loads and lateral pressure outlined in paragraph 1.2 of ACI 347 and wind loads specified by the Standard Building Code. Design considerations and allowable stresses shall meet the above references and the applicable requirements of the AISC Manual of Steel Construction and the AITC Timber Construction Manual.

1.05 MIX DESIGN

A. Prior to concrete placement of any concrete, the concrete mix design the Contractor proposes to use for each type of concrete shall be submitted to the Architect for review.

B. The Concrete mix shall be proportioned to give a 28-day strength of the properties outlined in the drawings (e.g. 3,000/5000 psi) and other properties as specified herein as determined by laboratory tests in accordance with requirements specified herein.

C. The laboratory or laboratories which design and test the concrete mix shall be obtained by the

Contractor, approved by the Architect and paid for by the Contractor.

1.06 TESTING OF CONCRETE

A. A laboratory shall be obtained by the Contractor approved by the Architect and paid for by the Contractor for the purpose of sampling and testing of concrete.

B. The following samples shall be taken at the job site. If any material has been added to the concrete, tests shall be made after material has been added to the concrete.

1. For each 100 cubic yards, or fraction thereof, of concrete three test specimens shall be made and cured in accordance with ASTM C172 and C31. Each set of three cylinders shall have a numerical designation and each cylinder an alphabetical subdesignation. Thus, the first set of three cylinders shall be numbered 1A, 1B, and 1C. One cylinder shall be broken at 7 days and two at 28 days. The average of the two 28-day cylinder breaks shall be considered one test. Cylinders shall be broken in accordance with ASTM C39.

2. For each 100 cubic yards, or fraction thereof, of concrete a slump test shall be made in accordance with ASTM C143 and the density and air content shall be determined in accordance with ASTM C172 and C31.

1.07 SHOP DRAWINGS

A. The Contractor shall furnish drawings, schedules, and details for the fabrication of the reinforcing steel AND the phasing of excavation and new concrete placement. The drawings and details shall be so complete that when used with the contract drawings the reinforcing steel can be properly placed. In addition, shop drawings showing all footing details, CMU details and slab details. All shop related shop drawings to be submitted with a professional engineer's stamp in this discipline.

B. In case the Contractor is in doubt regarding certain dimensions shown on the contract drawings, or if there is a discrepancy on the contract plans, the Contractor or his agent shall circle and question such dimensions on his shop drawings. In such cases the dimensions shall be especially checked or supplied by the Architect.

C. All drawings for review must be submitted in five copies. Two sets shall be returned to the Contractor marked as follows:

1. "No Exceptions Taken" - Indicates the material has been reviewed for conformance with contract documents and no exceptions have been taken. Proceed with the work.

2. "Exceptions Noted" - Indicates that the material has been reviewed for conformance with the contract documents and that exceptions have been taken. Contractor may proceed with the work provided he corrects the work as noted. Resubmittal will not be required.

3. "Exceptions Noted - Resubmit" - Indicates that the material has been reviewed for conformance with the contract documents and that work may proceed on items to which no exceptions have been taken. After items to which exceptions have been taken are corrected, Contractor shall again submit copies for review.

4. "Resubmit" - Indicates that the material has been reviewed for conformance with the contract documents and is too incomplete or in an unacceptable condition for review. A notation will be made as to the exceptions taken. Material shall be revised and resubmitted for review before proceeding with the work.

E. In case exceptions are noted on one sheet which affect details on other sheets, the exception is to be taken as applying to such other details.

F. Review of shop drawings by the Architect or Engineer shall not constitute an authorization or approval of a change to the contract. Changes from the contract documents must be made by written change order and issued by the Architect.

G. Work must not proceed on items to which exceptions have been taken.

H. The Contractor must check and be responsible for the conforming of all steel reinforcing details shown on shop drawings to those shown on the Contract drawings.

I. All bars shall be shown on shop drawings as to number, size, length, and spacing in a manner similar or complementary to the way they are shown on contract drawings.

1.08 QUALITY CONTROL

A. Should misalignment of forms or screeds or deflection of forms or displacement of reinforcement occur during concrete placing, corrective measures shall be immediately made to the extent that placing operations shall be stopped and concrete removed from within forms. The corrective measures shall be such as to ensure acceptable lines and surfaces to the prescribed dimensions and cross sections.

B. Any work not meeting the requirements of this section shall be deemed in non-compliance and shall be removed or corrected at no additional expense to the Owner.

C. The Contractor shall prepare for the Architect's review his proposed method of removal or correcting any work which is in non-compliance prior to commencing with the work.

D. Any work which is in non-compliance and is allowed to remain in place by the Architect shall be made a part of this contract by issuing a change order as set forth in the General Conditions of this specification.

E. Should displacement of reinforcing steel occur during concrete placement, corrective measures shall be immediately made to the extent that placing operations shall be stopped and concrete removed from within the forms.

F. To comply with this specification, concrete shall obtain its design strength at the 28-day break. Any

concrete not obtaining its design strength as determined by the 28-day break shall be considered as not complying to this specification.

G. The results of the concrete tests shall be evaluated in accordance with paragraphs 17.2 of ACI Standard 301.

H. If compressive tests fail to meet the specified strength, the following procedures shall be followed: The Architect shall determine if the concrete has been placed in a position of critical structural importance. If the concrete has been placed in a position of critical structural importance, the Contractor shall have core tests made by a testing laboratory approved by the Architect. Core tests shall be done in accordance with ASTM C42 and paragraph 17.3.2 of ACI Standard 301. These core tests shall be taken in each area in question. Such tests shall be paid for by the Contractor. If core tests fail to verify the design strength requirements, the Contractor will have two options:

1. Remove and reconstruct that portion of the structure found to be defective. Removal and replacement will not be undertaken until a plan and procedure has been proposed by the Contractor and approved by the Architect. All such work shall be done at the Contractor's expense.

2. Have a testing laboratory approved by the Architect conduct a load test on the questionable portion of the structure in accordance with Chapter 20 of ACI Building Code 318. If the test demonstrates that the member or members are not acceptable under the provisions of Chapter 20, Option One becomes mandatory. All costs of the load test shall be paid for by the Contractor.

I. If tests, either by the 28-day break or core tests, have demonstrated that concrete supplied has not met the strength requirements of the specifications, but the concrete has been permitted to remain in place in the structure by the Architect, a change order shall be issued as set forth in the General Conditions Section of these specifications.

PART 2 - PRODUCT

2.01 FORMS

A. Forms for unexposed work or surfaces covered by a non-contact finish.

1. Where work is to be covered by a non-contact finish or not exposed to view, forms of metal, metal and wood, wood, or a pre-engineer forming system will be accepted.

B. Forms for exposed work or surfaces covered by a contact finish.

1. Where work is to be left exposed, or concrete surface is covered by a contact finish, forms shall either be plywood, lined plank, or patented type panels. All plywood shall receive non-staining protective coating that affords positive release.

2. Forms shall not be reused when the surface material delaminates, splits, or becomes marred.

2.02 APPURTENANCES

A. Form Ties

1. Except for exposed work or Architecturally exposed concrete, snap ties may be used for wall forms. Pull ties, which are to be completely removed, or cone type break back ties that will leave clean cut holes without fractures, spalls, shallows, depressions, or other disfigurations shall be used for all exposed work, and Architecturally exposed concrete.

B. Expansion Joint Material

1. Expansion joint material shall meet ASTM C1751.

2.03 REINFORCING

A. Reinforcing steel shall meet ASTM A-615, ASTM 616, or ASTM 617, and develop 60,000 psi at yield.

B. Wire mesh shall meet ASTM A-185.

2.04 ACCESSORIES

A. Bar supports shall meet the requirements of CRSI, Manual of Standard Practice, unless specified otherwise herein.

B. Legs of all accessories used over exposed concrete surfaces shall have that portion of the accessories in contact with the form coated with plastic, or the accessory shall be of stainless steel.

2.05 CEMENT

A. All cement used on this construction for exposed concrete shall be one brand of Portland cement. All cement shall be Type 1 and meet the requirements of ASTM 150.

2.06 AGGREGATES

A. Samples of both coarse and fine aggregates shall be selected by the Contractor at the beginning of the work, and following approval of laboratory tests, shall be used throughout the work as standards to which the aggregate must conform.

1. Fine aggregates shall conform to ASTM C33.

2. Coarse aggregates for regular weight concrete shall conform to ASTM C33 and shall be sized within the limits as established by Table 2, 1" to #4.

2.07 WATER

A. Water shall be clean, free from oil, acid, vegetable matter, alkalies or salts.

2.08 ADMIXES

A. Admixes shall conform to ASTM C-494 and not contain any chloride ions.

2.09 AIR ENTRAINMENT

A. Air entraining agent shall conform to ASTM C260.

2.10 ABRASIVE AGGREGATES

A. Abrasive aggregates shall be aluminum oxide or carborundum and have a hardness factor of 9 mohs.

2.11 CURING COMPOUND

A. Curing compound for unformed surfaces without a surface applied cementitious bonding agent or fill.

1. Curing compound shall be formulated by the manufacturer not to interfere with the bond of or adhesion of resilient floor coverings, paints, sprayed on or applied finishes, water-proofing materials, other types of finish, or curing compounds.
2. Curing compound shall be a combination sealer-hardener and dust-proofer.
3. Curing compound shall be a membrane forming resin containing 18% minimum solids with a fugitive dye meeting the requirements of ASTM C309, Type 1-D, Class A.
4. The following products are approved:

Spartan Cote	-	The Burke Company
Rez. Seal	-	Euclid
SealCo	-	Gifford Hill
Clearbond	-	Guardian
Dress & Seal #18	-	L&M Construction Chemicals
Clear Seal 150	-	AC Horne
MB429	-	Master Builders
Kure-N-Seal, 0800	-	Sonneborn
C5309	-	WR Meadows

B. Curing compounds for formed concrete surfaces exposed to view.

1. Curing compound shall be formulated not to interfere with the bond or adhesion of any applied coating or covering.
2. Curing compound shall be a penetrating compound with a fugitive dye meeting the requirements of ASTM C309, Type 1D.

3. The following products are approved.

Cure Concentrate	-	The Burke Co
Eucosil	-	Euclid
L&M Cure	-	L&M Construction Chemicals
Horne One Kote	-	AC Horne
Master Seal	-	Master Builders

2.12 PROPORTIONS

A. All concrete shall provide the ultimate compressive strength at 28 days, as determined by laboratory cured cylinders, as shown on the drawings. All mix designs shall be proportioned in accordance with one of the following methods.

1. ACI 318, Section 4.3, Proportioning on the basis of field experience and/or trial mixtures.
2. ACI 318, Section 4.4, Proportioning by water cement ratio.

B. The mix shall be so proportioned so that the average of any three consecutive strength tests shall be equal to or greater than the strength specified on plans, and no test shall have a value less than the specified strength less 3000 psi.

C. Minimum cement content for regular concrete shall be as follows:

1. REGULAR WEIGHT CONCRETE:

3,000 psi concrete 498# (5.3 bags)
5,000 psi concrete 705# (7.5 bags)
For pump mixes add 47# (0.5 bags) to the above quantities.

D. The water-cement ration of the mix shall be established in the design and shall be based on the established relationship between the water-cement ration and the strength of concrete shall be such as to produce the specified strength of the concrete with the least amount of water consistent with the workability of the mix. Surface water contained in the aggregate shall be included as part of the mixing water in computing the water content. The design shall provide for a slump range of 3"minimum, 5" maximum.

E. To each sack of cement the following amount of admix shall be provided:

1. Air temperature above 80 degrees F

3 oz. - Master Builders - Pozzolith 300R
3 oz. - Protex PDA 25XL

2 oz. - Sika Chemical Co. - Plastement
2 oz. - Gifford Hill PSI - Normal
2 oz. - Castle Chemical Corp. - Chemstrong R
2 oz. - Construction Chemical Co - Trisene N
5 oz. - Grace - WRDA-79

2. Air Temperature between 50 and 80 degrees F.

3 oz. - Master Builders Pozzolith 300N
3 oz. - Protex PBA 25R
3 oz. - Sika Chemical Do. - Plastement NS
3 oz. - Gifford Hill PSI - Retarder
3 oz. - Castle Chemical Corporation - Chemstrong A
3 oz. - Construction Chemical Co - Trisene R
7.5 oz. - Grace - WRDA

3. Air temperature below 50 degrees F.

8 oz. - Master Builders - Pozzutec 20
8 oz. - Sika Chemical Co. - Plastorcrete 161 PC
12 oz. - Grace - Darex

2.13 FABRICATION

A. All reinforcing shall be fabricated. Fabrication shall be in accordance with applicable sections, ACI 301, ACI 318, ACI-SP66, and CRSI Manual of Standard Practice. All bends shall be made cold around pins having a diameter of not less than that specified in the bend test ofthe applicable ASTM specifications. Heating bars for bending is prohibited without the written approval of the Architect.

B. Reinforcement shall be correct in length and size and bent as prescribed by contract drawings or specifications.

PART 3 - EXECUTION

3.01 PREPARATION

A. Excavations

1. Where excavations exceeding a depth of five feet are to be made to install the foundations or any part of the structure of this building or any retaining walls on the site, the back slope of such excavation shall be at an incline not exceeding one vertical to two horizontal unless such backslope is sheeted and braced. If sheeting and bracing are to be provided, such sheeting and bracing shall be designed by an Engineer registered in the state where the project is located. Such sheeting and bracing shall be designed to resist the pressures given on pages 14-32 of the CRSI Design Handbook unless more specific pressures are determined by a Registered Soils Engineer. The cost of such design work and installation shall be paid for by the Contractor at no additional cost to the Owner.
2. No excavation shall be made below a line extending downward and away from any foundation grade slab or other building element on a slope one vertical or two horizontal, unless such foundation, grade slab, or other building element is under pinned. The underpenning shall be designed by an Engineer registered in the state where the project is located. The cost of such design work and installation shall be paid for by the Contractor at no additional cost to the Owner.

B. Treat excavated soil for termites as required by industry standards.

C. Care of Materials
1. Shipping, storage and handling of reinforcing steel shall be in such a manner as to prevent damage.
2. Straightening of bars bent in shipping or handling will not be undertaken except when so directed by change order.

D. Cleaning
1. Reinforcing shall be cleaned of grease, dirt, concrete, or other foreign substances.

3.02 INSTALLATION

A. Construction of Forms
1. All forms shall be built and secured in place to carry the dead weight of the concrete as a liquid without deflection or distortion exceeding the requirements of ACI 347. Formwork shall be built watertight, true to position and direction. Formwork shall be constructed so as to ensure the concrete surfaces will conform to the tolerances given in ACI 347.
2. All concrete surfaces that are to be left exposed on interior and exterior of the building shall have the forms so constructed that when removed they will produce a uniform smooth surface free from misalignment and imperfections.
3. Where new concrete is placed above a previous placement, the joint between new and old

work, as well as the face of the concrete surface, must be aligned.

4. All wood forms shall be built of sound lumber. Clean and remove nails from form material before reusing or when using second-hand lumber.
5. Unless indicated otherwise on the drawings, all columns shall be centered on the foundations supporting them within a tolerance of 2".
6. Where earth is too unstable to serve as a form for foundations or walls, wood forms shall be provided.
7. Box out all slots, recesses, or openings for work of all trades.
8. Build bulkheads with keys in walls and footings at construction joints in concrete.
9. Bevel strips shall be placed at all outside corners of exposed work unless shown otherwise on architectural details.
10. All overhanging edges shall be provided with a 1/2" quarter round drip 2" from the edge.

B. Installing other material in forms

1. Expansion joint fillers shall be installed in the forms, where called for on plans, in advance of the pour. 8d nails of 2'-0" o.c. shall be placed through the filler so that when concrete is placed, the nails will be embedded so as to lock the filler in place.
2. Compact earth fill under slabs on grade in eight inch layers with mechanical equipment to obtain a compaction of 95% standard proctor, unless specified otherwise.
3. Provide 6 mil polyethylene film vapor barrier under all slabs on grade.
4. Fill for slabs on grade shall be #57 stone, 4" thick, where shown on drawings.

C. Placement of Reinforcement

1. Reinforcement shall be placed to conform with the recommendations of ACI 301, ACI 318, and CRSI Manual of Standard Practice.
2. Bars shall not be cut or bent in the field unless specifically called for on detail drawings.
3. Bars with kinks or bends not shown on detail drawings shall not be used.
4. Contract drawings shall take precedence over Contractor's working drawings unless otherwise authorized by written change order.
5. Contract drawings shall be referred to by the steel setter for details governing placing.
6. Vertical steel shall be lapped 30 diameters at splices unless specifically called for otherwise on plans.
7. Steel dowels for successive work shall be wired in the prescribed position before placing concrete. The "sticking" of dowels after placing concrete will not be permitted.
8. Hooks may be turned flat to facilitate placement.

9. Concrete covering for reinforcing steel shall be as follows unless shown otherwise on drawings:
   a. Concrete cast against and permanently exposed to earth: 3"
   b. Concrete exposed to earth or weather:
      #6 through #18 bars: 2"
      #5 bar, W31 or D31 wire, and smaller: 1-1/2"
   c. Concrete not exposed to weather or in contact with ground:
      Slabs, walls
      #14 and #18 bar: 1-1/2"
      #11 bar and smaller: 3/4"
10. No splicing of main reinforcing steel will be permitted unless shown otherwise on plans. Bars marked continuous shall be lapped 30 diameters at splices, and at corner conditions corner bars shall be provided.
11. No reinforcing shall be cut in the field unless it is called for to be cut on the reviewed shop drawings.
12. No reinforcing shall be bent in the field unless it is called for to be bent on the reviewed shop drawings.

D. Placement of Wire Mesh
   1. Welded wire fabric shall be lapped 6" at both side and end laps unless shown otherwise on drawings and wire together at 18"o.c. Mesh shall extend to within 2" of sides and end of slabs.

3.03 WELDING OF REINFORCEMENT

A. All reinforcing bars which are to be welded shall be welded in accordance with AWS D1.4.

3.04 MIXING

A. All materials shall be measured and mixed in a machine. Mixing and transporting shall meet ASTM C94. The materials shall first be mixed dry and the water then added by measurement.

B. Mixing time shall begin when the water is added to the mix.

C. Water shall not be added to the mix at the job site except under the direction of the laboratory responsible for testing (paragraph 1.06). The laboratory shall instruct that a fixed amount of cement shall be added to maintain the water-cement ratio. The mixer shall be turned 50 revolutions after the addition of water.

D. A slump test shall be made of any concrete to which water has been added to ascertain that the slump does not exceed 5" for regular mixes and 6" for pump mixes.

E. A record shall be kept of any concrete to which water has been added, and the record shall show the

results of the slump test.

3.05 PREPARATION

A. Before the placing of any concrete the footing trenches shall be drained of water, any mud film removed and any loose dirt lifted out.

B. Before placing concrete in forms the forms shall be cleaned and all debris removed. All reinforcing shall be checked to be sure that no reinforcing is touching the form or pan sides. A man shall be designated during the pour to keep the steel in the prescribed position.

C. Before placing any concrete it shall be determined that all conduits, pipes, sleeves, inserts, hangers, steel equipment, grounds, anchors, and other work that is to be built into the concrete is located and installed. All such items shall be so placed as not to interfere with the reinforcing steel.

D. No concrete shall be placed until the Architect has observed the reinforcement.

E. Wood board forms shall be soaked with water first before the concrete is placed.

F. Metal forms shall be oiled before reinforcement is placed.

G. All reinforcement shall be supported and fastened in prescribed position and protected against displacement during pouring operations.

H. A workman shall be designated to lift mesh reinforcing off the ground or the bottom of forms as concrete is placed.

I. Concrete temperature at time of placement shall be as follows:

Temperature F Degrees	Concrete Temperature Maximum	F Degrees Minimum
Above 75	90	75
50 - 75	90	75
40 - 50	90	65
30 - 40	90	55
0 - 30	90	65
Below 0	90	70

J. Cold Weather Concreting

1. Cold weather concreting procedures shall be used when temperature at job site is 40 degrees or below at time of concrete placement as follows:

   a. Heat ingredients as necessary to produce a mix temperature at time of placement

as specified herein.

b. Concrete shall be heated, insulated, and protected as necessary to maintain a concrete temperature of 40 degrees F minimum for 72 hours after placement.

c. Accelerating agents shall not be used unless approval from the Architect has been obtained.

2. ACI 306R should be used as a guide in determining proper procedures for cold weather concreting.

K. Hot Weather Concreting

1. Hot weather concreting procedures shall be used when temperature a job site is 75 degrees F or above at time of concrete placement or wind or humidity is such to result in shrinkage cracking as follows:

a. Cool materials necessary to produce a mix temperature at time of placement as specified herein.

b. Mix time shall not exceed one hour from time of initial mix.

c. Concrete once discharged from truck shall be placed in its final position within 30 minutes from time of discharge.

d. Placed concrete shall be cooled or protected as necessary to maintain a concrete temperature of 120 degrees maximum for 48 hours after placement.

e. Retarding agents shall not be used unless approval from the Architect has been obtained.

2.ACI 305R should be used as a guide in determining proper procedures for cold weather concreting.

3.06 TRANSPORTING CONCRETE

A. Concrete shall be handled from the mixer to the place of final deposit by means of carts, buggies, conveyor, or pump in accordance with ACI 304. If the concrete is to be transported more than fifty feet in carts or buggies they shall be equipped with pneumatic tires. Concrete delivered to the carts, buggies, or conveyors from spouts, troughs or mixer trucks shall not have a free fall of more than three (3) feet. Prevent separation or loss of ingredients while transporting the concrete.

3.07 CASTING

A. It shall be the responsibility of the Contractor to consider the temperature and humidity in scheduling the time interval between mixing and placing. No partially hardened concrete shall be placed. Placement

shall meet the requirements of ACI 304.

B. Special care shall be observed to avoid concrete spilling over forms when placing.

C. Placing of concrete shall be rapid and continuous between construction joints. Concrete shall not be placed when the sun, wind, heat, or humidity prevent placement and consolidation.

D. Special care shall be taken in spading concrete around gangs of parallel conduit.

E. Concrete shall not be placed within twenty-five feet of workmen placing or securing reinforcement.

F. Internal type mechanical vibrators and hand spading shall be used to consolidate the concrete and produce a dense concrete free from voids and honeycombs. Care shall be taken that vibration is not applied long enough to separate the ingredients. Use and type of vibrators shall conform to ACI 309.

G. Hand spreading shall be done with shovels not rakes.

H. Before depositing the new concrete on or against concrete that has hardened, the forms shall be retightened, the surface of the hardened concrete roughened, cleaned of foreign matter than laitance and moistened with water. To ensure mortar at the juncture of the hardened and newly deposited concrete, the cleaned and moistened surface of the hardened concrete, including vertical and inclined surfaces, shall first be slushed with a coating of neat cement grout against which the new concrete shall be placed before the grout has attained its initial set. Before starting to place concrete in walls and columns a uniform layer of grout two inches thick shall be placed at the bottom of the forms or on top of the hardened concrete. The grout shall consist of one part cement and two parts sand with enough water to make a thick consistency.

I. All horizontal surfaces shall be screeded to an even surface by the use of a straight edge and screeding strips set at the level called for on plans. Screeds shall be of such type and so arranged as not to interfere with the top slab steel. Finish is specified in a following section.

3.08 PROTECTION

A. Workmen shall not walk on concrete during placing or finishing with any earth or foreign matter on footgear.

B. All freshly placed concrete shall be protected from damage or injury due to water, falling objects, persons or anything that might mar, discolor, or injure the finish surface of the concrete. Any surfaces that are damaged due to lack of protective measures shall be removed and replaced with fresh concrete at the expense of the Contractor.

3.09 FLOOR FINISHING

A. Floors, except those requiring a special finish, shall be finished as follows:

1. The surface of all concrete slabs, after screeding, shall be worked with a float in a manner

which will compact the concrete and produce a surface free of depressions or inequalities of any kind. Test for grade (or level) and correct by removing excess or adding and compacting additional concrete.

2. All floor slabs, except in areas dropped to receive finish, shall receive a steel trowel finish as follows:
   a. After screeding and floating slab surface and when concrete has hardened to prevent excess fines from working to the surface and surface water has disappeared, steel trowel slab to a smooth surface free from defects.
   b. After initial troweling and when surface produces a ringing sound as trowel is moved across surface, steel trowel the slab a second time. The drying of the surface moisture must proceed naturally and must not be hastened by sacking or dusting on of sand or cement.
3. Areas which are dropped to receive a finish, after floating, shall be roughened with a very coarse broom.
4. All concrete ramps, docks, and stair treads shall be dusted with abrasive aggregates at the rate of 25 pounds per 100 square feet. Abrasive aggregates shall be worked into concrete surface by trowelling.

3.10 CURING OF CONCRETE

A. Unformed Horizontal Surfaces

1. As soon as sheen of surface water has disappeared and the surface can be walked upon without damage (one or two hours) concrete surfaces shall be cured as follows:
   a. All interior slabs with resilient tile, carpet or left exposed shall be cured with the specified curing and sealing compound.
   b. All other interior slabs shall be cured with the specified dissipating resin type curing compound.
   c. All vertical surfaces shall be cured with the specified curing and hardening compound when forms are removed prior to completion of the curing period.
   d. The curing compounds must be applied immediately after final finishing.
   e. Where required, the curing and hardening compounds shall be applied to vertical surfaces immediately after forms have been removed.
   f. Sisalkraft paper, placed in a manner approved by the Engineer, may be used for any surface indicated above to be cured with the dissipating resin compound or the curing and hardening compound.

2. Surface traffic shall not be permitted on curing compound until curing compound is completely dry.

B. Formed Surfaces

1. Formed surfaces which are rubbed after forms are removed shall be covered with the curing and hardening compound at manufacturer's specified rate immediately after rubbing is completed.
2. Formed surfaces which are repaired or patched shall be covered with the curing and hardening compound at manufacturer's specified rate immediately after repairing and/or patching is complete.
3. No coating, sealer or other applied material shall be placed on concrete which received a curing compound until forty-five (45) days after curing compound has been in place.

3.11 TOLERANCES

A. Tolerances for concrete floor slabs shall meet the requirements of ACI 117, Class BX Slabs.

B. Where slabs abut at joints the differential elevation between abutting slabs shall be less than 1/16 inch.

3.12 EXPOSED CONCRETE SURFACES

A. Exposed concrete surfaces shall be finished as follows:

1. Surfaces shall be rubbed smooth with carborundum brick or other abrasive within 36 hours after forms are removed. Surfaces shall be wetted and rubbed until a uniform color and texture is produced. No cement grout or slush shall be used other than the cement paste drawn from the green concrete itself by the rubbing process.
2. The first panel that is to be finished shall be done in the presence of the Architect. When it is approved by the Architect, it shall serve as a standard to which all additional architecturally finished concrete shall conform.
3. Edges of exposed beams and columns shall be pointed up to present a straight, square appearance.

3.13 REMOVAL OF FORMS

A. Removal

1. Care shall be taken in the removal of the forms not to damage the surface of the concrete.

Immediately after the forms are removed, the Architect shall examine the concrete and determine the extent and magnitude of any damaged or imperfect work. The Architect shall determine what work shall be patched and what work shall be removed and rebuilt. Patching, where allowed, shall be done immediately. Patching shall be done as specified in these specifications.

2. The removal of shoring and stripping of forms shall be the responsibility of the Contractor. In no case shall forms for columns or walls be removed in less than two days.

3. All form ties shall be broken back at least 1/2" from the surface of concrete, and pull ties shall be removed.

3.14 PATCHING AND CORRECTION OF DEFECTIVE WORK

A. Any concrete which is not within the allowable tolerances as set forth in ACI 347, Section 203.1 shall be considered as not conforming to these specifications. Any concrete which is not formed as shown on the plans or is out of alignment or level or shows a defective surface shall be considered as not conforming to these specifications.

B. Any concrete as described above shall be removed from the job by the Contractor at his expense unless the Architect grants permission to patch or repair the defective area. Permission to patch or repair any such area shall not be considered a waiver of the Architect's right to require complete removal of the defective work if the patching does not, in his opinion, obtain the quality and appearance of the work as specified.

C. Within 24 hours after removing form, all concrete surfaces shall be inspected by the Architect. With the Architect's approval any honeycombs, voids, stone pockets and tie holes shall at once be patched before the concrete is dry. Defective areas shall be chipped away to a depth of not less than one inch (1") with the edges perpendicular to the surface. The area to be patched and a space at least six inches (6") wide entirely surrounding it shall be dampened with water to prevent absorption of water from the patching mortar. The specified bonding compound shall be applied to the damp concrete.

D. The patching shall be made of the same material and of the same proportions as used for the concrete except that the coarse aggregate shall be omitted. The amount of water used in mixing the mortar shall be consistent with the requirements of handling and placing. The mortar shall be retempered without the addition of water by allowing to stand for a period of one hour during which hour it shall be mixed with a trowel to prevent setting.

E. After the bonding compound has dried, the mortar shall be compacted into place. Every hole and void shall be filled solid and the mortar screeded off to leave the patch slightly higher than the surrounding surface. It shall then be left undisturbed for a period of one to two hours to permit initial shrinkage before being finally finished. The patch shall be finished in such a manner to match the adjoining

surface.

F. Where patching is not accomplished within 24 hours after removal of forms, the shotcrete method of applying concrete under pressure shall be used. Application of shotcrete shall meet ACI 506.

G. Where concrete or concrete work does not conform to the plans or to the specifications and is condemned by the Architect, procedures and plans covering removal and rebuilding or other corrective measures shall be submitted by the Contractor to the Architect before removal and rebuilding is begun. The cost of such plans, as well as the cost of corrective work or removal and rebuilding shall be at the Contractor's expense.

END OF SECTION

SECTION 042200 - CONCRETE UNIT MASONRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Concrete masonry units.
2. Steel reinforcing bars.

1.2 DEFINITIONS

A. CMU(s): Concrete masonry unit(s).

B. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For reinforcing steel. Detail bending, lap lengths, and placement of unit masonry reinforcing bars. Comply with ACI 315.

1.4 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each type and size of product. For masonry units, include **data on material properties**.

B. Mix Designs: For each type of mortar **and grout**. Include description of type and proportions of ingredients.

1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C109/C109M for compressive strength, ASTM C1506 for water retention, and ASTM C91/C91M for air content.
2. Include test reports, according to ASTM C1019, for grout mixes required to comply with compressive strength requirement.

1.5 FIELD CONDITIONS

A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

B. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

PART 2 - PRODUCTS

2.1 UNIT MASONRY, GENERAL

A. Masonry Standard: Comply with TMS 602/ACI 530.1/ASCE 6, except as modified by requirements in the Contract Documents.

B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects are exposed in the completed Work.

C. Fire-Resistance Ratings: Comply with requirements for fire-resistance-rated assembly designs indicated.

1. Where fire-resistance-rated construction is indicated, units shall be listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction.

2.2 CONCRETE MASONRY UNITS

A. Provide split-face concrete block, pre-stained, in two colors. Match existing CMU colors and grout.

B. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.

1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions. All interior, exposed outside block corners to be 1” radius.

C. Integral Water Repellent: Provide units made with integral water repellent.

D. Insulated CMUs: Where indicated, units shall contain rigid, specially shaped, molded-polystyrene insulation units complying with ASTM C578, Type I, designed for installing in cores of masonry units.

E. CMUs: ASTM C90.

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of [**2800 psi (19.3 MPa)**].
2. Density Classification: [**Lightweight**] [**Medium weight**] [**Normal weight**][**unless otherwise indicated**].

F. Concrete Building Brick: ASTM C55.

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of [**2800 psi (19.3 MPa)**].
2. Density Classification: [**Medium weight**].

2.3 CONCRETE LINTELS

A. Concrete Lintels: ASTM C1623, matching CMUs in color, texture, and density classification; and with reinforcing bars indicated. **Provide lintels with net-area compressive strength not less than that of CMUs.**

2.4 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

B. Hydrated Lime: ASTM C207, Type S.

C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.

D. Masonry Cement: ASTM C91/C91M.

E. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C979/C979M. Use only pigments with a record of satisfactory performance in masonry mortar.

F. Aggregate for Mortar: ASTM C144.

1. White-Mortar Aggregates: Natural white sand or crushed white stone.

2. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.

G. Aggregate for Grout: ASTM C404.

H. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C494/C494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.

I. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with CMUs containing integral water repellent from same manufacturer.

J. Water: Potable.

2.5 REINFORCEMENT

A. Uncoated-Steel Reinforcing Bars: ASTM A615/A615M or ASTM A996/A996M, Grade 60 (Grade 420).

B. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells and to hold reinforcing bars in center of cells. Units are formed from 0.148-inch (3.77-mm) steel wire, hot-dip galvanized after fabrication. Provide units designed for number of bars indicated.

C. Masonry-Joint Reinforcement, General: ASTM A951/A951M.

1. Interior Walls: [**Mill-**] galvanized, carbon steel.
2. Exterior Walls: [**Hot-dip galvanized carbon**] steel.
3. Wire Size for Side Rods: [**0.187-inch (4.76-mm)**] diameter.
4. Wire Size for Cross Rods: [**0.187-inch (4.76-mm)**] diameter.
5. Spacing of Cross Rods: Not more than 16 inches (407 mm) o.c.
6. Provide in lengths of not less than 10 feet (3 m)[**, with prefabricated corner and tee units**].

2.6 TIES AND ANCHORS

A. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated:

1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A82/A82M, with ASTM A153/A153M, Class B-2 coating.
2. Steel Sheet, Galvanized after Fabrication: ASTM A1008/A1008M, Commercial Steel, with ASTM A153/A153M, Class B coating.

3. Steel Plates, Shapes, and Bars: ASTM A36/A36M.

B. Partition Top Anchors: 0.105-inch- (2.66-mm-) thick metal plate with a 3/8-inch- (9.5-mm-) diameter metal rod 6 inches (152 mm) long welded to plate and with closed-end plastic tube fitted over rod that allows rod to move in and out of tube. Fabricate from steel, hot-dip galvanized after fabrication.

C. Rigid Anchors: Fabricate from steel bars 1-1/2 inches (38 mm) wide by 1/4 inch (6.35 mm) thick by 24 inches (610 mm) long, with ends turned up 2 inches (51 mm) or with cross pins unless otherwise indicated.

1. Corrosion Protection: [**Hot-dip galvanized to comply with ASTM A153/A153M**] [**Epoxy coating 0.020 inch (0.51 mm) thick**].

2.7 EMBEDDED FLASHING MATERIALS

A. Metal Flashing: Provide metal flashing complying with SMACNA's "Architectural Sheet Metal Manual" and as follows:

1. Stainless Steel: ASTM A240/A240M or ASTM A666, Type 304, 0.016 inch (0.40 mm) thick.
2. Copper: ASTM B370, Temper H00, cold-rolled copper sheet, 16-oz./sq. ft. (4.9-kg/sq. m) weight or 0.0216 inch (0.55 mm) thick or ASTM B370, Temper H01, high-yield copper sheet, 12-oz./sq. ft. (3.7-kg/sq. m) weight or 0.0162 inch (0.41 mm) thick.
3. Fabricate continuous flashings in sections 96 inches (2400 mm) long minimum, but not exceeding 12 feet (3.7 m). Provide splice plates at joints of formed, smooth metal flashing.
4. Fabricate metal drip edges from stainless steel. Extend at least 3 inches (76 mm) into wall and 1/2 inch (13 mm) out from wall, with outer edge bent down 30 degrees[**and hemmed**].
5. Fabricate metal sealant stops from stainless steel. Extend at least 3 inches (76 mm) into wall and out to exterior face of wall. At exterior face of wall, bend metal back on itself for 3/4 inch (19 mm) and down into joint 1/4 inch (6 mm) to form a stop for retaining sealant backer rod.
6. Fabricate metal expansion-joint strips from [**stainless steel**] [**copper**] to shapes indicated.

B. Flexible Flashing: Use **one of** the following unless otherwise indicated:

1. Copper-Laminated Flashing: [**5-oz./sq. ft. (1.5-kg/sq. m)**] [**7-oz./sq. ft. (2-kg/sq. m)**] copper sheet bonded between two layers of glass-fiber cloth. Use only where flashing is fully concealed in masonry.

2. Rubberized-Asphalt Flashing: Composite flashing product consisting of a pliable, adhesive rubberized-asphalt compound, bonded to a high-density, cross-laminated

polyethylene film to produce an overall thickness of not less than [**0.030 inch (0.76 mm)**] [**0.040 inch (1.02 mm)**].

3. Butyl Rubber Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than [**0.030 inch (0.76 mm)**] [**0.040 inch (1.02 mm)**].

4. Elastomeric Thermoplastic Flashing: Composite flashing product consisting of a polyester-reinforced ethylene interpolymer alloy.

5. EPDM Flashing: Sheet flashing product made from ethylene-propylene-diene terpolymer, complying with ASTM D4637/D4637M, 0.040 inch (1.0 mm) thick.

C. Single-Wythe CMU Flashing System: System of CMU cell flashing pans and interlocking CMU web covers made from UV-resistant, high-density polyethylene. Cell flashing pans have integral weep spouts designed to be built into mortar bed joints and that extend into the cell to prevent clogging with mortar.

D. Solder and Sealants for Sheet Metal Flashings: As specified in Section 076200 "Sheet Metal Flashing and Trim."

E. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.

2.8 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from [**neoprene**] [**urethane**] [**or**] [**PVC**].

B. Preformed Control-Joint Gaskets: Made from [**styrene-butadiene-rubber compound, complying with ASTM D2000, Designation M2AA-805**] [**or**] [**PVC, complying with ASTM D2287, Type PVC-65406**] and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

C. Bond-Breaker Strips: Asphalt-saturated felt complying with ASTM D226/D226M, Type I (No. 15 asphalt felt).

2.9 MASONRY-CELL FILL

A. Loose-Fill Insulation: Perlite complying with ASTM C549, Type II (surface treated for water repellency and limited moisture absorption) or Type IV (surface treated for water repellency and to limit dust generation).

B. Lightweight-Aggregate Fill: ASTM C331/C331M.

2.10 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.
2. Use [**portland cement-lime**] [**or**] [**masonry cement**] mortar unless otherwise indicated.
3. For exterior masonry, use [**portland cement-lime**] [**or**] [**masonry cement**] mortar.
4. For reinforced masonry, use [**portland cement-lime**] [**or**] [**masonry cement**] mortar.
5. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

C. Colored-Aggregate Mortar: Produce required mortar color by using colored aggregates and natural color or white cement as necessary to produce required mortar color.

1. Application: Use colored-aggregate mortar for exposed mortar joints with the following units:

a. Decorative CMUs.
b. Pre-faced CMUs.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

3.2 TOLERANCES

A. Dimensions and Locations of Elements:

1. For dimensions in cross section or elevation, do not vary by more than plus 1/2 inch (12 mm) or minus 1/4 inch (6 mm).
2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch (12 mm).
3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch (6 mm) in a story height or 1/2 inch (12 mm) total.

B. Lines and Levels:

1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 feet (6 mm in 3 m), or 1/2-inch (12-mm) maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2-inch (12-mm) maximum.
3. For vertical lines and surfaces, do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), 3/8 inch in 20 feet (9 mm in 6 m), or 1/2-inch (12-mm) maximum.
4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2-inch (12-mm) maximum.
5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 feet (6 mm in 3 m), 3/8 inch in 20 feet (9 mm in 6 m), or 1/2-inch (12-mm) maximum.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm), with a maximum thickness limited to 1/2 inch (12 mm).
2. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch (9 mm) or minus 1/4 inch (6 mm).
3. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm).

3.3 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less-than-nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.

C. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

D. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.

E. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below, and rod mortar or grout into core.

F. Fill cores in hollow CMUs with grout 24 inches (600 mm) under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.

3.4 MORTAR BEDDING AND JOINTING

A. Lay hollow CMUs as follows:

1. Bed face shells in mortar and make head joints of depth equal to bed joints.
2. Bed webs in mortar in all courses of piers, columns, and pilasters.
3. Bed webs in mortar in grouted masonry, including starting course on footings.
4. Fully bed entire units, including areas under cells, at starting course on footings where cells are not grouted.

B. Lay solid CMUs with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

D. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.

3.5 MASONRY-CELL FILL

A. Pour [**loose-fill insulation**] into cavities to fill void spaces. Maintain inspection ports to show presence of fill at extremities of each pour area. Close the ports after filling has been confirmed. Limit the fall of fill to one story high, but not more than 20 feet (6 m).

B. Install molded-polystyrene insulation units into masonry unit cells before laying units.

3.6 MASONRY-JOINT REINFORCEMENT

A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch (16 mm) on exterior side of walls, 1/2 inch (13 mm) elsewhere. Lap reinforcement a minimum of 6 inches (150 mm).

1. Space reinforcement not more than 16 inches (406 mm) o.c.
2. Space reinforcement not more than 8 inches (203 mm) o.c. in foundation walls and parapet walls.
3. Provide reinforcement not more than 8 inches (203 mm) above and below wall openings and extending 12 inches (305 mm) beyond openings[**in addition to continuous reinforcement**].

B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.

C. Provide continuity at wall intersections by using prefabricated T-shaped units.

D. Provide continuity at corners by using prefabricated L-shaped units.

3.7 ANCHORING MASONRY TO STRUCTURAL STEEL AND CONCRETE

A. Anchor masonry to structural steel and concrete, where masonry abuts or faces structural steel or concrete, to comply with the following:

1. Provide an open space not less than [**1/2 inch (13 mm)**] [**1 inch (25 mm)**] [**2 inches (50 mm)**] wide between masonry and structural steel or concrete unless otherwise indicated. Keep open space free of mortar and other rigid materials.
2. Anchor masonry with anchors embedded in masonry joints and attached to structure.
3. Space anchors as indicated, but not more than 24 inches (610 mm) o.c. vertically and 36 inches (915 mm) o.c. horizontally.

3.8 FLASHING

A. General: Install embedded flashing at ledges and other obstructions to downward flow of water in wall where indicated.

B. Install flashing as follows unless otherwise indicated:

1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape[**as recommended by flashing manufacturer**].

2. At lintels, extend flashing a minimum of 6 inches (150 mm) into masonry at each end. At heads and sills, extend flashing 6 inches (150 mm) at ends and turn up not less than 2 inches (50 mm) to form end dams.
3. Install metal drip edges beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch (13 mm) back from outside face of wall, and adhere flexible flashing to top of metal drip edge.
4. Install metal flashing termination beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch (13 mm) back from outside face of wall, and adhere flexible flashing to top of metal flashing termination.

C. Install single-wythe CMU flashing system in bed joints of CMU walls where indicated to comply with manufacturer's written instructions. Install CMU cell pans with upturned edges located below face shells and webs of CMUs above and with weep spouts aligned with face of wall. Install CMU web covers so that they cover upturned edges of CMU cell pans at CMU webs and extend from face shell to face shell.

3.9 REINFORCED UNIT MASONRY

A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.

1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and that of other loads that may be placed on them during construction.

B. Placing Reinforcement: Comply with requirements in TMS 602/ACI 530.1/ASCE 6.

C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.

1. Comply with requirements in TMS 602/ACI 530.1/ASCE 6 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
2. Limit height of vertical grout pours to not more than [**60 inches (1520 mm)**] [**12.67 ft. (3.86 m)**] .

3.10 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas as needed to perform

tests and inspections. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.

B. Inspections: Special inspections according to Level [**C**] in TMS 402/ACI 530/ASCE 5.

1. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.
2. Place grout only after inspectors have verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.
3. Place grout only after inspectors have verified proportions of site-prepared grout.

C. Testing Prior to Construction: One set of tests.

D. Testing Frequency: One set of tests for each 5000 sq. ft. (464 sq. m) of wall area or portion thereof.

E. Concrete Masonry Unit Test: For each type of unit provided, according to ASTM C140 for compressive strength.

F. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, according to ASTM C780.

G. Mortar Test (Property Specification): For each mix provided, according to ASTM C780. Test mortar for [**mortar air content**] [**and**] [**compressive strength**].

H. Grout Test (Compressive Strength): For each mix provided, according to ASTM C1019.

I. Prism Test: For each type of construction provided, according to ASTM C1314 at [**seven days and at**]28 days.

3.11 PARGING

A. Parge exterior faces of below-grade masonry walls, where indicated, in two uniform coats to a total thickness of 3/4 inch (19 mm). Dampen wall before applying first coat, and scarify first coat to ensure full bond to subsequent coat.

B. Use a steel-trowel finish to produce a smooth, flat, dense surface with a maximum surface variation of 1/8 inch per foot (3 mm per 300 mm). Form a wash at top of parging and a cove at bottom.

C. Damp-cure parging for at least 24 hours and protect parging until cured.

3.12 REPAIRING, POINTING, AND CLEANING

A. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

B. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes.
2. Clean concrete masonry by applicable cleaning methods indicated in NCMA TEK 8-4A.

3.13 MASONRY WASTE DISPOSAL

A. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.

1. Do not dispose of masonry waste as fill within 18 inches (450 mm) of finished grade.

B. Masonry Waste Recycling: Return broken CMUs not used as fill to manufacturer for recycling.

C. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above or recycled, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION 042200

SECTION 05 12 00

STRUCTURAL STEEL

PART 1 - GENERAL

1.01 SCOPE

A. This Section covers the furnishing of labor, materials, tools, and other construction equipment for the detailing, fabrication, erection, testing, and inspection of structural steel shown on the drawings or specified herein.

1.02 REFERENCE STANDARDS

A. The following publications, referred to in this Section by basic designation, form a part of this Section to the extent specified herein or called for on the drawings.

1. American Institute of Steel Construction (AISC)
   a. Manual of Steel Construction - Eighth Edition
   b. Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings with Commentary - November 1, 1978
   c. Specification for Structural Joints Using ASTM A325 or ASTM 490 Bolts - April 26, 1978
   d. Code of Standard Practice for Steel Buildings and Bridges, September 1, 1976
2. American Welding Society (AWS) AWS D1.1-83
   a. Structural Welding Code - AWS D1.1-83
   b. Specification for Mild Steel Covered Arc Welding Electrodes - AWS A5.1-83
   c. Specifications for Low Alloy Steel Covered Arc Welding Electrodes - AWS A5.5-83
3. American Society for Testing and Materials Specifications (ASTM)
   a. General Requirements for Rolled Steel Plates, Shapes, Sheet Piling, and Bars for Structural Use - ASTM A6-79
   b. Structural Steel - ASTM A36-77A
   c. Pipe, Steel, Black, and Hot-Dipped Zinc-Coated Welded and Seamless - ASTM A53-77A
   d. Carbon Steel Externally and Internally Threaded Standard Fasteners - ASTM A307-76
   e. High-Strength Bolts for Structural Steel Joints, Including Suitable Nuts and Plain Hardened Washers - ASTM A-325-76
   f. Cold Formed Welded on Seamless Carbon Steel Structural Tubing in Rounds and

Shapes ASTM - A500-77

4. Federal Specifications
   a. Paint, Red-Lead-Base, Ready Mixed TT-P-86G, Type 1
5. Steel Structures Painting Council (SSPC)
   a. Steel Structures Painting Manual Volume 2

1.03 SHOP DRAWINGS

A. Shop drawings shall be submitted to the Architect for review. Provide all details, conditions, sizing, connections, etc. Drawings to be stamped by Georgia Registered Engineer. Provide all information as required for complete structural steel installation.

B. Where welded connections are detailed, standard AWS symbols shall be used.

C. Shop drawings shall be made to conform to the design drawings. Contract drawings shall take precedence over shop drawings unless otherwise authorized in writing. Review of the shop drawings by the Architect or the Engineer does not constitute a change to the contract.

D. All joints shall be completely detailed so as to cover both shop and field work.

E. In case the Contractor is in doubt regarding certain dimensions shown on the contract drawings, or if there is a discrepancy on the contract drawings, the Contractor or his agent shall circle and question such dimensions on his shop drawings. In such cases, the dimensions shall be especially checked or supplied by the Architect.

F. All sections and details shown on shop drawings shall be cross-referenced to applicable sections and details on contract drawings.

G. All drawings for review must be submitted, one sepia and three prints. One sepia and one print shall be returned to the Contractor marked as follows:
   1. "No Exceptions Taken" - Indicates the drawings have been reviewed for conformance with contract documents and no exceptions have been taken. Proceed with the work.
   2. "Exceptions Noted" - Indicates the drawings have been reviewed for conformance with the contract documents and that exceptions have been taken. Contractor may proceed with the work provided he corrects the work as noted. Re-submittal will not be required.
   3. "Exceptions Noted - Resubmit" - Indicates the drawings have been reviewed for conformance with the contract documents and that work may proceed on items to which no exceptions have been taken. After items to which exceptions have been taken are corrected, Contractor shall again submit copies for review.
   4. "Resubmit" - Indicates that the drawings have been reviewed for conformance with the contract documents and are too incomplete or in an unacceptable condition for review. A notation will be made on the shop drawings as to the exceptions taken. Drawings shall be

revised and resubmitted for review before proceeding with the work.

H. In case exceptions are noted on one sheet which affects details on other sheets, the exceptions is to be taken as applying to such other details.

I. Work must not proceed in the shop or field on items to which exceptions have been taken.

J. All drawings and details must be checked and show the initial of the checker before they are submitted for approval.

K. The Contractor must check and be responsible for the conforming of all steel details indicated on the contract drawings.

1.04 TESTING AND INSPECTIONS

A. A testing laboratory or engineer, registered in the state where the project is located, approved by the Architect shall be obtained and paid for by the Contractor for the purpose of testing and inspecting as specified herein and called for on the drawings.

B. The testing laboratory shall test and inspect the following using the methods and criteria indicated:

1. 100% of welded joints within the length of a member, proposed by the fabricator, using nondestructive testing as recommended in Chapter 6 of AWS D1.1.
2. 100% of complete penetration welds shown on the contract or shop drawings, using nondestructive testing as recommended in Chapter 6 of AWS D1.1.
3. A random selection of 15% of all fillet welds using nondestructive testing as recommended in Chapter 6 of AWS D1.1. If 5% or more of the initial 15% of welds inspected are not satisfactory, 50% of the remaining welds shall be inspected. If 5% or more of these welds are not satisfactory, the remaining welds shall be inspected.
4. A random selection of 15% of all high strength bolted connections shall be tested for proper make up and bolt tension as recommended by Specification for Structural Joints Using ASTM A325 or ASTM 490 Bolts. If 5% or more of these bolts do not meet required tension or any bolt in less than 85% of required tension, 50% of the remaining bolts shall be tested. If 5% or more of these bolts do not meet required tension, the remaining bolts shall be tested.
5. 100% of the columns shall be checked for being true and plumb.

C. The testing laboratory shall prepare a report, sending one copy to the Architect, Engineer, and Contractor which certifies the following:

1. All work has been checked against drawings, specifications and shop drawings.
2. Type, size, and length of all welding inspected comply with drawings, specifications, and shop drawings.

3. High strength bolts have been installed with one hardened washer and meet the required bolt tension.
4. Any deficiencies and corrective measures taken.
5. Specific locations of complete penetration welding and general location of fillet welding and high strength bolting inspected.
6. Specific location of any column which is not plumb.
7. Certificates of all welders are valid.

1.05 WELDERS

A. All welders used in shop work and field work shall be certified as required by Chapter 5 of AWS D1.1 for the type of work they are performing and have valid certificates.

1.06 CONNECTIONS

A. General

1. Connections, unless shown otherwise on drawings or specified otherwise herein, shall be designed by the fabricator and detailed on the shop drawings. Connections for beams shall be designed as flexible and proportioned for end reactions. Unless shown otherwise on the drawings, end reactions as a minimum may be determined by ER=1.2(2SxFb/3x2L+ proportionate amount of end reaction from other beams framing into beam). Where
   S= Member Section Modulus (1N3)
   Fb= Allow Bending Stress in Member (KS1)
   L = Clear Span of Member (ft)
   ER= Member End Reaction (Kips)
2. Where final connection is to be welded, provision shall be made for securing the members together during erection and alignment.
3. Except where called for otherwise, field connections shall be bolted.
4. The bolts or welds at the ends of any member transmitting stresses into that member shall preferably have their centers of gravity on the gravity axis of the member; otherwise, provisions shall be made for the effect of the resulting eccentricity.
5. Connections for bracing members carrying calculated stresses shall have sufficient bolts or welds to develop the force indicated. Where no stresses are indicated, connections shall be designed for a minimum of 12,000#.
6. Members meeting at a point shall have their gravity axis meet at a point if practical, if not, provision shall be made for bending stresses due to eccentricity.

B. Welds:

1. Welding and joint details shall meet the requirements of the AISC Manual of Steel Construction and AWS D1.1.
2. If welds do not meet the design requirements when inspected by the testing laboratory, all welds shall be rechecked and reworked as necessary prior to re-inspection by testing laboratory.

C. High Strength Steel Bolts:

1. High strength steel bolts connections shall be provided and installed in accordance with AISC Specifications for Structural Joints Using ASTM A325 or ASTM 490 Bolts.
2. Bolts, nuts, and washers shall conform to ASTM A325.
3. Bolts shall be equipped with nut and one hardened washer. Washers shall be flat and smooth but if the bearing faces of the bolted parts have a slope of more than 1:20 with respect to a plane normal to the bolt axis, smooth beveled washers shall be used to compensate for the lack of parallelism.
4. Bolts shall be assumed to be in bearing and threads must be out of the shear plane.
5. Bolts shall be tightened by a calibrated wrench or by direct tension indicator in accordance with AISC Specifications for Structural Joints Using ASTM A325 or ASTM 490 Bolts. The turn of the nut method will not be accepted.
6. If bolt tension does not meet the required tension when inspected by the testing laboratory, all bolts shall be retightened prior to re-inspection by the testing laboratory.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Structural steel shall conform to the following:

1. All rolled structural shapes, plates and bars unless shown otherwise on the plans shall meet the requirements of ASTM A6 and A36.
2. All structural tubing shall meet the requirements of ASTM A500 Grade B with a Fy = 46,000 psi.
3. All structural pipe shall meet the requirements of ASTM A53 Type E or Type S, Grade B.

B. High strength bolts, nuts, and washers shall conform to ASTM A325.

C. Electrodes for manual metal-arc welding shall conform to Classification E7015, E7016, or E7018 of AWS A5.1 or AWS A5.5.

D. Anchor bolts shall conform to ASTM A307.

E. Expansion bolts shall be as manufactured by one of the following:

1. Wedge Anchors - Phillips Drill Company

2. Wejit - Wejit Expansion Products
3. Parabolt _ The Molly Company
4. Kwik Bolt - Hilti Corporation

F. Paint:
1. Shop paint for work exposed to pedestrian view shall be compatible with finish coat.
2. Shop paint for work not exposed to pedestrian view shall meet Federal Specification TT-P-86G, Type I.
3. Finish coat shall meet the requirements of Division 9 of this specification.

G. Grout under base plates or bearing plates shall be one of the following or an approved substitute.
1. Burke - Non-Ferrous, non-shrink grout
2. Eculid - Fermix grout
3. L&M - Crystex
4. Master Builders - Masterflow 713

PART 3 - EXECUTION

3.01 WORKMANSHIP

A. All work shall be executed by skilled workmen under experienced supervision.

B. Both shop and field welding shall be done by certified welders.

3.02 FABRICATION

A. All fabrication shall conform to AISC Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings and AISC Code of Standard Practice unless specifically specified otherwise or shown otherwise on the drawings.

B. Structural material shall be fabricated and assembled in the shop to the extent that additional assembly is restricted by shipping limitations. Flame cutting and chipping shall be done to prescribed dimensions. Burrs and shavings shall be removed. Parts not completely connected in the shop shall be secured by bolts to prevent loss or damage in shipment and handling.

C. Shearing and punching shall be without ragged or torn edges. The diameter of the punch shall not exceed that of the bolt or the diameter of the die exceed that of the punch by more than 1/16 inch. The thickness of the material in punched work shall not exceed the normal diameter of the bolts plus 1/8 inch. Holes shall be spaced so that when parts are assembled, bolts will enter without distortion. Holes shall be enlarged only by reaming. Drift pins shall not enlarge or distort the holes.

D. Shop connections may be welds or high strength steel bolts unless specified otherwise. Bolts shall be tightened by a calibrated wrench or direct tension indicator.

E. All members shall be free form twists, kinks, buckles or open joints. Parts assembled with bolts shall be in close contact except where separators are prescribed. All members shall be so made that when assembled, the parts shall come together without shimming.

F. Open holes shall be provided for bolted connections of other work under the General Contract to Structural Metal Work.

G. Metal shall be properly prepared in accordance with shop details before welding is begun.

H. No shop splice or other connection welded or otherwise shall be made without having been detailed on shop drawings and reviewed by the Engineer.

I. Headed studs shall be electro-welded to base material in accordance with manufacturer's recommendations.

3.03 SHOP PAINTING

A. All steel exposed to pedestrian view or weather shall be cleaned and prepared for painting to meet the requirements of SSPC SP10 surface preparation, and primed with a primer which is compatible with finish coat as specified in Division 9 of this specification.

B. All steel not exposed to pedestrian view or not exposed to weather shall be cleaned and prepared for painting to meet the requirements of SSPC SP2 surface preparation and given on coat of primer 2 mils thick, dry film thickness.

C. All steel encased in concrete shall not be painted.

3.04 ERECTION PRECAUTIONS

A. It shall be the responsibility of the Contractor to secure steel against displacement during erection and to maintain it against displacement until the erection of all steel is completed, all floor and roof decks are in place.

B. All structural metal work shall be accurately set and secured with temporary or permanent connections as erected.

C. All structural metal work shall have temporary guys, braces, and stays to hold it in position until it is permanently secure.

D. Column bases are designed as unrestrained and columns shall be guyed, braced, or stayed as erected. (Staying may be accomplished by fastening to framing members attached to a section of framing already braced.)

3.05 ERECTION

A. Erection shall conform to AISC Code of Standard Practice for Steel Buildings and Bridges unless

specifically specified otherwise or shown otherwise on drawings.

B. Field connections may be welds or high strength steel bolts unless specified otherwise. High strength bolts shall be tightened using a calibrated wrench or direct tension indicator.

C. Bolts for structural work exposed to the weather shall be dipped in rust inhibitive paint just before they are put in place.

D. Anchor bolts shall be properly located and built into the connecting work in advance.

E. Column bases shall be grouted solid.

F. No bolt holes shall be burned or enlarged with a torch.

G. After assembly, the various members forming parts of a completed frame or structure shall be aligned and adjusted before being permanently fastened. Tolerance shall conform to paragraph 7.11 of the AISC Code of Standard Practice for Steel Buildings and Bridges. Fastening of splices of compression members shall be done after a abutting surfaces have been brought completely into contact. Bearing surfaces and surfaces that will be in permanent contact shall be cleaned before the members are assembled. Unless removal is required by the Architect, erection bolts used in welded construction shall be tightened and left in place.

H. As erection progresses, the work shall be connected to take care of all dead load, wind, and erection stresses. Splices will be permitted only where indicated.

I. Holes for expansion bolts shall be made by first securing the steel item in place then drilling the holes through the holes in the steel using the steel as a template. Drilling of the holes by center measurement will not be permitted. The drill size shall be of the same diameter as the bolt.

J. All bolts including anchor bolts shall have 1-1/2 threads minimum exposed after nut is tightened.

3.06 FIELD PAINTING

A. All steel exposed to pedestrian view or weather shall be painted in accordance with Division 9 of this specification.

B. All steel not exposed to pedestrian view shall be field painted as follows:

1. After erection, all surfaces on which the shop coat is damaged or destroyed or on which the metal is exposed by rust spots shall be cleaned off and repainted with one coat of paint, 2 mils thick dry film thickness.
2. After erection, all bolts, heads and welds shall be painted.

END OF SECTION

PART 1- GENERAL

.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section. All structural steel to have 1-hour rated spray on fire protection.

.2 SUMMARY

A. This Section includes the following:

1. Roof deck.
2. Composite floor deck.

B. Related Sections include the following:

1. Division 3 Section "Cast_in_Place Concrete" for concrete fill and reinforcing steel.
2. Division 3 Section "Insulating Concrete Decks" for lightweight insulating concrete fill.
3. Division 5 Section "Structural Steel" for shop_welded shear connectors.
4. Division 5 Section "Metal Fabrications" for framing deck openings with miscellaneous steel shapes.
5. Division 9 Section "Painting" for repair painting of painted deck.
6. Division 9 Section "Special Coatings" for repair of deck special coatings.
7. Division 16 Section "Underfloor Raceway" for preset inserts, activation kits, afterset inserts, service fittings, header ducts, and trench header ducts used with cellular deck floor systems.

.3 SUBMITTALS

A. Product Data: For each type of deck, accessory, and product indicated.

B. Shop Drawings: Show layout and types of deck panels, anchorage details, reinforcing channels, pans, deck openings, special jointing, accessories, and attachments to other construction.

C. Product Certificates: Signed by steel deck manufacturers certifying that products furnished comply with requirements.

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

E. Product Test Reports: From a qualified testing agency indicating that each of the following complies with requirements, based on comprehensive testing of current products:

1. Mechanical fasteners.
2. Acoustical roof deck.

F. Research/Evaluation Reports: Evidence of steel deck's compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.

.4 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed steel deck similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in_service performance.

B. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548.

C. Source Limitations for Cellular Deck Floor Systems with Electrical Distribution: Obtain cellular floor deck units and compatible electrical components, such as preset inserts, activation kits, afterset inserts, service fittings, header ducts, and trench header ducts, from the same manufacturer. Electrical components are specified in Division 16 Section "Underfloor Raceway."

D. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code__Steel," and AWS D1.3, "Structural Welding Code__Sheet Steel."

E. Fire_Test_Response Characteristics: Where indicated, provide steel deck units identical to those steel deck units tested for fire resistance per ASTM E 119 by a testing and inspection agency acceptable to authorities having jurisdiction.

1. Fire_Resistance Ratings: Indicated by design designations from UL's "Fire Resistance Directory" or from the listings of another testing and inspecting agency.
2. Steel deck units shall be identified with appropriate markings of applicable testing and inspecting agency.

F. AISI Specifications: Calculate structural characteristics of steel deck according to AISI's "Specification for the Design of Cold_Formed Steel Structural Members."

G. Electrical_Raceway Units: Provide UL_labeled cellular floor deck units complying with UL 209 and listed in UL's "Electrical Construction Equipment Directory" for use with standard header ducts and outlets for electrical distribution systems.

H. FM Listing: Provide steel roof deck evaluated by FM and listed in FM's "Approval Guide, Building Materials" for Class 1 fire rating and Class 1_90 windstorm ratings.

.5 DELIVERY, STORAGE, AND HANDLING

A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.

B. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

.6 COORDINATION

A. Coordinate installation of sound_absorbing insulation strips in topside ribs of acoustical deck with roofing installation specified in Division 7 Section to ensure protection of insulation strips against damage from effects of weather and other causes.

B. Coordinate layout and installation of trench headers, preset inserts, duct fittings, and other components specified in Division 16 Section "Underfloor Raceway" with installation of cellular metal floor deck.

2PART _ PRODUCTS

.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Steel Deck:

a. BHP Steel Building Products USA Inc.
b. Consolidated Systems, Inc.
c. Epic Metals Corp.
d. Marlyn Steel Products, Inc.
e. Nucor Corp.; Vulcraft Div.
f. Roof Deck, Inc.
g. United Steel Deck, Inc.
h. Verco Manufacturing Co.
i. Wheeling Corrugating Co.; Div. of Wheeling_Pittsburgh Steel Corp.

2. Cellular Floor Deck with Electrical Distribution

a. BHP Steel Building Products USA Inc.
b. Centria.
c. Consolidated Systems, Inc.
d. United Steel Deck, Inc.
e. Walker Systems, Inc.; Div. of Wiremold, Inc.

.2 ROOF DECK COMPOSITE

A. Steel Roof Deck with insultion and plywood. Loadmaster or

1. Prime_Painted Steel Sheet: ASTM A 611, Grade **C** minimum, shop primed with gray or white baked_on, lead_ and chromate_free rust_inhibitive primer complying with performance requirements of FS TT_P_664.

.3 COMPOSITE FLOOR DECK

A. Composite Steel Floor Deck: Fabricate panels, with integrally embossed or raised pattern ribs and interlocking side laps, to comply with "SDI Specifications and Commentary for Composite Steel Floor Deck," in SDI Publication No. 29, the minimum section properties indicated, and the following:

1. Prime_Painted Steel Sheet: ASTM A 611, Grade **C** minimum, with top surface phosphatized and unpainted and bottom surface shop primed with gray or white baked_on, lead_ and chromate_free rust_inhibitive primer complying with performance requirements of FS TT_P_664.

.4 ACCESSORIES

A. General: Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.

B. Mechanical Fasteners: Corrosion_resistant, low_velocity, power_actuated or pneumatically driven carbon_steel fasteners; or self_drilling, self_threading screws.

C. Side_Lap Fasteners: Corrosion_resistant, hexagonal washer head; self_drilling, carbon_steel screws, No. 10 (4.8 mm) minimum diameter.

D. Flexible Closure Strips: Vulcanized, closed_cell, synthetic rubber.

E. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi (230 MPa), not less than 0.0359_inch (0.91_mm) design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.

F. Steel Sheet Accessories: Steel sheet, of same material, finish, and thickness as deck, unless otherwise indicated.

G. Pour Stops and Girder Fillers: Steel sheet, minimum yield strength of 33,000 psi (230 MPa), of same material and finish as deck, and of thickness and profile [**indicated**] [**recommended by SDI Publication No. 29 for overhang and slab depth**].

H. Column Closures, End Closures, Z_Closures, and Cover Plates: Steel sheet, of same material, finish, and thickness as deck, unless otherwise indicated.

I. Piercing Hanger Tabs: Piercing steel sheet hanger attachment devices for use with floor deck.

J. Weld Washers: Uncoated steel sheet, shaped to fit deck rib, [**0.0598 inch (1.52 mm)**] [**0.0747 inch (1.90 mm)**] thick, with factory_punched hole of 3/8_inch (9.5_mm) minimum diameter.

K. Recessed Sump Pans: Single_piece steel sheet, 0.0747 inch (1.90 mm) thick, of same material and finish as deck, with 3_inch_ (76_mm_) wide flanges and [**level**] [**sloped**] recessed pans of 1_1/2_ inch (38_mm) minimum depth. For drains, cut holes in the field.

L. Flat Sump Plate: Single_piece steel sheet, 0.0747 inch (1.90 mm) thick, of same material and finish as deck. For drains, cut holes in the field.

M. Shear Connectors: ASTM A 108, Grades 1010 through 1020 headed stud type, cold_finished carbon steel, AWS D1.1, Type B, with arc shields.

N. Galvanizing Repair Paint: [**ASTM A 780**] [**SSPC_Paint 20 or DOD_P_21035, with dry film containing a minimum of 94 percent zinc dust by weight**].

O. Repair Paint: Lead_ and chromate_free rust_inhibitive primer complying with performance requirements of FS TT_P_664.

3PART _ EXECUTION

.1 EXAMINATION

A. Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance.

.2 INSTALLATION, GENERAL

A. Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 29, manufacturer's written instructions, and requirements in this Section.

B. Install temporary shoring before placing deck panels, if required to meet deflection limitations.

C. Locate decking bundles to prevent overloading of supporting members.

D. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side_lap interlocks.

1. Align cellular deck panels for entire length of cell runs and align cells at ends of abutting panels.

E. Place deck panels flat and square and fasten to supporting frame without warp or deflection.

F. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to decking.

G. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of decking, and support of other work.

H. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used for correcting welding work.

I. Mechanical fasteners may be used in lieu of welding to fasten deck. Locate mechanical fasteners and install according to deck manufacturer's written instructions.

.3 ROOF DECK INSTALLATION

A. Fasten roof deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated or arc seam welds with an equal perimeter, but not less than 1_1/2 inches (38 mm) long, and as follows:

1. Weld Diameter: **5/8 inch (16 mm)**, nominal.
2. Weld Spacing: Weld edge and interior ribs of deck units with a minimum of two welds per deck unit at each support. Space welds [**12 inches (305 mm) apart, apart in the field of the roof and 6 inches (150 mm) apart in roof corners and perimeter, based on roof_area definitions of FM Loss Prevention Data Sheet 1_28 as indicated**.
3. Weld Washers: Install weld washers at each weld location.

B. Side_Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals not exceeding the lesser of 1/2 of the span or **18 inches (450 mm)**, and as follows:

1. Mechanically fasten with self_drilling No. 10 (4.8_mm_) diameter or larger carbon_steel screws.
2. Mechanically clinch or button punch.
3. Fasten with a minimum of 1_1/2_inch_ (38_mm_) long welds.

C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1_1/2 inches (38 mm), with end joints as follows:

1. End Joints: **Butted**

D. Roof Sump Pans and Sump Plates: Install over openings provided in roof decking and weld flanges to top of deck. Space welds not more than 12 inches (305 mm) apart with at least 1 weld at each corner.

E. Miscellaneous Roof Deck Accessories: Install ridge and valley plates, finish strips, cover plates, end closures, and reinforcing channels according to deck manufacturer's written instructions. Weld to substrate to provide a complete deck installation.

F. Flexible Closure Strips: Install flexible closure strips over partitions, walls, and where indicated. Install with adhesive according to manufacturer's written instructions to ensure complete closure.

G. Sound_Absorbing Insulation: Installation into topside ribs of deck as specified in Division 7 Section.

.4 FLOOR DECK INSTALLATION

A. Fasten floor deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated and as follows:

1. Weld Diameter: **5/8 inch (16 mm)**, nominal.
2. Weld Spacing: Weld edge ribs of panels at each support. Space additional welds an average of 12 inches (305 mm) apart, but not more than 18 inches (457 mm) apart.
3. Weld Spacing: Space and locate welds as indicated.

4.Weld Washers: Install weld washers at each weld location.

B. Side_Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals not exceeding the lesser of 1/2 of the span or 36 inches (910 mm), and as follows:

1. Mechanically fasten with self_drilling No. 10 (4.8_mm_) diameter or larger carbon_steel screws.
2. Mechanically clinch or button punch.
3. Fasten with a minimum of 1_1/2_inch_ (38_mm_) long welds.

C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of **1_1/2 inches (38 mm)**, with end joints as follows:

1. End Joints: **Butted**.

D. Shear Connectors: Weld shear connectors through deck to supporting frame according to AWS D1.1 and manufacturer's written instructions. Butt end joints of deck panels; do not overlap. Remove and discard arc shields after welding shear connectors.

E. Pour Stops and Girder Fillers: Weld steel sheet pour stops and girder fillers to supporting structure according to SDI recommendations, unless otherwise indicated.

F. Floor Deck Closures: Weld steel sheet column closures, cell closures, and Z_closures to deck, according to SDI recommendations, to provide tight_fitting closures at open ends of ribs and sides of decking. Weld cover plates at changes in direction of floor deck panels, unless otherwise indicated.

G. Cellular_Raceway Deck Floor Systems with Electrical Distribution: Install cellular floor system with deck assembled from **all_cellular units**.

1. Maintain smooth cellular_raceway interiors free of welds or mechanical fasteners.

H. Install piercing hanger tabs not more than 14 inches (355 mm) apart in both directions, within 9 inches (228 mm) of walls at ends, and not more than 12 inches (305 mm) from walls at sides, unless otherwise indicated.

.5 FIELD QUALITY CONTROL

A. Testing: Owner will engage a qualified independent testing agency to perform field quality_control testing.

B. Field welds will be subject to inspection.

C. Shear connector stud welds will be inspected and tested according to AWS D1.1 for stud welding and as follows:

1. Shear connector stud welds will be visually inspected.
2. Bend tests will be performed if visual inspections reveal less than a full 360_degree flash or welding repairs to any shear connector stud.
3. Tests will be conducted on additional shear connector studs if weld fracture occurs on shear connector studs already tested according to AWS D1.1.

D. Testing agency will report test results promptly and in writing to Contractor and Architect.

E. Remove and replace work that does not comply with specified requirements.

F. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.

.6 REPAIRS AND PROTECTION

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

B. Repair Painting: Wire brush and clean rust spots, welds, and abraded areas on **both surfaces** of prime_painted deck immediately after installation, and apply repair paint.

1. Apply repair paint, of same color as adjacent shop_primed deck, to bottom surfaces of deck exposed to view.
2. Wire brushing, cleaning, and repair painting of bottom deck surfaces are included in Division 9 Section.

C. Repair Painting: Wire brushing, cleaning and repair painting of rust spots, welds, and abraded areas of both deck surfaces are included in Division 9 Section.

D. Provide final protection and maintain conditions to ensure that steel deck is without damage or deterioration at time of Substantial Completion.

END OF SECTION 05310

OCONEE COUNTY SENIOR CENTER ADDITION

FEBRUARY 05, 2021

DOCUMENT 05 40 00 COLD FORMED METAL FRAMING

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 this Section.

1.2 SUMMARY

A. Types of cold-formed metal framing units include the following:

1. Interior walls and miscellaneous framing at soffits, etc.. All studs to be spaced at 16" on center. All exterior studs to be 6", 18 gauge studs. PROVIDE COMPLETE ENGINEERED SHOP DRAWINGS SHOWING ALL STUD LAYOUTS, SIZES, CONDITIONS, CONNECTIONS, BRACING, SUPPORT, ETC. stamped by a Georgia Licensed Engineer..

1.3 **SUBMITTALS**

A. General: Submit the following in accordance with Conditions of Contract and Division 1 specification Sections.

1. Product data and installation instructions for each item of cold-formed metal framing and accessories.

1.4 **QUALITY ASSURANCE**

A. Component Design: Calculate structural properties of studs and joists in accordance with American Iron and Steel Institute (AISI) "Specification for Design of Cold-Formed Steel Structural Members."

B. Welding: Use qualified welders and comply with American Welding Society (AWS) D1.3, "Structural Welding Code - Sheet Steel."

PART 2 - PRODUCTS

2.1 **MANUFACTURERS**

A. Manufacturers: Subject to compliance with requirements, provide products of one of the following:

1. Alabama Metal Industries Corp.
2. Consolidated Systems, Inc.
3. Dale Industries, Inc.
4. Dietrich Industries, Inc.
5. Marino Industries, Inc.
6. Superior Steel Studs, Inc.
7. USG Industries
8. United States Steel
9. Wheeling Corrugating Co.

2.2 **METAL FRAMING**

A. System Components: Manufacturers' standard load-bearing steel studs and joists of type, size, shape, and gage as indicated. With each type of metal framing required, provide manufacturer's

standard, steel runners (tracks), blocking, lintels, chip angles, shoes, reinforcements, fasteners, and accessories for applications indicated, as needed to provide a complete metal framing system.

B. Materials and Finishes:

1. For 18-gauge units, fabricate metal framing components of commercial quality steel sheet with a minimum yield point 40 ksi; ASTM A 446, A 570, or A 611.

2. Provide galvanized finish to metal framing components complying with ASTM A 525 for minimum G 60 coating.

   a. Provide galvanized finish for components in exterior walls.

3. Fasteners: Provide nuts, bolts, washers, screws, and other fasteners with corrosion-resistant plated finish.
4. Electrodes for Welding: Comply with AWS Code and as recommended by stud manufacturer.
5. Galvanizing Repair: Where galvanized surfaces are damaged, prepare surfaces and repair in accordance with procedures specified in ASTM A 780.

2.3 **FABRICATION**

A. General: Framing components may be prefabricated into assemblies before erection. Fabricate panels plumb, square, true to line, and braced against racking with joints welded. Perform lifting of prefabricated units to prevent damage or distortion.

B. Fabricate units in jig templates to hold members in proper alignment and position and to ensure consistent component placement.

C. Fastenings: Attach similar components by welding. Attach dissimilar components by welding, bolting, or screw fasteners, as standard with manufacturer.

D. Wire tying of framing components is not permitted.

E. Fabrication Tolerances: Fabricate units to a maximum allowable tolerance variation from plumb, level, and true to line of 1/8 inch in 10 feet.

PART 3 - EXECUTION

3.1 **INSTALLATION**

A. General: Install metal framing systems in accordance with manufacturer's printed or written instructions and recommendations.

B. Runner Tracks: Install continuous tracks sized to match studs. Align tracks accurately to layout at base and tops of studs. Secure tracks as recommended by stud manufacturer for type of construction involved, except do not exceed 24 inches o.c. spacing for nail or power-driven fasteners or 16 inches o.c. for other types of attachment. Provide fasteners at corners and ends of tracks.

C. Installation of Wall Studs: Secure studs to top and bottom runner tracks by either welding or screw fastening at both inside and outside flanges.

D. Set studs plumb, except needed for diagonal bracing or required for nonplumb walls or warped surfaces and similar requirements.

E. Where stud system abuts structural columns or walls, including masonry walls, anchor ends of

stiffeners to supporting structure.

F. Frame wall openings larger than 2 feet square with double stud at each jamb of frame except where more than two are either shown or indicated in manufacturer's instructions. Install runner tracks and jack studs above and below wall openings. Anchor tracks to jamb studs with stud shoes or by welding, and space jack studs same as full-height studs of wall. Secure stud system wall opening frame in manner indicated.

G. Frame both sides of expansion and control joints with separate studs; do not bridge the joint with components of stud system.

H. Install horizontal stiffeners in stud system, spaced (vertical distance) at not more than 54 inches o.c. Weld at each intersection.

I. Erection Tolerances: Bolt or weld wall panels (at both horizontal and vertical junctures) to produce flush, even, true-to-line joints.

1. Maximum variation in plane and true position between prefabricated assemblies should not exceed 1/16 inch.

J. Field Painting: Touch-up damaged shop-applied protective coatings. Use compatible primer for prime-coated surfaces; use galvanizing repair system for galvanized surfaces.

END OF SECTION

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.
2. Framing with engineered wood products.
3. Shear wall panels.
4. Rooftop equipment bases and support curbs.
5. Wood blocking**, cants,** and nailers.
6. Wood furring **and grounds**.
7. Wood sleepers.
8. Plywood backing panels.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product.

1.3 INFORMATIONAL SUBMITTALS

A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

B. Evaluation Reports: For the following, from ICC-ES:

1. Wood-preservative-treated wood.
2. Fire-retardant-treated wood.
3. Engineered wood products.
4. Shear panels.
5. Power-driven fasteners.
6. Post-installed anchors.
7. Metal framing anchors

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. For exposed lumber indicated to receive a stained or natural finish, [**mark grade stamp on end or back of each piece**].
3. Dress lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content of Lumber: [**15 percent for 2-inch nominal (38-mm actual) thickness or less; 19 percent for more than 2-inch nominal (38-mm actual) thickness**] unless otherwise indicated.

C. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.

1. Allowable design stresses, as published by manufacturer, shall meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2[**for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground**].

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.[**Do not use inorganic boron (SBX) for sill plates.**]

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

D. Application: Treat [**all rough carpentry unless otherwise indicated.**]

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, [**furring,**] [**stripping,**] and similar concealed members in contact with masonry or concrete.
3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
4. Wood framing members that are less than 18 inches (460 mm) above the ground in crawlspaces or unexcavated areas.
5. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 FIRE-RETARDANT-TREATED MATERIALS

A. General: Where fire-retardant-treated materials are indicated, materials shall comply with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.

1. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
2. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.

C. Kiln-dry lumber after treatment to maximum moisture content of 19 percent.[**Kiln-dry plywood after treatment to maximum moisture content of 15 percent.**]

D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.

E. Application: Treat [**all rough carpentry unless otherwise indicated.**]

1. Framing for raised platforms.
2. Framing for stages.

3. Concealed blocking.
4. Framing for non-load-bearing partitions.
5. Framing for non-load-bearing exterior walls.
6. Roof construction.
7. Plywood backing panels.

2.4 DIMENSION LUMBER FRAMING

A. Non-Load-Bearing Interior Partitions: [**Construction or No. 2**] grade.

1. Application: [**Interior partitions not indicated as load bearing**].
2. Species:

a. Southern pine or mixed southern pine; SPIB.
b. Northern species; NLGA.
c. Eastern softwoods; NeLMA.
d. Western woods; WCLIB or WWPA.

B. Framing Other Than Non-Load-Bearing Partitions: [**Construction or No. 2**grade.

1. Application: Framing other than [**interior partitions not indicated as load bearing**].
2. Species:

a. Hem-fir (north); NLGA.
b. Southern pine; SPIB.
c. Douglas fir-larch; WCLIB or WWPA.
d. Southern pine or mixed southern pine; SPIB.
e. Spruce-pine-fir; NLGA.
f. Douglas fir-south; WWPA.
g. Hem-fir; WCLIB or WWPA.
h. Douglas fir-larch (north); NLGA.
i. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.

C. Framing Other Than Non-Load-Bearing Partitions: Any species and grade with a modulus of elasticity of at least [**1,500,000 psi (10 350 MPa)**] OR [**1,300,000 psi (8970 MPa)**] OR [**1,100,000 psi (7590 MPa)**] thickness and 12-inch nominal (286-mm actual) width for single-member use.

1. Application: Framing other than [**interior partitions not indicated as load-bearing**].

D. Exposed Framing: Hand-select material for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.

1. Species and Grade: As indicated above for load-bearing construction of same type.

2.5 ENGINEERED WOOD PRODUCTS

A. Laminated-Veneer Lumber: Structural composite lumber made from wood veneers with grain primarily parallel to member lengths, evaluated and monitored according to ASTM D 5456 and manufactured with an exterior-type adhesive complying with ASTM D 2559.
   1. Extreme Fiber Stress in Bending, Edgewise: [**3100 psi (21.3 MPa)**]OR [**2900 psi (20.0 MPa)**] depth members.
   2. Modulus of Elasticity, Edgewise: [**2,000,000 psi (13 700 MPa)**] OR [**1,800,000 psi (12 400 MPa)**]

B. Wood I-Joists: Prefabricated units, I-shaped in cross section, made with solid or structural composite lumber flanges and wood-based structural panel webs, let into and bonded to flanges. Comply with material requirements of and with structural capacities established and monitored according to ASTM D 5055.
   1. Web Material: [**Either OSB or plywood, complying with DOC PS 1 or DOC PS 2, Exposure 1**]
   2. Structural Properties: Depths and design values not less than those indicated.
   3. Comply with APA PRI-400. Factory mark I-joists with APA-EWS trademark indicating nominal joist depth, joist class, span ratings, mill identification, and compliance with APA-EWS standard.

C. Rim Boards: Product designed to be used as a load-bearing member and to brace wood I-joists at bearing ends, complying with research or evaluation report for I-joists.

   1. Manufacturer: Provide products by same manufacturer as I-joists.
   2. Material: [**product made from any combination solid lumber, wood strands, and veneers**].
   3. Thickness: [**1 inch (25 mm)**].
   4. Comply with APA PRR-401, [**rim board**] grade. Factory mark rim boards with APA-EWS trademark indicating thickness, grade, and compliance with APA-EWS standard.

2.6 SHEAR WALL PANELS

A. Wood-Framed Shear Wall Panels: Prefabricated assembly consisting of wood perimeter framing, tie downs, and Exposure I, Structural I plywood or OSB sheathing.

B. Steel-Framed Shear Wall Panels: Prefabricated assembly consisting of cold-formed galvanized-steel panel, steel top and bottom plates, and wood studs.

C. Allowable design loads, as published by manufacturer, shall meet or exceed those of building codes and [**of products of manufacturers listed**]. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

2.7 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.
3. Rooftop equipment bases and support curbs.
4. Cants.
5. Furring.
6. Grounds.

B. Dimension Lumber Items: [**Construction or No. 2**] grade lumber of any species.

C. Concealed Boards: [**15**] percent maximum moisture content and [**any of**]the following species and grades:

1. Mixed southern pine or southern pine; No. [**2**] grade; SPIB.
2. Eastern softwoods; No. [**2**] Common grade; NeLMA.
3. Northern species; No. [**2**] Common grade; NLGA.
4. Western woods; [**Construction or No. 2 Common**] grade; WCLIB or WWPA.

2.8 PLYWOOD BACKING PANELS

A. Equipment Backing Panels: Plywood, DOC PS 1, [**Exterior, A-C**] in thickness indicated or, if not indicated, not less than [**3/4-inch (19-mm)**] nominal thickness.

2.9 FASTENERS

A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners **of Type 304 stainless steel**].

B. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

C. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on [**ICC-ES AC01**as appropriate for the substrate.

2.10 METAL FRAMING ANCHORS

A. Allowable design loads, as published by manufacturer, shall meet or exceed those [**of products of manufacturers listed**]. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.

B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.

1. Use for interior locations unless otherwise indicated.

C. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A 653/A 653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 (Z550) coating designation; and not less than 0.036 inch (0.9 mm) thick.

1. Use for wood-preservative-treated lumber and where indicated.

2.11 MISCELLANEOUS MATERIALS

A. Sill-Sealer Gaskets: Glass-fiber-resilient insulation, fabricated in strip form, for use as a sill sealer; 1-inch (25-mm) nominal thickness, compressible to 1/32 inch (0.8 mm); selected from manufacturer's standard widths to suit width of sill members indicated.

B. Sill-Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch (6.4 mm) thick, selected from manufacturer's standard widths to suit width of sill members indicated.

C. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, [**butyl rubber**] compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch (0.6 mm).

D. Adhesives for Gluing [**Furring**] to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

B. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.

C. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate [**furring,**]nailers, blocking, [**grounds,**]and similar supports to comply with requirements for attaching other construction.

D. Install shear wall panels to comply with manufacturer's written instructions.

E. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

F. Do not splice structural members between supports unless otherwise indicated.

G. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

H. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

I. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).
2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.
3. ICC-ES evaluation report for fastener.

3.2 PROTECTION

A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes [**wet enough that moisture content exceeds that specified**], apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061000

SECTION 07 21 00

BUILDING INSULATION

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 this Section.

1.2 SUMMARY

A. This Section includes the following:

1. R-21 Wall Insulation with Vapor Barrier (all exterior walls).
2. Sound Attenuation Insulation and Fire Rated Sound Attenuation Blankets. ALL INTERIOR WALLS TO HAVE SOUND ATTENUATION BATTS/BLANKETS/BOARDS.
3. Tapered rigid insulation on top of roof deck. R-40 mimimum.

B. Related Sections: The following sections contain requirements that relate to this section:

1. "Gypsum Drywall"

1.3 DEFINITIONS

A. Thermal Resistivity: Where the thermal resistivity of insulation products are designated by "r-values," they represent the reciprocal of thermal conductivity (k-values). Thermal conductivity is the rate of heat flow through a homogenous material exactly 1 inch thick. Thermal resistivities are expressed by the temperature difference in degrees F between the two exposed faces required to cause one BTU to flow through one square foot per hour at mean temperatures indicated.

1.4 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Product data for each type of insulation product specified.

C. Samples for verification purposes in full-size units of each type of exposed insulation indicated for each color specified.

D. Product test reports from and based on tests performed by qualified independent testing laboratory evidencing compliance of insulation products with requirements including r-values (aged values for plastic foam insulations), fire performance characteristics, perm ratings, water absorption ratings, and other properties, based on comprehensive testing of current products.

1.5 QUALITY ASSURANCE

A. Fire Performance Characteristics: Provide insulation materials identical to those whose indicated fire performance characteristics have been determined per the ASTM test method indicated below, by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing and inspecting organization.

1. Surface Burning Characteristic: ASTM E 84
2. Fire Resistance Ratings: ASTM E 119
3. Combustion Characteristics: ASTM E 136

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's recommendations for handling, storage, and protection during installation.

B. Protect plastic insulation as follows:

1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
2. Protect against ignition at all times. Do not deliver plastic insulating materials to project site ahead of installation time.
3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide insulation products of one of the following:

1. Batt Insulation (batt insulation in walls to provide moisture control – Certainteed Smartbatt or equal:
   a. CertainTeed Corp.
   b. Owens Corning
   c. Knauf Insulation
   d. OR EQUAL

2.2 INSULATING MATERIALS

A. R-21 Foil-faced batt insulation in all exterior walls

B. Knauf, or equal “EocBatt Insulation with Ecose Technology” in all interior walls.

C. R-40 Batt Insulation. R- 19 in walls.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions with Installer present, for compliance with requirements of the Sections in which substrates and related work are specified and to determine if other conditions affecting performance of insulation are satisfactory. Do not proceed with installation of insulation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of substances harmful to insulations or vapor retarders, including removal of projections that might puncture vapor retarders.

3.3 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's instructions applicable to products and application indicated. If printed instructions are not available or do not apply to project conditions, consult manufacturer's technical representative for specific recommendations before proceeding with installation of insulation.

B. Extend insulation full thickness as indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections that interfere with placement.

C. Apply a single layer of insulation of required thickness, unless otherwise shown or required to make up total thickness.

3.4 INSTALLATION OF GENERAL BUILDING INSULATION

A. Apply insulation units to substrate by method indicated, complying with manufacturer's recommendations. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B. Set vapor retarder faced units with vapor retarder to warm side of construction, except as otherwise indicated. Do not obstruct ventilation spaces, except for firestopping.

1. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to surrounding construction to ensure airtight installation.

3.5 PROTECTION

A. General: Protect installed insulation and vapor retarders from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation will be subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION

SECTION 07 53 23

MEMBRANE ROOFING

PART 1 - GENERAL

1.01 Description

A. Scope

1. Furnish and install and Firestone Roofing Systems at elevator penetration at roof. Courthouse roof was replaced in early 2020 with firestone 80 mil roof – match roofing.
2. All work shall be in strict accordance with standard detail drawings and specifications issued by Firestone Roofing Systems, or equal.

B. Related Work

The work includes, but is not necessarily limited to the installation of:

1. Vapor retarders
2. Insulation
3. Slipsheet
4. Fasteners
5. Roof membrane
6. Membrane flashings
7. Metal flashings
8. Vent boots
9. Sealants
10. Adhesives

1.02 Submittals

A. The roofing contractor shall submit all required items at the time of bidding in one comprehensive package. The package includes:

1. Copies of specifications
2. Samples of all materials to be used that are part of the roofing system.
3. Roofing Systems' printed product data.
4. Specimen copies of Roofing Systems' warranty.
5. Dimensioned shop drawings of roof.
6. Certificates of Compliance from insulation and roofing component manufacturers that all materials to be supplied comply with all pertinent industry standards.

1.03 Quality Assurance

A. The roofing contractor must be authorized by the Roofing Systems manufacturer to install Mechanically Attached Roofing Systems.

B. The roofing contractor must furnish written evidence when submitting a bid that he is authorized by approved Roofing Systems manufacturer to install Roofing Systems.

C. The roofing contractor must have been trained by a technical representative of Roofing

Systems and be familiar with the product.

D. The roofing contractor shall submit the completed Specification Registration to the Roofing Systems' Technical Department for acceptance before ordering material.

E. No deviations shall be made from this specification or Roofing Systems' standards details without prior written authorization from the Roofing Systems= Technical Department.

F. Upon completion of the installation, and after delivery to Firestone Roofing Systems of the Roofer's Certification Statement (RCS) that all work has been completed in strict accordance with the contract specifications and Firestone Roofing Systems' requirements, a warranty elevation shall be made by a representative of Firestone Roofing Systems to inspect the roofing system.

1.04 Delivery, Storage, and Handling

A. Deliver all materials to the job site in their original, tightly-sealed containers or unopened packages for products packaged in this manner.

B. All material shall be clearly labeled with the manufacturer=s name and product identification.

C. All materials must be protected from damage during transit, handling, storage, and installation. Place all materials on pallets and fully protect from moisture.

D. All materials shall be stored in a dry area and protected from the elements. Membrane rolls shall be stored flat on pallets.

E. Adhesive shall be stored at temperatures between 40 degrees F. and 80 degrees F.

F. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined by material manufacturer / supplier.

G. All materials determined to have been damaged shall be replaced with new materials.

1.05 Job Conditions

A. This specification is acceptable for use with structures designed to support lightweight roof assemblies.

B. Firestone Roofing Systems' materials may be installed under certain adverse weather conditions such as extremes of high and low temperatures, or high humidity conditions, but only after consulting the HPG Roofing Systems' Technical Department since special precautions may have to be applied. Installation costs, production rates, and material performance may be affected by the foregoing conditions.

C. Only as much new roofing as can be made weathertight each day shall be installed each day. This includes all flashing work.

D. Any substrate to receive new insulation, membrane, or flashing shall be thoroughly dry.

Should surface moisture occur, the contractor shall provide adequate equipment to dry the substrate.

E. Prior to and during application, the contractor shall ensure that all dirt, debris, and dust shall be removed from surfaces to be roofed for both new and reroofing substrates.

F. On all reroof jobs and for all lightweight deck systems, pullout tests shall be performed by the owner's representative or roofing contractor to verify the condition of the deck or substrate and to confirm system design pullout values. A minimum of 10 pullout tests for areas up to 500 squares, thereafter 2 tests per 100 squares is considered sufficient. Test should be taken approximately 60% in perimeters and 40% from field areas. A written report of pullout test results shall be submitted to the Firestone Roofing Systems' Technical Department for review.

G. Precautions shall be taken to prevent wind blow-off or wind damage during the course of the roofing application. This may necessitate additional securement of temporary construction.

H. The contractor shall verify and ensure that all roof drain lines are unblocked before starting work. If any drain blockages are found, they shall be reported to the owner or his representative and Firestone Roofing Systems in writing.

I. Temporary waterstops shall be installed at the end of each day's work or if inclement weather conditions dictate. These temporary waterstops shall be removed at the start of the next day's work and disposed of properly.

J. Do not install the SR Roofing Membrane in direct contact with any product containing asphalt, coal- tar pitch, creosote, or penta-based materials. Consult Firestone Roofing Systems for special installation requirements and see Section 3.07 for Slipsheet Requirements.

K. Do not allow waste products containing petroleum, grease, acid, solvents, vegetable, or mineral oil, animal oil, animal fat, etc. or direct steam venting to come into direct contact with the Firestone Roofing Membrane. Contact Firestone Roofing Systems for recommendations is such conditions exist.

L. The contractor shall follow all safety regulations as recommended by OSHA.

M. All work shall be scheduled and executed without exposing interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all risks. Arrange work sequences to avoid use of newly constructed roofing for storage, walking surfaces, and equipment movement. Contractor shall provide all necessary protection and barriers to segregate the work areas and prevent damage to adjacent areas. If excessive foot traffic over newly installed membrane is necessary, contractor shall provide plywood or polyester felt protection to prevent damage.

N. All existing roofing materials to be removed for construction shall be immediately removed from the construction site to a dumping area authorized to receive such debris.

O. Any unusual or concealed conditions discovered during the course of the work is to be reported to the owner or his representative immediately in writing and work shall be halted until the owner or his representative has responded with a solution to the problem.

P. When a system is specified to meet an Underwriters Laboratories, Inc. rating, all materials used in this system must be UL labeled and approved for use in that particular system.

Q. All local building codes and requirements must be followed where applicable.

1.06 Warranties

A. **Firestone 30-year no hassle warranty on roofing material. General Contractor and roofing Sub-contractor shall also provide a 10-year no-cost warranty on any and all leak repairs relating to any issue that arises on the roof. This includes any leaks at HVAC units, plumbing penetrations etc.**

1. Provide 30-year no hassle warranty - This warranty provides for cost of labor and materials for loss of water-tightness caused by incidental punctures; puncture/hail – covers up to 2" hail puncture/hail/wind – covers wind up to 100 mph.

PART 2 - PRODUCT

2.01 General

A. **FIRESTONE Premium Platinum TPO Roofing system (see attached Firestone Specification)**

B. Components to be used that are other than those manufactured by Firestone Roofing Systems may be accepted based on chemical compatibility and published performance data. The specifications, installation instructions, limitations and /or restrictions of the respective manufacturers must be reviewed by the designer for acceptability for use with Firestone Roofing Systems' products. All of these components may be considered on a case-by-case basis and must be accepted in writing by the Firestone Roofing Systems' Technical Department.

2.03 Related Materials - Supplied By Firestone. Provide all required/related accessories for complete roof installation.

A. Solvent - Firestone Solvent Welding Solution shall be furnished in one gallon cans with the HPG Roofing Systems' label attached.

B. Seam or Lap Sealant - Firestone Sealant shall be a liquid PVC sealing compound, shall have a consistency equal to that of "honey" at room temperature and be furnished in one

gallon cans with the Firestone Roofing Systems' label attached.

C. Caulk - Firestone Caulk is a single component, non-sag elastomeric polyurethane sealant.

D. Adhesive - Firestone Membrane Adhesive shall be used for bonding the SR flashing membrane to vertical substrates of wood, metal, and concrete.

E. Aluminum Foil Tape - Firestone Roofing Systems' supplied Aluminum Foil Tape shall be a 3 mil tape with acrylic adhesive used over Firestone metal joints prior to Firestone Roofing Systems' DM-80 strips being welded over the joints.

F. Slipsheets - Firestone Roofing Systems offers a variety of slipsheets dependent upon the particulars of an application. Some of these are the following:

1. Seekure Paper - a laminated kraft paper with the fiberglass scrim reinforcement.
2. Polyester Mat Protection Material - 9 oz. Needle-punched polyester fabric.
3. DN Flameguard Slipsheet - a laminated aluminum foil / kraft paper with a flame-extinguishing adhesive and a fiberglass scrim reinforcement for use in some UL and or FM assemblies.
4. Microfoam - a multi-ply polypropylene foam used to cushion over rough, uneven urfaces.

G. Firestone Membrane Cleaner - HPG Membrane Cleaner is a clear liquid available in 1 gallon cans used for cleaning asphalt and dirt from membrane surface.

H. Flashing Membrane - May be SR-50, SR-60, or SR-80 depending on the thickness of the field sheet.

I. Flashing Metal - Firestone Metal shall be 24 gauge galvanized steel laminated to 40 mils of S membrane in white, grey, and black colors used for flashings in certain constructions.

J. Termination Bar - The Firestone Termination shall be extruded aluminum bar 3/32" thick used to terminate adhered, reinforced membrane base flashings in certain constructions.

K. Membrane Fasteners and Discs -

1. Firestone non-penetrating fasteners

L. Walkway - Walkway shall be WBP walkway consisting of PVC membrane 0.100 inch thick for traffic areas.

M. Prefabricated Details - Firestone inside/outside corners, Firestone PVC vent pipe boots in sizes to fit pipes from 3/4" - 11", Firestone PVC pitch-pockets.

N. Pitch-Pocket Filler - Firestone Pourable Sealer shall be polyurethane sealant for use in pitch pockets.

O. Firestone Joint Cover Strips - for use in waterproofing joints of Firestone metal.

P. Firestone Seven Inch Disc Caps - are prefabricated round pieces of membrane for use in the Firestone disc-cap method of installation to cover the steel discs and fasteners used

to secure the membrane to the roof through the top of the sheet.

2.04 Related Material By Others

A. Wood Nailers

1. Nailers shall be # 2 or better lumber. Numbers shall be pressure treated for rot resistance (wolmonized or osmose treated). Creosote and asphaltic preservatives are not acceptable.
2. Wood Nailers shall conform to Factory Mutuals Loss Prevention Data Sheet 1-49 recommendations.

B. Insulation

1. Insulation shall be installed as a separation layer over the existing substrate and /or to obtain the desired thermal value.
2. Insulation shall be compatible with SR membranes or have an acceptable slipsheet placed between the insulation and the membrane.
3. The following roofing insulation boards are acceptable for use in an HPG Mechanically Attached Roofing System when a materials and labor warranty is to be issued:
   a. Polyisocyanurate insulations having nonasphaltic or foil facers meeting or exceeding the requirements for Fed. Spec. HH-I-1972 with minimum compressive resistance of 18 p.s.i.
4. The Firestone Roofing Systems' Ten and Fifteen Year Full System Warranties require specific insulation products be used. Consult HPG Roofing Systems' Technical Department for specific requirements. (Warranty to be 30 year per 1.06 follow manufacturer's recommendations for installation)
5. Insulation(s) thickness shall be a minimum of 1.0 inches (or per manufacturer's min. recommendation).
6. Insulation manufacturer's warranty.
   a. Insulation manufacturer's shall send its recommendations for the use of its product to the owner with a copy to Firestone Roofing Systems and their specific warranty conditions for the duration of the Firestone Roofing Systems' Warranty. In addition, fastener recommendations and attachment rate shall be sent to Firestone Roofing Systems prior to job start.

2.05 Precautions

A. Do not use Firestone Roofing Systems' products near fire or flame.

B. Avoid breathing vapors of solvent, sealant, and adhesives. Use with adequate ventilation. Avoid prolong contact of solvents, sealants, and adhesives with skin.

C. Do not use open flames to expedite drying of surfaces, sealants, or adhesives.

D. Consult Material Safety Data Sheets and container labels for specific safety.

E. Do not paint Firestone Metal or membrane with oil-based paint. Consult Firestone Roofing Systems for recommendations.

PART 3 - EXECUTION

3.01 General

A. When installing Firestone Roofing Systems' Mechanically Attached Roofing Membrane in cooler weather, it is recommended that liquids such as solvents, sealants, etc. be stored at warmer temperatures (40 degrees F. or more) until just prior to use in order to facilitate the installation.

3.02 Substrate Conditions

The following general conditions apply to the substrate that will receive an Firestone Roofing Systems' Mechanically Attached Roofing System for both reroof and new construction:

A. The roof deck must be structurally sound to provide proper securement for mechanical fasteners. Areas showing a loss of integrity because of corrosion, rotting, warping, concrete spalling, etc., must be repaired or replaced prior to installing the roofing system.

B. Contact Firestone Roofing Systems' Mechanically Attached Roofing System over the following deck substrates in new construction, provided that an acceptable insulation and / or the appropriate slip sheet is installed over the substrate as needed.

1. Lightweight Insulating Concrete Fill and Metal Formwork (minimum 28 gauge metal formwork) - the roof deck shall be cured and dry to the deck manufacturer's and / or industry standards and shall be smooth and free of ridges and depressions. All necessary venting as recommended by the roof deck manufacturer shall be accomplished.

3.03 Preparation or Existing Substrate

A. General

1. Examine substrates to which the roofing materials are to be applied to ensure that their condition is satisfactory for the Firestone Roofing Systems application. Do not permit voids greater than 1/4" width in the substrate. Substrates for roofing material shall be dry and free of oil, dirt, grease, sharp edges, and debris. Inspect substrates and correct defects before application of roofing membrane.

2. Sweep and remove loose gravel.
3. Large blisters shall be cut and patched to provide reasonably level substrate surface.
4. Gravel over existing nailers must be totally removed prior to installing new nailers and flashings. Verify that the existing nailers are securely anchored to the roof decks.
5. When an additional thickness of insulation is being added, new nailers must be added to match the height of the new insulation. Nailers must be securely anchored to the roof deck per Section 3.05.
6. All roof surface shall be free of ponded water, ice, or snow.
7. Specifier and / or roofing contractor shall determine the condition of the existing roof deck and roofing. Areas with deteriorated decking or wet insulation or other materials shall have those affected material removed and replaced.
8. When removing an existing roof during reroofing, remove only that amount of roofing and flashing that can be made watertight with new Firestone Roofing Systems= materials in a one-day period or previous to the onset of inclement weather.

3.05 Wood Nailers

A. Install nailers at the perimeter of the roof and around all roof penetrations and projections (unless otherwise shown on Firestone Roofing Systems' standard details).

B. Nailers shall be firmly anchored to the decks at a maximum of 2'-0" o.c. and shall resist a pullout force of 200 lbs./ lineal foot in any direction. A 2" vent space shall be provided between adjacent lengths of nailers. Fasteners shall be installed within 6 inches of each end. Spacing and fastener embedment shall conform to Factory Mutual Loss Prevention Data Sheet 1-49 recommendations.

C. Height of nailers shall match the surface level of the insulation and roof membrane.

D. All woodwork to be reused shall resist a minimum force of 200 lbs./ lineal foot in any direction and shall be free of rot. If any existing woodwork is questionable, it should be removed and replaced with suitable new materials.

3.06 Insulation Installation

A. Insulation shall be installed in accordance with the insulation manufacturer=s current published specifications and recommendations for use with mechanically fastened roofing.

B. Insulation shall be secured to the roof deck in accordance with the insulation manufacturer=s requirement. As a minimum requirement, it shall be secured per the current Firestone Roofing Systems= Insulation Technical Bulletin, i.e., 5 fasteners per 4' x

8' board, 4 fasteners per 4' x4' board or 3' x 4' board and two fasteners per 2' x 4' board, and with tight joints in parallel courses with end joints staggered. When more than one layer of insulation is to be used, succeeding layers are to be laid staggered in relation to the previous layer of insulation and all joints shall be staggered.

C. Insulation shall be neatly cut to fit around all penetrations and projections with a maximum allowable gap of 1/4".

D. Open joints shall be repaired with the insulation like material.

E. When the insulation is installed on steel decks after a complete tear-off, or in new construction, edges shall be checked so that no edges are left substantially unsupported along the flutes.

F. Insulation shall be feathered or tapered to provide a sump area a minimum of 36" x 36" where possible at all drains.

G. Install no more insulation in one day that can be covered with the Firestone Roofing Systems' membrane or when the onset of inclement weather is anticipated.

H. Install tapered insulation in accordance with tapered fabricator=s shop drawings.

3.07 Slipsheet Installation

Slipsheet installation shall be in accordance with the appropriate following method:

A. Reinforced kraft paper shall be loosely laid. Lap joints shall be 4" minimum.

B. Overlap microfoam a minimum of 4" at each edge. Leave joints untaped.

C. The installation of the slipsheet is to be immediately followed by the installation of the roof membrane and fasteners to prevent displacement of the slipsheet.

3.08 Membrane Installation

A. General - Unroll the SR sheet roofing and position without stretching the membrane. Allow the membrane to relax at least 15 minutes when the temperature is above 60 degrees F., or 30 minutes when the temperature is below 60 degrees F., prior to installation. Inspect for any damaged membrane. Remove sections of membrane that are creased or damaged. Lab sheets a minimum of 5", for In-Lap Fastening, leave space for mechanical fasteners and discs and space for a 2" nominal weld width. For Disc-Cap and Strip Weld fastening methods, laps shall be a minimum 2" for continuous weld area.

B. In - Lap Fastening

1. Perimeter - When installing Firestone Roofing Systems, install two half width sheets parallel to the perimeter and fastened with Firestone Roofing Systems= accepted fasteners and discs at the predetermined spacing in the lap area in a line centered

approximately 11/2" from the edge of the sheet leaving 2" of membrane outside the disc. Weld lap area to metal base flashing continuously a nominal 2" weld width.

Perimeter areas shall be determined by one of the following methods:

a. Firestone Roofing Systems= published Standard Fastening Pattern.

b. For Factory Mutual insured buildings, follow guidelines in FM=s Loss Prevention Data Sheet 1-29S.

Fasteners shall be supplied by Firestone Roofing Systems and shall be installed according to fastener manufacturer's instructions and using the fastener manufacturer's recommended fastening tools.

When installing SR Roofing Membranes using SR membrane flashing, the first two perimeter sheets shall be half width sheets. Subsequent sheets may be either half width sheets or full width sheets as required.

2. Field Areas

a. Membranes should run perpendicular to the direction of steel deck flutes and the orientation of wood decks.

b. All membrane overlaps are recommended to be installed to facilitate the flow of water where possible.

c. All membrane sheets shall be overlapped a minimum of 5" to provide space for fastener and disc placement and for a continuous nominal 2" weld width.

C. The roofing contractor shall check all welded seams for continuity and integrity using a rounded screwdriver or other suitable blunt object. Seam checks shall be made daily by the contractor. Sample of seams 2" wide and 12" long shall be taken a minimum of three times a day from completed seams; at least one to be from the first seam made of the day. Each test cut shall be patched by the contractor at no extra charge to the owner. Test cuts shall be used to determine adequate seam strength on the rooftop by the roofing contractor.

3.09 Welding of Lap Areas

A. General

1. Firestone Roofing Systems may be welded in two ways, either by solvent welding or by hot air welding but only hot air welding is acceptable for installing field seams.

2. Firestone Roofing Systems recommends the use of hot-air welding when

temperatures are below 40 degrees F. or when significant moisture is present in amounts that would prevent positive seaming.

3. All surfaces to be welded shall be clean and dry. No adhesive shall be present within the lap areas.

B. Hot Air Welding

1. Machines for hot air welding are available from several different sources. Each manufacturer=s instructions for use shall be followed, as well as all local codes regarding electric grounding, supply, and other related functions. Since most automatic welding machines require 218 to 230 volts, the use of a portable generator on the roof is recommended for greater flexibility.

2. Hand-held welding machines are also available to weld membrane. After the preheated nozzle tip is applied in the overlap area and the material starts to flow, immediately follow with a hand roller to press the heated membrane surfaces together with slow, even movements. Keep the roller within one inch of the nozzle tip. Angle the hot air tool so that the flowing air faces the roller. The temperature of the hot air tool shall be adjusted so that a minimum of smoke is developed and material from the bottom of the sheet begins to soften and flow from the seam. Seam strength may be tested when cool. For best results, testing seams eight hours after the hot air welding is recommended.

C. Solvent Welding - For detailing only

1. All seam surfaces must be clean and dry. Clean dirty seam surfaces with a dry or damp cotton rag and with mild detergent and water. Remove any detergent residue. Dry surfaces thoroughly before solvent welding.

2. When hand held welding with solvent, evenly coat approximately 16" - 18" of seam length with Firestone Solvent Welding agent, simultaneously pressing down the top sheet to the brush by hand. Insure that both surfaces to be welded are coated with solvent at the same time. Immediately weight the seam with a sand-filled polyethylene bag. Continue welding along the seams and lift (do not drag) the sand from section to section. Testing the solvent-welded seam should not be accomplished before 24 hours have elapsed.

3. Never solvent weld when air temperatures are below 40 degrees F. or during excessively high humidity conditions which could cause condensation on the membrane and prevent positive seaming. At temperatures just above 40 degrees F., pre-heating with hot air may be necessary. Exercise caution when solvent welding on cool mornings as any condensation (dew) on the membrane will prevent

a proper weld.

D. Quality Control of Seams

After either seaming method, the seams are checked for integrity with a probe. Any openings or “fishmouths” shall be repaired with a hand-held hot air tool fitted with a narrow nozzle tip and with a roller. Each day several sections of seams welded the previous day (if solvent-welding) or the same day if heat welding, shall be pulled apart by the roofing contractor to test the quality of the welds. Should the welds be deficient, a more thorough examination of the work performed must be carried out and necessary repairs be made. Firestone Seam Sealant is used to seal the membrane edges where reinforcing fabric is cut and exposed and shall be completed by the end of each working day.

3.10 Flashing Installation

A. Metal Flashing

1. Firestone metal flashing shall be installed in accordance with the Firestone Roofing Systems’ standard detail drawings.

2. Complete all metal work concurrently with roofing and flashings so that a watertight condition exists daily.

3. Firestone metal transitions are required at all peaks, valleys, and slope intersections where the net change in slope exceeds 1 2" in 12". In some cases, reinforced membrane may be sufficient for ridges, but should be fastened securely at all transition areas. Contact the Firestone Roofing Systems= Technical Department for specific recommendations.

4. Metal shall be installed to provide adequate resistance to bending and to allow for normal thermal expansion and contraction.

5. All metal joints shall be watertight and staggered over nailer joints to prevent joints in nailers and joints in metal from aligning.

6. Base flashings shall extend a minimum of 8" above roofing level unless previously accepted by the owner or his representative and Firestone Roofing Systems.

7. All metal flashings and terminations shall be securely fastened in the plane of the roof deck with fasteners recommended by Firestone Roofing Systems.

8. Fasteners and roofing nails used to secure flashings to wood nailers shall be stainless steel, galvanized metal or other corrosion resistant material, with a head diameter of not less than 3/8", and with fastener penetration into the wood nailer

of at least 1 2".

9. Scuppers and metal overflows shall be assembled using Firestone Metal.

10. All Firestone Metal shall be fabricated to form hemmed edges to prevent sharp metal edges from cutting the membrane, except when in conjunction with wood nailers.

B. Membrane Flashings

1. All membrane flashings shall be installed concurrently with the roof embrace as the job progresses. Temporary flashings are not allowed without prior written approval from the Firestone Roofing Systems' Technical Department. Should any water penetrate the new roofing because of incomplete flashings, the affected area shall be removed and replaced at the contractor's expense.

2. Membrane flashings shall be fully adhered using Firestone Membrane Adhesive or loosely-laid, secured to 3" Firestone Metal strips attached at a maximum spacing of 18" o.c. in the vertical direction

a. If the membrane flashings are to be fully adhered using Firestone Membrane Adhesive, the following conditions must be met.

1. All surfaces to be fully adhered should be compatible, dry and smooth with no excessive surface roughness. In an existing asphalt surface is present, a 2" minimum plywood or 26 gauge minimum galvanized metal asphalt barrier must be placed over the asphaltic surface.

2. After the proper surface has been prepared, Firestone Membrane Adhesive shall be applied using a minimum 2" nap paint rollers at a rate of approximately two and a half gallons per 1000 square feet or surface area depending on the type of substrate. Apply adhesive in smooth, even coatings, avoiding globs, puddles, or other types of irregularities.

Adhesive should be applied to the area of substrate to be flashed. Let adhesive dry sufficiently to produce strings when touched with a clean, dry finger. SR membrane used as a flashing shall be cut to a workable length and shall have an even coating of Firestone Membrane Adhesive applied to it at a rate of approximately 1000 square feet. Carefully roll onto the previously

coated substrate after the adhesive coating the membrane has dried sufficiently as indicated above.

Avoid wrinkling membrane when applying to substrate. The amount of adhesive which can be successfully applied to the membrane will vary depending on ambient temperature, humidity, and manpower. After mating membrane to the substrate, carefully roll the membrane with hand roller to promote maximum positive contact between the membrane and the substrate. Overlap all adjacent flashing sheets a minimum of 2". The SR flashings shall extend a minimum of 6" onto the field sheet and adhered securely, or a minimum of 3" in front of the fastener plates with a nominal 2" and be securely welded.

3. Areas of the flashing membrane to be welded are not to have Firestone Membrane Adhesive applied to them.

b. When loose flashing membranes are used, Firestone Metal strips 3" wide must be used to provide positive mechanical attachment to various substrates. The PVC coated 3" Firestone Metal strip is spaced 18" maximum center-to-center in the vertical direction and is attached horizontally at 12" maximum center-to- center. Wider spacing may be considered depending on substrate and local wind conditions but only if accepted by Firestone Roofing Systems in writing. If existing asphalt is present, use appropriate asphalt barrier. Contact the Firestone Roofing Systems= Technical Department for recommendations.

c. All flashings shall extend a minimum of 8" above roofing level unless previously accepted by the owner or his representative and Firestone Roofing Systems.

d. All flashings shall be solvent welded or hot air welded at their connections with the roofing membrane.

e. SR membrane flashing shall be terminated according to Firestone Roofing Systems' Standard Details.

3.11 Waterstops

A. Install temporary cutoffs around incomplete edges of the roofing assembly at the end of

each day's work and when work must be postponed because of inclement weather. Straighten the insulation line using pieces of insulation loosely laid, and seal the Firestone Roofing Systems= sheet membrane to the deck or existing membrane. Use a heavy application of roof cement or hot asphalt at least six inches in width overlayed with an embedded reinforcement. Remove the temporary seals completely when work resumes, cutting out the contaminated membrane. Remove all sealant, contaminated membrane, insulation fillers, etc. from the work area and properly dispose off-site.

END OF SECTION 07 53 23

SECTION 07 71 13

MANUFACTURED COPINGS GENERAL

1.1 SECTION INCLUDES

A. Copings.

1.2 RELATED REQUIREMENTS

A. Section 07 92 00 – Joint Sealants.

1.3 REFERENCE STANDARDS

A. Factory Mutual (FM).

B. Single Ply Roofing Industry (SPRI) (www.spri.org):
   1. ANSI/SPRI/FM 4435/ES-1 – Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.

1.4 PREINSTALLATION MEETINGS

A. Convene preinstallation meeting 2 weeks before start of installation of materials.

B. Require attendance of parties directly affecting Work of this Section, including Contractor, Architect, installer, and manufacturer's representative.

C. Review the Following:
   1. Materials.
   2. Installation.
   3. Adjusting.
   4. Cleaning.
   5. Protection.
   6. Coordination with other Work.

1.5 SUBMITTALS

A. Comply with Division 01.

B. Product Data: Submit manufacturer's product data, including installation instructions.

C. Shop Drawings: Submit manufacturer's shop drawings, including plans, elevations, sections, and details, indicating dimensions, materials, components, fasteners, finish, and accessories.

D. Samples: Submit manufacturer's sample of materials.
   1. Sample Length: Minimum 5-1/2 inches (140 mm).

E. Color Samples: Submit manufacturer's color samples of materials, consisting of complete color chart representing manufacturer's full range of available colors.
   1. Submit metal chips of specific colors as requested by the Architect.

F. Manufacturer's Certification: Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.

G. Warranty Documentation: Submit manufacturer's standard warranty.

1.6 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Manufacturer regularly engaged in the manufacturing of materials of similar type to that specified for a minimum of 10 years.

B. Installer's Qualifications:
   1. Installer regularly engaged in installation of materials of similar type to that specified for a minimum of 5 years.
   2. Use persons trained for installation of materials of similar type to that specified following manufacturer's installation instructions.

C. Testing: Meet specified testing requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging.

B. Storage and Handling Requirements:
   1. Store and handle materials in accordance with manufacturer's instructions.
   2. Keep materials in manufacturer's original, unopened containers and packaging until installation.
   3. Store materials in clean, dry area indoors.
   4. Do not store materials directly on floor or ground.
   5. Protect materials and finish during storage, handling, and installation to prevent damage.

1.8 WARRANTY

A. Warranty Period, Product:
   1. Wind, 120 mph: 20 years.
   2. Five-year workmanship warranty covering replacement or repair of products that are defective in material or workmanship.

B. Warranty Period, Finish: Limited 30-year warranty for prefinished coil-coated steel and aluminum coated with Kynar 500 standard colors covering fade, chalk, and film integrity.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: Metal-Era, Inc., 1600 Airport Road, Waukesha, Wisconsin 53188. Phone 800-558-2162. Fax 800-373-9156. www.metalera.com. info@metalera.com.

B. Substitutions: Equals permitted.

2.2 MANUFACTURED COPINGS

A. Coping: Metal-Era “Creative Design” Leak-Tite coping.
   1. Cover Material: 0.063-inch (1.60-mm) aluminum.
   2. Cover Formed Lengths: 12’-0” (3.65 m).
   3. Concealed Splice Plates: 8 inches (203 mm) wide; with factory-applied, dual, non-curing, isocryl butyl sealant strips at each joint.
   4. Anchor Clips: Galvanized steel, 12 inches (305 mm) wide.
   5. Inside Face: 6__ inches.
   6. Outside Face: Indicated on the Drawings.
   7. Horizontal Space Provided for Wall Size Variations: 3/8 inch (10 mm), inside face.

2.3 FINISHES

Specifier Notes: Specify finish for the materials. Delete finish not required. Consult Metal-Era, Inc. for description of the finishes available for each cover material and for information regarding other finishes.

   1. Finish: Hylar 5000/Kynar 500.

Specifier Notes: Specify color. Consult Metal-Era, Inc. for standard and custom colors.

   2. Color: Allow for five separate colors.

2.4 ACCESSORIES

A. Factory-Fabricated Accessories:
   1. Miters:
      a. Outside Miters: 90 degrees.
      b. Inside Miters: 90 degrees.
      c. Transition miters.
      d. Straight transition miters.
      e. T-miters.
      f. Z-miters.
      g. Step-up miters.
      h. Peak/valley miters.
   2. Endcaps:
      a. Right endcaps.
      b. Left endcaps.
   3. Endwall Flashings, Coping Version:
      a. Right endwall flashings.
      b. Left endwall flashings.
   4. Endwall Flashings, Splice-Plate Version:
      a. Right endwall flashings.
      b. Left endwall flashings.
   5. Pilaster caps.
   6. Accessory Type: [Welded] or [Quicklock].

B. Joint Sealants: Specified in Section 07 92 00.

C. Fasteners: Appropriate for intended substrate.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas to receive materials.

B. Verify surfaces to support materials are clean, dry, straight, secure, and of proper dimensions.

C. Notify Architect of conditions that would adversely affect installation.

D. Do not begin installation until unacceptable conditions are corrected.

3.2 INSTALLATION

A. Install materials in accordance with manufacturer's instructions at locations indicated on the Drawings.

B. Remove protective vinyl film immediately before installation.

C. Install materials to provide watertight termination at leading edge of roofing material.

D. Install materials to allow for thermal movement.

E. Joint Sealants: Apply joint sealants in accordance with manufacturer's instructions.

3.3 ADJUSTING

A. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.

B. Remove and replace with new material, damaged components that cannot be successfully repaired, as determined by Architect.

3.4 CLEANING

A. Clean materials promptly after installation in accordance with manufacturer's instructions.

B. Do not use harsh cleaning materials or methods that could damage finish.

3.5 PROTECTION

A. Protect installed materials to ensure that, except for normal weathering, materials will be without damage or deterioration at time of Substantial Completion.

END OF SECTION

SECTION 07720 - ROOF ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Roof curbs.
2. Equipment supports.
3. Relief vents.
4. Ridge vents.
5. Roof walkways.
6. Heat-and-smoke vents.
7. Snow guards.

B. Related Sections include the following:

1. Division 5 Section "Metal Fabrications" for ladders and miscellaneous metal framing and supports.
2. Division 6 Section "Rough Carpentry" for roof sheathing, wood cants, and wood nailers.
3. Division 6 Section "Wood Decking" for wooden roof decks.
4. Division 7 Section "Sheet Metal Flashing and Trim" for shop- and field-fabricated metal flashing and counterflashing, scuppers, gutters and downspouts, fasciae, roof expansion-joint covers, valleys, and miscellaneous sheet metal trim and accessories.
5. Division 7 Section "Manufactured Roof Specialties" for fasciae, copings, gravel stops, and roof expansion-joint covers.
6. Division 7 Section "Roof Expansion Assemblies" for roof expansion-joint covers.
7. Division 7 Section "Plastic Unit Skylights" for small individual skylights.
8. Division 7 Sections for roofing accessories included as part of roofing Work.
9. Division 9 Section "Painting" for shop primers and field painting.
10. Division 15 Section "Power Ventilators" for power roof-mounted ventilators.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, materials, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: Show fabrication and installation details. Indicate dimensions, weights, loadings, required clearances, method of field assembly, and components. Include plans, elevations, sections, details, and attachments to other Work.

C. Coordination Drawings: Roof plans drawn to scale and coordinating penetrations and roof-mounted items. Show the following:

1. Size and location of roof accessories specified in this Section.
2. Method of attaching roof accessories to roof or building structure.
3. Other roof-mounted items including mechanical and electrical equipment, ductwork, piping, and conduit.

D. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for roof accessories with factory-applied color finishes.

E. Samples for Verification: For each type of exposed finish required, prepared on Samples in manufacturer's standard sizes, and of same thickness and material indicated for the Work. If finishes involve normal color or shade variations, include sample sets showing the full range of variations expected.

1.4 QUALITY ASSURANCE

A. Standards: Comply with the following:

1. SMACNA's "Architectural Sheet Metal Manual" details for fabrication of units, including flanges and cap flashing to coordinate with type of roofing indicated.
2. NRCA's "Roofing and Waterproofing Manual" details for installing units.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Roof Curbs and Equipment Supports:

a. AES Industries, Inc.
b. Colony Custom Curbs.

c. Commodity Products Company, Inc.
d. Conn-Fab Sales, Inc.
e. Curbs Plus, Inc.
f. Custom Curb, Inc.
g. Gieske Custom Metal Fabricators.
h. Goeller Enterprises.
i. LMCurbs.
j. Loren Cook Company.
k. Metallic Products Corporation.
l. Pate Co.(The).
m. Roof Products & Systems Corp.
n. ThyCurb, Inc.
o. Uni-Curb, Inc.
p. Vent Products Co., Inc.

2. Relief Vents:

a. Aura Ventilation, Inc.
b. Bristolite Skylights.
c. Commodity Products Company, Inc.
d. Dowco Products Group.
e. Dur-Red Products, Inc.
f. Goeller Enterprises.
g. Metallic Products Corporation.
h. Solar Group (The).
i. ThyCurb, Inc.
j. Trimco, Inc.
k. Vent Products Co., Inc.
l. Western Canwell.

3. Ridge Vents:

a. Air Vent, Inc.
b. Alcoa Building Products.
c. Commodity Products Company, Inc.
d. Cor-A-Vent, Inc.
e. GAF Materials Corporation.
f. Klauer Manufacturing Co.
g. Metallic Products Corporation.
h. Mid-America Building Products Corporation.
i. Niff-Corr, Inc.
j. Obdyke: Benjamin Obdyke, Inc.
k. Petersen Aluminum Corp.
l. Plyco Corporation.
m. Solar Group (The).

n. ThyCurb, Inc.
o. Trimco, Inc.
p. Trimline Roof Ventilation Systems.
q. Western Canwell.
r. Nystrom Products Co.
s. O'Keeffe's Inc.
t. Precision Stair Corporation.
u. Roof Products & Systems Corp.
v. ThyCurb, Inc,
w. Trimco, Inc.
x. Wasco Products, Inc.

4. Roof Walkways:

a. GS Metals Corp.
b. Unistrut Corporation.

5. Hatch-Type Heat-and-Smoke Roof Vents:

a. Babcock-Davis Hatchways, Inc.
b. Bilco Company.
c. Bristolite Skylights.
d. Custom Curb, Inc.
e. Dur-Red Products, Inc.
f. Goeller Enterprises.
g. Hi Pro International, Inc.
h. Milcor, Inc.
i. Naturalite Skylight Systems.
j. Nystrom Products Co.
k. O'Keeffe's Inc.
l. ThyCurb, Inc.
m. Wasco Products, Inc.

6. Drop-out, Dome-Type Heat-and-Smoke Vents:

a. C/S Groups.
b. Custom Curb, Inc.
c. Dur-Red Products, Inc.
d. Goeller Enterprises.
e. Hi Pro International, Inc.
f. Milcor, Inc.
g. Naturalite Skylight Systems.
h. O'Keeffe's Inc.
i. Pate Co. (The).
j. Plasteco, Inc.

k. Wasco Products, Inc.

2.2 MATERIALS, GENERAL

A. Aluminum Sheet: ASTM B 209 (ASTM B 209M) for alclad alloy 3005H25 or alloy and temper required to suit forming operations, with mill finish, unless otherwise indicated.

B. Extruded Aluminum: ASTM B 221 (ASTM B 221M) alloy 6063-T52 or alloy and temper required to suit structural and finish requirements, with mill finish, unless otherwise indicated.

C. Galvanized Steel Sheet: ASTM A 653/A 653M with G90 (Z275) coating designation; commercial quality, unless otherwise indicated.

1. Structural Quality: Grade 40 (Grade 275), where indicated or as required for strength.

D. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M with Class AZ-50 (AZ-150) coating, structural quality, Grade 40 (Grade 275), or as required for strength.

E. Fasteners: Same metal as metals being fastened, or nonmagnetic stainless steel or other noncorrosive metal as recommended by manufacturer. Match finish of exposed fasteners with finish of material being fastened.

F. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, or PVC; or flat design of foam rubber, sponge neoprene, or cork.

G. Bituminous Coating: SSPC-Paint 12, solvent-type bituminous mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mil (0.4-mm) dry film thickness per coating.

H. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.

I. Elastomeric Sealant: Generic type recommended by unit manufacturer that is compatible with joint surfaces; ASTM C 920, Type S, Grade NS, Class 25, and Uses NT, G, A, and, as applicable to joint substrates indicated, O.

J. Roofing Cement: ASTM D 4586, nonasbestos, fibrated asphalt cement designed for trowel application or other adhesive compatible with roofing system.

2.3 ROOF CURBS

A. General: Provide roof curbs capable of supporting superimposed live and dead loads, including equipment loads and other construction to be supported on roof curbs. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.

B. Fabrication: Unless otherwise indicated or required for strength, fabricate units from minimum 0.0747-inch- (1.9-mm-) thick, structural-quality, hot-dip galvanized or aluminum-zinc alloy-coated steel sheet; factory primed and prepared for painting with welded or sealed mechanical corner joints.
1. On ribbed or fluted metal roofs, form flange at perimeter bottom to conform to roof profile.
2. Provide manufacturer's standard rigid or semirigid insulation where indicated.
3. Provide formed cants and base profile coordinated with roof insulation thickness.
4. Fabricate units to minimum height of 8 inches (200 mm), unless otherwise indicated.
5. Sloping Roofs: Where slope of roof deck exceeds 1/4 inch per foot (1:48), fabricate curb units with water diverter or cricket and with height tapered to match slope to level tops of units.

2.4 EQUIPMENT SUPPORTS

A. General: Provide equipment supports capable of supporting superimposed live and dead loads, including equipment loads and other construction to be supported. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.

B. Fabrication: Unless otherwise indicated or required for strength, fabricate units from minimum 0.0747-inch- (1.9-mm-) thick, structural-quality, hot-dip galvanized or aluminum-zinc alloy-coated steel sheet; factory primed and prepared for painting with welded or sealed mechanical corner joints.
1. On ribbed or fluted metal roofs, form flange at perimeter bottom to conform to roof profile.
2. Fabricate units to minimum height of 8 inches (200 mm), unless otherwise indicated.
3. Sloping Roofs: Where slope of roof deck exceeds 1/4 inch per foot (1:48), fabricate support units with height tapered to match slope to level tops of units.

2.5 RELIEF VENTS

A. Low-Profile Gravity Ventilators: Provide units of sizes, style, and profile indicated; fabricated from the following materials and including the following features:

1. Material: Galvanized steel sheet.
2. Material: Aluminum sheet.

a. Finish: Prime painted.
b. Finish: Baked enamel.

c. Finish: High-performance organic coating.
d. Finish: Clear anodic.
e. Finish: Color anodic.

3. Bird Screens: 1/2-inch- (13-mm-) square mesh with 0.062-inch- (1.6-mm-) diameter, stainless-steel wire.
4. Insect Screens: 14-by-18 (1.5-by-1.1-mm) mesh with 0.0123-inch- (0.3-mm-) diameter, anodized aluminum wire in removable, rewirable frames.
5. Manual Dampers: Designed for operation from floor directly below ventilator unit.
6. Roof Curb Construction: Provide curb-mount units designed for installing 1-1/2-inch- (38-mm-) thick wood curbs.
7. Roof Curb Construction: Provide self-flashing units with integral self-supporting double-wall aluminum curb, enclosing minimum 1-inch- (25-mm-) thick, glass-fiber board insulation (or equivalent), and with minimum 3-inch (75-mm) roof flanges.

2.6 RIDGE VENTS

A. General: Ventilating ridge cap with ventilating mesh providing a minimum net free area of 18 sq. in./ft. (380 sq. cm/m), of manufacturer's standard design.

1. Aluminum: Fabricate from sheet aluminum with baffles to prevent snow and rain entering and with weep holes to allow water to drain to roof. Provide required splice plates and end caps.

a. Finish: Clear anodic.
b. Finish: Color anodic.
c. Finish: Baked enamel.
d. Finish: High-performance organic coating.

2.7 ROOF WALKWAYS

A. Metal-Grating Type: Formed-metal plank gratings consisting of C-shaped channels rolled from heavy sheet metal of thickness indicated, and punched in serrated diamond shape to produce raised slip-resistant surface and drainage holes. Provide support framing, brackets, connectors, nosings, and other accessories and components needed for complete installation. Include step units for changes in elevation.

1. Material: 0.07-inch (1.8-mm), structural-quality, galvanized steel sheet.
2. For Flat Roofs: Provide resilient, hard rubber pads under each support unit to isolate supports from and protect roof membrane.

2.8 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.9 ALUMINUM FINISHES

A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

B. Conversion-Coated and Factory-Primed Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below).

1. Organic Coating: Air-dried primer of not less than 2.0-mil (0.5-mm) dry film thickness.

C. Class I, Clear Anodic Finish: AA-M12C22A41 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 607.1.

D. Class I, Color Anodic Finish: AA-M12C22A42/A44 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 606.1 or AAMA 608.1.
1. Color: As selected by Architect from the full range of industry colors and color densities.

E. Baked-Enamel Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Apply baked enamel complying with paint manufacturer's specifications for cleaning, conversion coating, and painting.
1. Color: As selected by Architect from manufacturer's full range.

F. High-Performance Organic Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

1. Fluoropolymer Two-Coat System: Manufacturer's standard two-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight.
2. Fluoropolymer Three-Coat System: Manufacturer's standard three-coat, thermocured system consisting of specially formulated inhibitive primer, fluoropolymer color coat, and clear fluoropolymer topcoat, with both color coat and clear topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight.
   a. Color and Gloss: As selected by Architect from manufacturer's full range.

2.10 GALVANIZED STEEL SHEET FINISHES

A. Surface Preparation: Clean surfaces with nonpetroleum solvent so surfaces are free of oil and other contaminants. After cleaning, apply a conversion coating suited to the organic coating to be applied over it. Clean welds, mechanical connections, and abraded areas, and apply galvanizing repair paint specified below to comply with ASTM A 780.

1. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.

2. Shop Primer: Exterior galvanized metal primer per Division 9 Section "Painting."

B. High-Performance Organic Finish: Cleaned and primed with inhibitive primer and organic coating as specified below. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
1. Fluoropolymer Three-Coat System: Manufacturer's standard three-coat, thermocured system consisting of specially formulated inhibitive primer, fluoropolymer color coat, and clear fluoropolymer topcoat, with both color coat and clear topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 621 for coil-coated sheets.
   a. Color and Gloss: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Comply with manufacturer's written instructions. Coordinate installation of roof accessories with installation of roof deck, roof insulation, flashing, roofing membranes, penetrations, equipment, and other construction involving roof accessories to ensure that each element of the Work performs properly and that combined elements are waterproof and weathertight. Anchor roof accessories securely to supporting structural substrates so they are capable of withstanding lateral and thermal stresses, and inward and outward loading pressures.

B. Install roof accessory items according to construction details of NRCA's "Roofing and Waterproofing Manual," unless otherwise indicated,

C. Separation: Separate metal from incompatible metal or corrosive substrates, including wood, by coating concealed surfaces, at locations of contact, with bituminous coating or providing other permanent separation.

D. Flange Seals: Unless otherwise indicated, set flanges of accessory units in a thick bed of roofing cement to form a seal.

E. Cap Flashing: Where required as component of accessory, install cap flashing to provide waterproof overlap with roofing or roof flashing (as counterflashing). Seal overlap with thick bead of mastic sealant.

F. Operational Units: Test-operate units with operable components. Clean and lubricate joints and hardware. Adjust for proper operation.

G. Heat-and-Smoke Vents: Locate, install, and test according to NFPA 204M.

H. Ridge Vents: Install according to manufacturer's written instructions.

3.2 CLEANING AND PROTECTION

A. Clean exposed surfaces according to manufacturer's written instructions. Touch up damaged metal coatings.

END OF SECTION 07720

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 this Section.

1.2 **SUMMARY**

A. This Section includes the following products manufactured in accordance with SDI Recommended Standards:
   1. Doors: Seamless, hollow or composite construction standard steel doors for interior and exterior locations.
   2. Frames: Pressed steel frames for doors, transoms, sidelights, mullions, interior glazed panels, and other interior and exterior openings of following type:
      a. Welded unit type
   3. Assemblies: Provide standard steel door and frame assemblies as required for the following:
      a. Labeled and fire rated.
   4. Provide factory primed doors and frames to be field painted.
   5. Refer to drawings for specialty doors at vaults, detention, etc.

B. Painting and special coating of primed doors and frames is specified in Division 9.

C. Wood doors are specified in another Division 8 Section.

D. Door hardware is specified in another Division 8 Section.

E. Glass and Glazing ARE TO BE TEMPERED IN ALL DOORS.

F. Building in of anchors and grouting of frames in masonry construction is specified in Division 4.

1.3 **SUBMITTALS**

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Product data for each type of door and frame specified, including details of construction, materials, dimensions, hardware preparation, core, label compliance, sound ratings, profiles, and finishes.

C. Shop drawings showing fabrication and installation of standard steel doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of door and frame hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.
   1. Provide schedule of doors and frames using same reference numbers for details and openings as those on contract drawings.
   2. Indicate coordinate of glazing frames and stops with glass and glazing requirements.

D. Label Construction Certification: For door assemblies required to be fire-rated and exceeding limitations of labeled assemblies, submit manufacturer's certification that each door and frame assembly has been constructed to conform to design, materials and construction equivalent to requirements for labeled construction.

1.4 **QUALITY ASSURANCE**

A. Provide doors and frames complying with Steel Door Institute "Recommended Specifications Standard Steel Doors and Frames" ANSI/SDI-100 and as herein specified.

B. Fire-Rated Door Assemblies: Units that comply with NFPA 80, are identical to door and frame assemblies whose fire resistance characteristics have been determined per ASTM E 152 and which are labeled and listed by UL, Factory Mutual, Warnock Hersey, or other testing and inspecting organization acceptable to authorities having jurisdiction.

1.5 **DELIVERY, STORAGE, AND HANDLING**

A. Deliver doors and frames cardboard-wrapped or crated to provide protection during transit and job storage.

B. Inspect doors and frames upon delivery for damage. Minor damages may be repaired provided refinished items are equal in all respects to new work and acceptable to Architect; otherwise, remove and replace damaged items as directed.

C. Store doors and frames at building site under cover. Place units on minimum 4-inches high wood blocking. Avoid use of non-vented plastic or canvas shelters which could create humidity chamber. If cardboard wrapper on door becomes wet, remove carton immediately. Provide 1/4-inches space between stacked doors to promote air circulation.

PART 2 - PRODUCTS

2.1 **ACCEPTABLE MANUFACTURERS**

A. Manufacturer: Subject to compliance with requirements, provide standard steel doors and frames by one of the following:

1. Standard Steel Doors and Frames:

   a. Amweld Building Products, Inc.
   b. Ceco Corp
   c. Copco Door Co.
   d. Curries Company
   e. Deansteel Manufacturing Co.
   f. Fenestra Corp
   g. Kewanee Corp
   h. Mesker Door Co.
   i. Pioneer Industries
   j. Premier Products, Inc. (Formerly Dittco)
   k. Republic Builders Products
   l. Steelcraft Manufacturing Co.
   m. Willco Hollow Metal

2.2 **MATERIALS**

A. Hot-Rolled Steel Sheets and Strips: Commercial quality carbon steel, pickled and oiled, complying with ASTM A 569 and ASTM A 568.

B. Cold-Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A 366 and ASTM

A 568.

C. Galvanized Steel Sheets: Zinc-coated carbon steel sheets of commercial quality, complying with ASTM A 526, or drawing quality, ASTM A 642, hot dipped galvanized in accordance with ASTM A 525, with A60 or G60 coating designation, mill phosphatized.

D. Supports and Anchors: Fabricate of not less than 18-gage sheet steel; galvanized where used in galvanized frames.

E. Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where items are to be built into exterior walls, hot-dip galvanize in compliance with ASTM A 153, Class C or D as applicable.

F. Shop Applied Paint: Apply after fabrication.

1. Primer: Rust-inhibitive enamel or paint, either air-drying or baking, suitable as a base for specified finish paints complying with ANSI A224.1, "Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames."

2.3 **DOORS**

A. Provide metal doors of types and styles or grades and models indicated on drawings or schedules.

B. Provide metal doors of SDI grades and models specified below or as indicated on drawings or schedules:

1. Interior Doors: ANSI/SDI-100, Grade II, heavy-duty, Model 3 or 4, minimum 18-gage cold-rolled sheet steel faces.

2. Exterior Doors: ANSI/SDI-100, Grade III, extra heavy-duty, Model 4, minimum 16-gage galvanized steel faces.

C. Door Louvers: Provide sightproof stationary louvers for interior doors where indicated, constructed of inverted V-shaped blades formed of 24-gage cold-rolled steel set into minimum 20-gage steel frame.

2.4 **FRAMES**

A. Provide metal frames for doors, transoms, sidelights, borrowed lights, and other openings, of types and styles as shown on drawings and schedules. Conceal fastenings, unless otherwise indicated. Fabricate frames of minimum 16-gage cold-rolled steel.

1. Fabricate frames with mitered, coped, or welded corners.

2. Form exterior frames from 14-gage galvanized steel.

B. Door Silencers: Except on weatherstripped frames, drill stops to receive 3 silencers on strike jambs of singe-door frames and 2 silencers on heads of double-door frames.

2.5 **FABRICATION**

A. Fabricate steel door and frame units to be rigid, neat in appearance and free from defects, warp or buckle. Wherever practicable, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory-assembled before shipment, to assure proper assembly at project site. Comply with ANSI/SDI-100 requirements.

1. Internal Construction: Manufacturer's standard honeycomb, polyurethane, polystyrene, unitized steel grid, vertical steel stiffeners, or rigid mineral fiber core with internal sound deadener on inside of face sheets where appropriate in accordance with SDI standards.

2. Clearances: Not more than 1/8 inch at jambs and heads except between non-fire-rated pairs of doors not more than 1/4 inch. Not more than 3/4 inch at bottom.

B. Fabricate exposed faces of doors and panels, including stiles and rails of nonflush units, from only cold-rolled steel.

C. Tolerances: Comply with SDI 117 "Manufacturing Tolerances Standard Steel Doors and Frames."

D. Fabricate frames, concealed stiffeners, reinforcement, edge channels, louvers and moldings from either cold-rolled or hot-rolled steel.

E. Fabricate exterior doors, panels, and frames from galvanized sheet steel in accordance with SDI-112. Close top and bottom edges of exterior doors as integral part of door construction or by addition of minimum 16-gage inverted steel channels.

F. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts.

G. Thermal-Rated (Insulating) Assemblies: At exterior locations and elsewhere as shown or scheduled, provide doors fabricated as thermal insulating door and frame assemblies and tested in accordance with ASTM C 236 OR ASTM C 976 on fully operable door assemblies.

1. Unless otherwise indicated, provide thermal-rated assemblies with U factor of 0.41 Btu/(hr x sq ft x deg F.) or better.

H. Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware in accordance with final Door Hardware Schedule and templates provided by hardware supplier. Comply with applicable requirements of ANSI A115 Series Specifications for door and frame preparation for hardware.

I. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at project site.

J. Locate hardware as indicated on final shop drawings or, if not indicated, in accordance with "Recommended Locations for Builder's Hardware on Standard Steel Doors and Frames," published by Door and Hardware Institute.

K. Shop Painting: Clean, treat, and paint exposed surfaces of steel door and frame units, including galvanized surfaces.

1. Clean steel surfaces of mill scale, rust, oil, grease, dirt, and other foreign materials before application of paint.
2. Apply shop coat of prime paint of even consistency to provide a uniformly finished surface ready to receive finish paint.

L. Glazing Stops: Minimum 20 gage steel.

1. Provide non-removable stops on outside of exterior doors and on secure side of interior doors for glass, louvers, and other panels in doors.
2. Provide screw applied removable glazing beads on inside of glass, louvers, and other panels in doors.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install standard steel doors, frames, and accessories in accordance with final shop drawings, manufacturer's data, and as herein specified.

B. Placing Frames: Comply with provisions of SDI-105 "Recommended Erection Instructions For Steel Frames," unless otherwise indicated.

1. Except for frames located at existing concrete, masonry or drywall installations, place frames prior to construction of enclosing walls and ceilings. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.

2. In masonry construction, locate 3 wall anchors per jamb adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Acceptable anchors include masonry wire anchors and masonry Tee anchors.
3. At existing concrete or masonry construction, provide 3 completed opening anchors per jamb adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb, set frames and secure to adjacent construction with bolts and masonry anchorage devices.
4. Install fire-rated frames in accordance with NFPA Standard No. 80.
5. In metal stud partitions, install at least 3 wall anchors per jamb at hinge and strike levels. In closed steel stud partitions, attach wall anchors to studs with screws.
6. In in-place drywall partitions install knock down slip-on drywall frames.

C. Door Installation: Fit hollow metal doors accurately in frames, within clearances specified in ANSI/SDI-100.
1. Install fire-rated doors with clearances as specified in NFPA Standard No. 30.

3.2 **ADJUST AND CLEAN**

A. Prime Coat Touch-up: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.

B. Final Adjustments: Check and readjust operating hardware items, leaving steel doors and frames undamaged and in complete and proper operating condition.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. **Exterior** aluminum-framed storefronts to match existing storefront color and configuration.

a. Glazing is retained **mechanically with gaskets on four sides**.

B. Related Sections include the following:

1. Division 7 Section "Building Insulation" for insulation materials field installed with aluminum-framed systems.
2. Division 7 Section "Joint Sealants" for installation of joint sealants installed with aluminum-framed systems and for sealants to the extent not specified in this Section.
3. Division 8 Section "Door Hardware" for hardware to the extent not specified in this Section.
4. Division 8 Section "Glazing" for glazing requirements to the extent not specified in this Section.

1.3 PERFORMANCE REQUIREMENTS

A. General: Provide aluminum-framed systems, including anchorage, capable of withstanding, without failure, the effects of the following:

1. Structural loads.
2. Thermal movements.
3. Movements of supporting structure indicated on Drawings including, but not limited to, story drift and deflection from uniformly distributed and concentrated live loads.

4. Dimensional tolerances of building frame and other adjacent construction.
5. Failure includes the following:

   a. Deflection exceeding specified limits.
   b. Thermal stresses transferred to building structure.
   c. Framing members transferring stresses, including those caused by thermal and structural movements, to glazing.
   d. Glazing-to-glazing contact.
   e. Noise or vibration created by wind and thermal and structural movements.
   f. Loosening or weakening of fasteners, attachments, and other components.
   g. Sealant failure.
   h. Failure of operating units to function properly.

B. Structural Sealant: Capable of withstanding tensile and shear stresses imposed by aluminum-framed systems without failing adhesively or cohesively. Provide sealant that fails cohesively before sealant releases from substrate when tested for adhesive compatibility with each substrate and joint condition required.

1. Adhesive failure occurs when sealant pulls away from substrate cleanly, leaving no sealant material behind.
2. Cohesive failure occurs when sealant breaks or tears within itself but does not separate from each substrate because sealant-to-substrate bond strength exceeds sealant's internal strength.

C. Structural-Sealant Joints: Designed to produce tensile or shear stress in structural-sealant joints of less than 20 psi (138 kPa).

D. Structural Loads:

1. Wind Loads: **[As required by current Code]** .
2. Seismic Loads: **[As required by current Code]** .

E. Deflection of Framing Members:

1. Deflection Normal to Wall Plane: Limited to **[1/175 of clear span for spans up to 13 feet 6 inches (4.1 m) and to 1/240 of clear span plus 1/4 inch (6.35 mm) for spans greater**

than 13 feet 6 inches (4.1 m)] or an amount that restricts edge deflection of individual glazing lites to 3/4 inch (19 mm), whichever is less.

2. Deflection Parallel to Glazing Plane: Limited to [1/360 of clear span or 1/8 inch (3.2 mm), whichever is smaller] [amount not exceeding that which reduces glazing bite to less than 75 percent of design dimension and that which reduces edge clearance between framing members and glazing or other fixed components directly below to less than 1/8 inch (3.2 mm) and clearance between members and operable units directly below to less than 1/16 inch (1.5 mm)].

F. Structural-Test Performance: Provide aluminum-framed systems tested according to ASTM E 330 as follows:

1. When tested at positive and negative wind-load design pressures, systems do not evidence deflection exceeding specified limits.
2. When tested at [150] percent of positive and negative wind-load design pressures, systems, including anchorage, do not evidence material failures, structural distress, and permanent deformation of main framing members exceeding [0.2] percent of span.
3. Test Durations: As required by design wind velocity but not less than 10 seconds.

G. Story Drift: Provide aluminum-framed systems that accommodate design displacement of adjacent stories indicated.

1. Design Displacement.
2. Test Performance: Meeting criteria for passing based on building occupancy type when tested according to AAMA 501.4 at design displacement[and 1.5 times design displacement].

H. Thermal Movements: Provide aluminum-framed systems that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2. Test Performance: No buckling; stress on glass; sealant failure; excess stress on framing, anchors, and fasteners; or reduction of performance when tested according to AAMA 501.5.

   a. Test High Exterior Ambient-Air Temperature: That which produces an exterior metal-surface temperature of [180 deg F (82 deg C)] .
   b. Test Low Exterior Ambient-Air Temperature: [0 deg F (minus 18 deg C)] .
   c. Test Interior Ambient-Air Temperature: [75 deg F (24 deg C)] ASTM E 283 requires using a static-air-pressure difference of 1.57 lbf/sq. ft. (75 Pa), unless otherwise indicated, which is equivalent to a 25-mph (40-km/h) wind. Static-air-pressure difference of 6.24 lbf/sq. ft. (300 Pa) is equivalent to a 50-mph (80-km/h) wind.

I. Air Infiltration: Provide aluminum-framed systems with maximum air leakage through fixed glazing and framing areas of [0.06 cfm/sq. ft. (0.03 L/s per sq. m)] of fixed wall area when tested according to ASTM E 283 at a minimum static-air-pressure difference of [1.57 lbf/sq. ft. (75 Pa)] [6.24 lbf/sq. ft. (300 Pa)] .

J. Water Penetration Under Static Pressure: Provide aluminum-framed systems that do not evidence water penetration through fixed glazing and framing areas when tested according to ASTM E 331 at a minimum static-air-pressure difference of [**20 percent of positive wind-load design pressure, but not less than** 6.24 lbf/sq. ft. (300 Pa)] .

K. Water Penetration Under Dynamic Pressure: Provide aluminum-framed systems that do not evidence water leakage through fixed glazing and framing areas when tested according to AAMA 501.1 under dynamic pressure equal to [**20 percent of positive wind-load design pressure, but not less than** 6.24 lbf/sq. ft. (300 Pa)] .

1. Maximum Water Leakage: [**According to AAMA 501.1**] [**No uncontrolled water penetrating systems or appearing on systems' normally exposed interior surfaces from sources other than condensation**]. Water controlled by flashing and gutters that is drained to exterior and cannot damage adjacent materials or finishes is not considered water leakage.

L. Condensation Resistance: Provide aluminum-framed systems with fixed glazing and framing areas having condensation-resistance factor (CRF) of not less than [53] when tested according to AAMA 1503.

M. Average Thermal Conductance: Provide aluminum-framed systems with fixed glazing and framing areas having average U-factor of not more than [0.69 Btu/sq. ft. x h x deg F (3.92 W/sq. m x K)] when tested according to AAMA 1503.

N. Sound Transmission: Provide aluminum-framed systems with fixed glazing and framing areas having minimum STC [32] according to ASTM E 413 and an OITC [26] according to ASTM E 1332, as determined by testing according to ASTM E 90.

1.4 SUBMITTALS

A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of product indicated.

B. Shop Drawings: For aluminum-framed systems. Include plans, elevations, sections, details, and attachments to other work.

1. Include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
2. Include details of provisions for system expansion and contraction and for draining moisture occurring within the system to the exterior.
3. For entrances, include hardware schedule and indicate operating hardware types, functions, quantities, and locations.

C. Samples for Initial Selection: For units with factory-applied color finishes.

D. Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.

E. Fabrication Sample: Of each vertical-to-horizontal intersection of systems, made from 12-inch (300-mm) lengths of full-size components and showing details of the following:

1. Joinery.

2. Anchorage.
3. Expansion provisions.
4. Glazing.
5. Flashing and drainage.

F. Welding certificates.

G. Qualification Data: For Installer [and testing agency].

H. Preconstruction Sealant Test Reports: For structural-sealant-glazed systems, compatibility and adhesion test reports from sealant manufacturer indicating that materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with sealants. Include sealant manufacturer's interpretation of test results for sealant performance and recommendations for primers and substrate preparation needed to obtain adhesion.

I. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for aluminum-framed systems.

J. Structural-Sealant-Glazing Quality-Control Program: Developed specifically for Project.

K. Structural-Sealant-Glazing Quality-Control Program Reports: Documenting quality-control procedures and verifying results for aluminum-framed systems.

L. Field quality-control test and inspection reports.

M. Maintenance Data: For aluminum-framed systems to include in maintenance manuals.

N. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Capable of assuming engineering responsibility and performing work of this Section and who is acceptable to manufacturer.

1. Engineering Responsibility: Preparation of data for aluminum-framed systems including Shop Drawings based on testing and engineering analysis of manufacturer's standard units

in assemblies similar to those indicated for this Project and submission of reports of tests performed on manufacturer's standard assemblies.

a. Include structural-sealant-glazing quality-control program development and reporting complying with ASTM C 1401 recommendations including, but not limited to, system material qualification procedures, preconstruction sealant-testing program, and procedures and intervals for system fabrication and installation reviews and checks.

B. Testing Agency Qualifications: An independent agency qualified according to ASTM E 699 for testing indicated.

C. Product Options: Information on Drawings and in Specifications establishes requirements for systems' aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance.

1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

D. Preconstruction Sealant Testing: For structural-sealant-glazed systems, perform sealant manufacturer's standard tests for compatibility and adhesion of sealants with each material that will come in contact with sealants and each condition required by aluminum-framed systems.

1. Test a minimum of five samples of each metal, glazing, and other material.
2. Prepare samples using techniques and primers required for installed systems.
3. For materials that fail tests, determine corrective measures required to prepare each material to ensure compatibility with and adhesion of sealants, including, but not limited to, specially formulated primers. After performing these corrective measures on the minimum number of samples required for each material, retest materials.

E. Accessible Entrances: Comply with the Georgia Accessibility Code, [the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility

Guidelines for Buildings and Facilities (ADAAG)."] [ICC/ANSI A117.1.] [FED-STD-795, "Uniform Federal Accessibility Standards."] Delete first paragraph below if no welding. Retain "Welding certificates" Paragraph in "Submittals" Article if retaining below.

F. Welding: Qualify procedures and personnel according to AWS D1.2, "Structural Welding Code--Aluminum."

G. Structural-Sealant Glazing: Comply with recommendations in ASTM C 1401, "Guide for Structural Sealant Glazing."

H. Structural-Sealant Joints: Design reviewed and approved by structural-sealant manufacturer.

I. Mockups: Build mockups to demonstrate aesthetic effects and set quality standards for fabrication and installation.

1. Build mockup of typical wall area as shown on Drawings.
2. Field testing shall be performed on mockups according to requirements in Part 3 "Field Quality Control" Article.
3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of structural supports for aluminum-framed systems by field measurements before fabrication and indicate measurements on Shop Drawings.

1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating aluminum-framed systems without field measurements. Coordinate construction to ensure that actual dimensions correspond to established dimensions.

1.7 WARRANTY

A. Special Assembly Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of aluminum-framed systems that do not comply with requirements or that deteriorate as defined in this Section within specified warranty period.

1. Failures include, but are not limited to, the following:

    a. Structural failures including, but not limited to, excessive deflection.
    b. Noise or vibration caused by thermal movements.
    c. Deterioration of metals[, **metal finishes,**] and other materials beyond normal weathering.
    d. Adhesive or cohesive sealant failures.
    e. Water leakage through fixed glazing and framing areas.
    f. Failure of operating components to function properly.

2. Warranty Period: **10** years from date of Substantial Completion.

B. Special Finish Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components on which finishes fail within specified warranty period. Warranty does not include normal weathering.

1. Warranty Period: [**20**] years from date of Substantial Completion.

PART 2 - PRODUCTS

1.8 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

C. Basis-of-Design Product: **The design for aluminum-framed systems Tri-fab 451T Storefront. Color to MATCH EXISTING.** Subject to compliance with requirements, provide the named product or a comparable product by one of the following:

1. Arch Aluminum & Glass Co., Inc.
2. CMI Architectural Products, Inc.
3. Commercial Architectural Products, Inc.
4. EFCO Corporation.

5. Kawneer.
6. Pittco Architectural Metals, Inc.
7. Tubelite Inc.
8. United States Aluminum.
9. Vistawall Architectural Products.
10. YKK AP America Inc.

1.9 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and .

1. Sheet and Plate: ASTM B 209 (ASTM B 209M).
2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221 (ASTM B 221M).
3. Extruded Structural Pipe and Tubes: ASTM B 429.
4. Structural Profiles: ASTM B 308/B 308M.
5. Welding Rods and Bare Electrodes: AWS A5.10/A5.10M.

B. Steel Reinforcement: With manufacturer's standard corrosion-resistant primer complying with SSPC-PS Guide No. 12.00 applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM and prepare surfaces according to applicable SSPC standard.

1. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
2. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.
3. Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M.

1.10 FRAMING SYSTEMS

A. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.

1. Construction: **[Framing members are composite assemblies of two separate extruded-aluminum components permanently bonded by an elastomeric material of low thermal conductance]**

B. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

C. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.

1. Where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration, use self-locking devices.
2. Reinforce members as required to receive fastener threads.
3. Use exposed fasteners with countersunk Phillips screw heads, **finished to match framing system.**

D. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts complying with ASTM A 123/A 123M or ASTM A 153/A 153M requirements.

E. Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials. Form exposed flashing from sheet aluminum finished to match framing and of sufficient thickness to maintain a flat appearance without visible deflection.

F. Framing System Gaskets and Sealants: Manufacturer's standard recommended by manufacturer for joint type.

1.11 GLAZING SYSTEMS

A. Glazing: **1" INSULATED UNITS WITH ¼" TEMPERED PPG SOLAR-COOLED OUTBOARD LITE, LO E COATING. INBOARD LITE TO BE ¼" CLEAR LAMINATED.**

B. Glazing Gaskets: Manufacturer's standard compression types, replaceable, molded or extruded, that maintain uniform pressure and watertight seal.

C. Spacers and Setting Blocks: Manufacturer's standard elastomeric types.

D. Bond-Breaker Tape: Manufacturer's standard TFE-fluorocarbon or polyethylene material to which sealants will not develop adhesion.

E. Glazing Sealants: For structural-sealant-glazed systems, as recommended by manufacturer for joint type and as follows:

1. Structural Sealant: ASTM C 1184, neutral-curing silicone formulation compatible with system components with which it comes in contact, specifically formulated and tested for use as structural sealant, and approved by structural-sealant manufacturer for use in aluminum-framed systems indicated.

   a. Color: **Black.**

2. Weather-seal Sealant: ASTM C 920 for Type S, Grade NS, Class 25, Uses NT, G, A, and O; neutral-curing silicone formulation compatible with structural sealant and other system components with which it comes in contact; and recommended by structural- and weather-seal-sealant and aluminum-framed system manufacturers for this use.

   a. Color: Matching structural sealant.

1.12 DOORS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

C. Basis-of-Design Product: The design for aluminum-framed systems is based on Kawneer Entrance system 500 wide style WITH 10" Bottom Rails. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:

1. Arch Aluminum & Glass Co., Inc.
2. CMI Architectural Products, Inc.
3. Commercial Architectural Products, Inc.
4. EFCO Corporation.
5. Kawneer.
6. Pittco Architectural Metals, Inc.
7. Tubelite Inc.
8. United States Aluminum.
9. Vistawall Architectural Products.
10. YKK AP America Inc.

1.13 ACCESSORY MATERIALS

A. Insulating Materials: As specified in Division 7 Section "Building Insulation."

B. Joint Sealants: For installation at perimeter of aluminum-framed systems, as specified in Division 7 Section "Joint Sealants."

C. Bituminous Paint: Cold-applied asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos, formulated for 30-mil (0.762-mm) thickness per coat.

1.14 FABRICATION

A. Form aluminum shapes before finishing.

B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

C. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:

1. Profiles that are sharp, straight, and free of defects or deformations.
2. Accurately fitted joints with ends coped or mitered.
3. Means to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.
4. Physical and thermal isolation of glazing from framing members.
5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
6. Provisions for field replacement of glazing from **[exterior] [interior] [interior for vision glass and exterior for spandrel glazing or panels]**.
7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.

D. Mechanically Glazed Framing Members: Fabricate for flush glazing (without projecting stops).

E. Structural-Sealant-Glazed Framing Members: Include accommodations for using temporary support device (dutchman) to retain glazing in place while structural sealant cures.

F. Storefront Framing: Fabricate components for assembly using **shear-block system.**

1.15 ALUMINUM FINISHES

Aluminum Storefront and Doors to be *Medium Bronze Anodized* finish.

A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

C. Class II, Clear Anodic Finish: AA-M12C22A31 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.010 mm or thicker) complying with AAMA 611.

D. Class I, Clear Anodic Finish: AA-M12C22A41 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.

E. Class II, Color Anodic Finish: AA-M12C22A32/A34 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, integrally colored or electrolytically deposited color coating 0.010 mm or thicker) complying with AAMA 611.

F. Class I, Color Anodic Finish: AA-M12C22A42/A44 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 611.

PART 3 - EXECUTION

2.1 EXAMINATION

A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

2.2 INSTALLATION

A. General:

1. Comply with manufacturer's written instructions.
2. Do not install damaged components.
3. Fit joints to produce hairline joints free of burrs and distortion.
4. Rigidly secure non-movement joints.
5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration.
6. Seal joints watertight, unless otherwise indicated.

B. Metal Protection:

1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape or installing nonconductive spacers as recommended by manufacturer for this purpose.
2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

C. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.

D. Set continuous sill members and flashing in full sealant bed as specified in Division 7 Section "Joint Sealants" and to produce weather-tight installation.

E. Install components plumb and true in alignment with established lines and grades, without warp or rack.

F. Install glazing as specified in Division 8 Section "Glazing."

1. Structural-Sealant Glazing:

a. Prepare surfaces that will contact structural sealant according to sealant manufacturer's written instructions to ensure compatibility and adhesion. Preparation includes, but is not limited to, cleaning and priming surfaces.

b. Install weather-seal sealant according to Division 7 Section "Joint Sealants" and according to sealant manufacturer's written instructions to produce weatherproof joints. Install joint filler behind sealant as recommended by sealant manufacturer.

G. Entrances: Install to produce smooth operation and tight fit at contact points.

1. Exterior Entrances: Install to produce tight fit at weather stripping and weathertight closure.
2. Field-Installed Hardware: Install surface-mounted hardware according to hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.

H. Install insulation materials as specified in Division 7 Section "Building Insulation."

I. Install perimeter joint sealants as specified in Division 7 Section "Joint Sealants" and to produce weather-tight installation.

J. Erection Tolerances: Install aluminum-framed systems to comply with the following maximum tolerances:

1. Location and Plane: Limit variation from true location and plane to 1/8 inch in 12 feet (3 mm in 3.7 m); 1/4 inch (6 mm) over total length.
2. Alignment:

a. Where surfaces abut in line, limit offset from true alignment to 1/16 inch (1.5 mm).

b. Where surfaces meet at corners, limit offset from true alignment to 1/32 inch (0.8 mm).

3. Diagonal Measurements: Limit difference between diagonal measurement to 1/8 inch (3 mm).

2.3 FIELD QUALITY CONTROL

A. Testing Agency: **Engage** a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Testing Services: Testing and inspecting of representative areas to determine compliance of installed systems with specified requirements shall take place as follows and in successive stages as indicated on Drawings. Do not proceed with installation of the next area until test results for previously completed areas show compliance with requirements.

1. Structural-Sealant Compatibility and Adhesion: Structural sealant shall be tested according to recommendations in ASTM C 1401.

   a. Destructive test method, Method A, Hand Pull Tab (Destructive) in ASTM C 1401, Appendix X2 shall be used.

      1) A minimum of **[two] [four] [six] <Insert number>** areas on each building face shall be tested.
      2) Repair installation areas damaged by testing.

2. Structural-Sealant Glazing Inspection: After installation of aluminum-framed systems is complete, structural-sealant glazing shall be inspected and evaluated according to ASTM C 1401 recommendations.
3. Air Infiltration: Areas shall be tested for air leakage of **[1.5 times the rate specified for laboratory testing under Part 1 "Performance Requirements" Article, but not more than** 0.09 cfm/sq. ft. (0.03 L/s per sq. m)**,] <Insert rate>** of fixed wall area when tested according to ASTM E 783 at a minimum static-air-pressure difference of **[**1.57 lbf/sq. ft. (75 Pa)**] [**6.24 lbf/sq. ft. (300 Pa)**] <Insert pressure>**.
4. Water Penetration: Areas shall be tested according to ASTM E 1105 at a minimum **[uniform] [and] [cyclic]** static-air-pressure difference of **[0.67 times the static-air-pressure difference specified for laboratory testing under Part 1 "Performance Requirements" Article, but not less than** 4.18 lbf/sq. ft. (200 Pa)**,] <Insert pressure>** and shall not evidence water penetration.
5. Water Spray Test: Before installation of interior finishes has begun, a minimum area of 75 feet (23 m) by 1 story of aluminum-framed systems designated by Architect shall be tested according to AAMA 501.2 and shall not evidence water penetration.

C. Repair or remove work where test results and inspections indicate that it does not comply with specified requirements.

D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

2.4 ADJUSTING

A. Entrances: Adjust operating hardware for smooth operation according to hardware manufacturers' written instructions.

END OF SECTION 08411

SECTION 08 71 10

FINISH HARDWARE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to the work of this section.

PROVIDE PANIC HARDWARE ON ALL EXTERIOR DOORS.
HARDWARE IS TO MATCH OCONEE COUNTY'S HARDWARE STANDARD - VERIFY WITH OWNER.

ALL HARDWARE TO MATCH EXISTING.

1.02 DESCRIPTION OF WORK

A. Definition: "Builders Hardware" includes items known commercially as builders hardware which are required for swing, sliding and folding doors, except special types of unique and non-matching hardware specified in the same section as the door and door frames.

B. Extent of finish hardware required is to be scheduled by hardware supplier based on the location and operation of each door. The Architect and Owner will review and verify the function of each and every door in the facility.

C. Types of finish hardware required include the following:

1. Hinges
2. Pivots
3. Lock cylinders and keys
4. Lock and latch sets
5. Bolts
6. Exit devices
7. Push/pull units
8. Closers
9. Overhead holders
10. Miscellaneous door control devices
11. Door trim units
12. Protection plates
13. Weatherstripping, door seals
14. Thresholds
15. Electronic Security Products
16. Silencers

1.03 QUALITY ASSURANCE:

A. Manufacturer: Obtain each type of hardware (latch and lock sets, hinges, closers, etc.) from only one manufacturer, although several may be indicated as offering products complying with requirements.

B. Supplier: A recognized architectural finish hardware supplier, with warehousing facilities, who has been furnishing hardware in the project's vicinity for a period of not less than 2 years, and who is, or who employs an experienced architectural consultant who is available, at reasonable times during the course of the work, for consultation about project's hardware requirements, to Owner, Architect and Contractor.

C. Fire-Rated Openings: Provide hardware for fire-rated openings in compliance with NFPA Standard No. 80 and local building code requirements. Provide only hardware which has been tested and listed by UL or FM for types and sizes of doors required and complies with requirements of door and door frame labels.

1. Where emergency exit devices are required on fire-rated doors (with supplementary marking on doors' UL or FM labels indicating "Fire Door to be Equipped with Fire Exit Hardware") provide UL or FM label on exit devices indicating "Fire Exit Hardware."

1.04 SUBMITTALS

A. Product Data: Submit manufacturers technical product data for each item of hardware in accordance with Division 1 section "Submittals". Include whatever information may be necessary to show compliance with requirements, and include instructions for installation and for maintenance of operating parts and finish.

B. **Hardware Schedule: Submit a hardware schedule in manner indicated below PREPARED BY A CERTIFIED, LICENSES HARDWARE SPECIFIER. Coordinate hardware with fire ratings, applications, doors, frames, and related work to ensure proper size, thickness, hand, function and finish of hardware.**

C. Final Hardware Schedule Content: Based on finish hardware indicated, organize hardware schedule into "hardware sets" indicating complete designations of every item required for each door or opening. Include the following information:

1. Type, style, function, size and finish of each hardware item.
2. Name and manufacturer of each item.
3. Fastenings and other pertinent information.
4. Location of hardware set crossed-referenced to indications on Drawings both on floor plans and in door and frame schedule.
5. Explanation of all abbreviations, symbols, codes, etc. contained in schedule.
6. Mounting locations for hardware.
7. Door and frame sizes and materials.

D. Submittal Sequence: Submit schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work (e.g., hollow metal frames) which is critical in

the project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by finish hardware, and other information essential to the coordinated review of hardware schedule.

E. Samples: Prior to submittal of the final hardware schedule and prior to final ordering of finish hardware, submit one sample of each type of exposed hardware unit, finished as required, and tagged with full description for coordination with schedule.

1. Samples will be returned to the supplier. Units which are acceptable and remain undamaged through submittal, review and field comparison procedures may, after final check of operation, be used in the work, within limitations of keying coordination requirements.

F. Templates: Finish hardware templates to each fabricator of doors, frames and other work to be factory-prepared for the installation of hardware. Upon request, check shop drawings of such other work, to confirm that adequate provisions are made for proper location and installation of hardware.

1.05 PRODUCT HANDLING:

A. Tag each item or package separately, with identification related to final hardware schedule, and include basic installation instructions with each item or package.

B. Packaging of hardware, is responsibility of supplier. As material is received by hardware supplier from various manufacturers, sort and repackage in containers clearly marked with appropriate hardware set number to match set numbers of approved hardware schedule. Two or more identical sets may be packed in same container.

C. Inventory hardware jointly with representatives of the hardware supplier and the hardware installer until each is satisfied that the count is correct.

D. Deliver individually packaged hardware items at the proper times to the proper locations (shop or project site) for installation.

E. Provide secure lock-up for hardware delivered to the project, but not yet installed. Control handling and installation of hardware items which are not immediately replaceable, so that completion of the work will not be delayed by hardware losses, both before and after installation.

PART 2 - PRODUCTS

2.01 SCHEDULED HARDWARE

HARDWARE IS TO MATCH BURKE COUNTY'S HARDWARE STANDARD - VERIFY WITH OWNER.

A. Requirements for design, grade, function, finish, size and other distinctive qualities of each type of finish hardware is to be determined by the door use and location in conjunction with the Hardware Allowance contained in this Project Manual.

B. Manufacturer's product designations: One or more manufacturers are listed for each hardware type

required. An asterisk (*) after a manufacturer's name indicates whose product designation is used in the Hardware Schedule for purposes of establishing minimum requirements. Provide either the product designated, or, where more than one manufacturer is listed, the comparable product of one of the other manufacturers which comply with requirements including those specified elsewhere in this section.

2.02 MATERIALS AND FABRICATION:

A. Hand of door: Drawings show direction of slide, swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.

B. Manufacturer's Name Plate: Do not use manufacturer's products which have manufacturer's name or trade name displayed in a visible location (omit removable nameplates), except in conjunction with required UL labels and as otherwise acceptable to Architect.

1. Manufacturer's identification will be permitted on rim of lock cylinders only.

C. Base Metals: Produce hardware units of basic metal and forming method indicated, using manufacturer's standard metal alloy, composition, temper and hardness, but in no case of lesser (commercially recognized) quality than specified for the application hardware units by applicable ASNI A156 series standard for each type hardware item and with ASNI A156.18 for finish designations indicated. Do not furnish "optional" materials or forming methods for those indicated, except as otherwise specified.

D. Fasteners: Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation. Do not provide hardware which has been prepared for self-tapping sheet metal screws, except as specifically indicated.

E. Furnish screws for installation, with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of such other work as closely as possible, including "prepared for paint" in surfaces to receive painted finish.

F. Provide concealed fasteners for hardware units which are exposed when door is closed, except to extent no standard units of the type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on the opposite face is exposed in other work, except where it is not feasible to adequately reinforce the work. In such cases, provide sleeves for each thru-bolt or use sex screw fasteners.

G. Tools and Maintenance Instructions for Maintenance: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of finish hardware.

2.03 HINGES, BUTTS, AND PIVOTS:

A. Templates: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and

frames, provide only template-produced units.

B. Screws: Furnish Phillips flat-head or machine screws for installation of units, except furnish Phillips flat-head or wood screws for installation of units into wood. Finish screw heads to match surface of hinges or pivots.

C. Hinge Pins: Except as otherwise indicated, provide continuous hinges per door specification.

D. Tips: Flat button and matching plug, finished to match leaves, except where hospital tip (HT) indicated.

E. Number of hinges: Provide number of hinges indicated but not less than 3 hinges for door leaf for doors 90" or less in height and one additional hinge for each 30" of additional height.

F. Size of hinges: Unless otherwise scheduled, size hinges in accordance with the published recommendations of the specified manufacturer.

2.04 LOCK CYLINDERS AND KEYING:

A. General: Supplier will meet with Owner to finalize keying requirements and obtain final instructions in writing.

B. Review the keying system with the Owner and provide the type required (master, grandmaster or great-grandmaster), integrated with Owner's existing system.

C. Equip locks with high security cylinders which comply with performance requirements for Grade 1 cylinders as listed in ANSI A156.5 and which have been tested for pick and drill resistance requirements of UL 437 and are UL listed.

D. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

E. Metals: Construct lock cylinder parts from brass/bronze, stainless steel or nickel silver.

F. Comply with Owner's instructions for masterkeying and, except as otherwise indicated, provide individual change key for each lock which is not designated to be keyed alike with a group of related locks.

G. Key Material: Provide keys of nickel silver only.

H. Key Quantity: Furnish 3 change keys for each lock; 5 master keys for each master system; and 5 grandmaster keys for each grandmaster system.

I. Deliver keys to Owner's representative.

2.05 LOCKS, LATCHES, AND BOLTS:

A. Strikes: Provide manufacturer's standard wrought box strike for each latch or lock bolt.

1. Provide dust-proof strikes for foot bolts, except where special threshold construction provides non-recessed strike for bolt.

2. Provide roller type strikes where recommended by manufacturer of the latch and lock units.

B. Lock Throw: Provide 3/4" minimum throw of latch and 1" throw of deadbolt. Comply with UL

requirements for throw of bolts and latch bolts on rated fire openings.

C. Flush Bolt Heads: Minimum of 1/2" diameter rods of brass, bronze, or stainless steel, with minimum 12" long rod for doors up to 7'0" in height. Provide longer rods as necessary for doors exceeding 7'0" in height.

D. Exit Device Dogging: Except on fire-rated doors, wherever closers are provided on doors equipped with exit devices, equip the units with keyed dogging device to hold the push bar down and the latch bolt in the open position.

E. Rabbeted Doors: Where rabbeted door stiles are indicted, provide special rabbeted front on lock and latch units and bolts.

2.06 PUSH/PULL UNITS:

A. Concealed Fasteners: Provide manufacturer's special concealed fastener system for installation; through-bolted for matched pairs, but not for single units.

2.07 CLOSERS AND DOOR CONTROL DEVICES:

A. Size of Units: Except as otherwise specifically indicated, comply with the manufacturer's recommendations for size of door control unit, depending upon size of door, exposure to weather and anticipated frequency of use.

B. Access-Free Manual Closers: Where manual closers are indicated for doors required to be accessible to the physically handicapped, provide adjustable units complying with ANSI A 117.1 provisions for door opening force and delayed action closing.

C. Combination Door Closers and Holders: Provide units designed to hold door in open position under normal usage and to release and automatically close door under fire conditions. Incorporate an integral electromagnetic holder mechanism designed for use with UL listed fire detectors, provided with normally closed switching contacts.

1. Provide integral smoke detector device in combination door closers and holders complying with UL 228.

2.08 DOOR TRIM UNITS:

A. Fasteners: Provide manufacturer's standard exposed fasteners for door trim units (kick plates, edge trim, viewers, knockers, mail drops and similar units); either machine screws of self-tapping screw.

B. Fabricate edge trim of stainless steel, not more than 1/2" nor less than 1/16" smaller in length than door dimension.

C. Fabricate protection plates (armor, kick or mop) not more than 1-1//2" less than door width on stop side and not more than 1/2" less than door width on pull side, plate heights shall be 36", 8", and 4"

respectively. Armor plates on fire doors shall conform to NFPA 80.

1. Metal Plates: Stainless steel, .050" (U.S. 18 ga).

2.09 WEATHERSTRIPPING:

A. General: Except as otherwise indicated, provide continuous weatherstripping at each edge of every exterior door leaf. Provide type, sizes and profiles shown or scheduled. Provide non-corrosive fasteners as recommended by manufacturer for application indicated.

2.10 THRESHOLDS:

A. General: Except as otherwise indicated provide standard metal threshold unit of type, size, and profile as shown or scheduled.

2.11 SILENCERS:

A. Provide silencers except at doors equipped with weatherstrip, soundseals, lighseals, or other gasketing. Provide 3 silencers per single door and 4 silencers per pair of doors.

2.12 HARDWARE FINISHES:

A. Provide matching finishes for hardware units at each door or opening, to the greatest extent possible, and except as otherwise indicated. Reduce differences in color and textures as much as commercially possible where the base metal or metal forming process is different for individual units of hardware exposed at the same door or opening. In general, match items to the manufacturer's standard finish for the latch and lock set (or push-pull units if no latch-lock sets) for color and texture.

B. Provide finishes which match those established by BHMA or, if none established, match the Architect's sample.

C. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness and other qualities complying with manufacturer's standards, but in no case less than specified for the applicable units of hardware by referenced standards.

D. The designations used in schedules and elsewhere to indicate hardware finishes are those listed in ANSI A156.18 "Materials & Finishes Standard" by BHMA, including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute, except as specifically indicated or required to comply with governing regulations, and except as may be otherwise directed by Architect.

B. Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for Custom Steel Doors and Frames" by the Door and Hardware Institute, except as specifically indicated or required to comply with governing regulations and except as otherwise directed by Architect.

C. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way, coordinate removal, storage and reinstallation or application of surface protections with finishing work specified in the Division 9 sections. Do not install surface-mounted items until finishes have been completed on the substrate.

D. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

E. Drill and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

F. Set thresholds for exterior doors in full bed of butyl-rubber or polyisobutylene mastic sealant.

3.02 ADJUST AND CLEAN:

A. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application made.

B. Clean adjacent surfaces soiled by hardware installation.

C. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

D. Instruct Owner's Personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware.

3.03 FINISHES

All finishes to be US 26D. Hinges on metal doors shall be primed for painting, ANSI 600.
Surface mounted door closers shall be painted to match adjacent hardware.

END OF SECTION

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 this section.

1.2 SUMMARY

A. Extent of each type of gypsum drywall construction required is indicated on Drawings.

B. This Section includes the following types of gypsum board construction:

1. Steel framing members to receive gypsum board
2. Gypsum board (all to be Type X 5/8" except in wet areas use green-board, 5/8") screw-attached to steel framing and furring members

1.3 DEFINITIONS

A. Gypsum Board Construction Terminology: Refer to ASTM C 11 and GA 505 for definitions of terms for gypsum board construction not otherwise defined in this section or other referenced standards.

1.4 SUBMITTALS

A. Product data from manufacturers for each type of product specified.

1.5 QUALITY ASSURANCE

A. Fire-Resistance Ratings: Where indicated, provide materials and construction which are identical to those of assemblies whose fire resistance rating has been determined per ASTM E 119 by a testing and inspecting organization acceptable to authorities having jurisdiction.

1. Provide fire-resistance-rated assemblies identical to design designations in UL "Fire Resistance Directory" or in listing of other testing and agencies acceptable to authorities having jurisdiction.

B. Single Source Responsibility: Obtain each type of gypsum board and related joint treatment materials from a single manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.

B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic and other causes. Neatly stack gypsum boards flat to prevent sagging.

C. Handle gypsum boards to prevent damage to edges, ends, and surfaces. Do not bend or otherwise damage metal corner beads and trim.

1.7 PROJECT CONDITIONS

A. Environmental Conditions, General: Establish and maintain environmental conditions for application and finishing gypsum board to comply with ASTM C 840 and with gypsum board manufacturer's recommendations.

B. Minimum Room Temperatures: For nonadhesive attachment of gypsum board to framing, maintain not less than 40 deg F (4 deg C). For adhesive attachment and finishing of gypsum board maintain not less than 50 deg F (10 deg C) for 48 hours prior to application and continuously thereafter until drying is complete.

C. Ventilate building spaces to remove water not required for drying joint treatment materials. Avoid drafts during dry, hot weather to prevent materials from drying too rapidly.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:

1. Steel Framing and Furring
   a. Bostwick Steel Framing Co.
   b. Dale Industries, Inc.e
   c. Gold Bond Building Products Div., National Gypsum Co.
   d. Incor, Inc.
   e. Marino Industries Corp.
   f. United States Gypsum Co.
2. Gypsum Boards and Related Products:
   a. Centex American Gypsum Co.
   b. Domtar Gypsum Co.
   c. Georgia-Pacific Corp.
   d. Gold Bond Building Products Div., National Gypsum Co.
   e. United States Gypsum Co.

2.2 STEEL FRAMING COMPONENTS FOR SUSPENDED AND FURRED CEILINGS

A. General: provide components which comply with ASTM C 754 for materials and sizes, unless otherwise indicated.

B. Concrete Inserts: Inserts designed for attachment to concrete forms and for embedment in concrete,

fabricated from corrosion-resistant materials, with holes or loops for attachment of hanger wires and capability to sustain, without failure, a load equal to 3 times that imposed by ceiling construction, as determined from testing per ASTM E 488, conducted by an independent testing laboratory.

C. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper.

D. Channels: Cold-rolled Steel, 0.0598 inch minimum thickness of base (uncoated) metal and 7/16 inch wide flanges, protected with rust-inhibitive paint, and as follows:

1. Carrying Channels: 2 inches deep, 590 lbs per 1000 ft., unless otherwise indicated.

E. Steel Studs for Furring Channels: ASTM C 645, with flange edges bent back 90 deg and doubled over to form 3/16 inch minimum lip return), minimum thickness of base (uncoated) metal and minimum depth as follows:

1. Thickness: 0.0329 inch, unless otherwise indicated
2. Depth: 3-5/8 inches, unless otherwise indicated

F. Steel Rigid Furring Channels: ASTM C 645, hat-shaped, depth of 7/8 inch, a minimum thickness of base (uncoated) metal as follows:

1. Thickness: 0.0179 inch, unless otherwise indicated

2.3 GYPSUM BOARD

A. General: Provide gypsum board, all “green-board” (Georgia Pacific “Tough-Rock” or equal) in maximum lengths available to minimize end-to-end joints.

1. Thickness: Provide gypsum board in thicknesses indicated to comply with ASTM C 840 for application system and support spacing indicated.

B. Gypsum Wallboard: ASTM C 36, and as follows:

1. Type: Green-board, water-resistant (Georgia Pacific “Tough-Rock” or equal, throughout the entire facility.
2. Type: Type X for fire-resistance-rated assemblies
3. Edges: Tapered
4. Thickness: 5/8 inch
5. Products: Subject to compliance with requirements, provide one of the following products where Type X gypsum wallboard is indicated:

a. "Gyprock Fireguard 'C' Gypsum Board"; Domtar Gypsum Co.
b. "Fire-Shield G"; Gold Bond Building Products, Div., National Gypsum Co.
c. "SHEETROCK Brand FIRECODE 'C' Gypsum Panels"; United States Gypsum Co.

C. Gypsum Backing Board for Multi-Layer Applications: ASTM C 442 or, where backing board is not available from manufacturer, gypsum wallboard, ASTM C 36, and as follows:

1. Type: Regular, unless otherwise indicated

2. Type: Type X for fire-resistance-rated assemblies
3. Edges: Manufacturer's standard
4. Thickness: 5/8 inch

D. Water-Resistant Gypsum Backing Board: ASTM C 630, and as follows:
1. Type: Regular, unless otherwise indicated
2. Type: Type X for fire-resistance-rated assemblies
3. Thickness: 5/8 inch

2.4 TRIM ACCESSORIES

A. Cornerbead and Edge Trim for Interior Installation: Provide corner beads, edge trim and control joints which comply with ASTM C 1047 and requirements indicated below:
1. Material: Formed metal, plastic or metal combined with paper, with metal complying with the following requirement:
a. Sheet Steel zinc-coated by hot-dip process
2. Edge trim shapes indicated below by reference to designations of Fig. 1 in ASTM C 1047:
a. "LC" Bead, unless otherwise indicated
b. "LK" Bead with square nose for use with kerfed jambs
c. "L" Bead where indicated
d. "U" Bead where indicated
3. Metal Cornerbead and Edge Trim for Exterior Ceilings: Comply with the following requirements:
1. Edge trim complying with ASTM C 1047, formed from rolled zinc, shape "LC" Bead per Fig. 1, unless otherwise indicated.

2.5 GYPSUM BOARD JOINT TREATMENT MATERIALS

A. General: Provide materials complying with ASTM C 475, ASTM C 840, and recommendations of manufacturer of both gypsum board and joint treatment materials for the application indicated.

B. Joint Tape: Paper reinforcing tape, unless otherwise indicated.

C. Setting-Type Joint Compounds: Factory-prepackaged, job-mixed, chemical-hardening powder products formulated for uses indicated.
1. Where setting-type joint compounds are indicated for use as taping and topping compounds, use formulation for each which develops greatest bond strength and crack resistance and is compatible with other joint compounds applied over it.
2. For prefilling gypsum board joints, use formulation recommended by gypsum board manufacturer for this purpose.
3 For filling joints and treating fasteners of water-resistant gypsum backing board behind base

for ceramic tile, use formulation recommended by gypsum board manufacturer for this purpose.

D. Drying-Type Joint Compounds: Factory-prepackaged vinyl-based products complying with the following requirements for formulation and intended use.

1. Ready-Mix Formulation: Factory-premixed product
2. Taping compound formulated for embedding tape and for first coat over fasteners and flanges of corner beads and edge trim.
3. Topping compound formulated for fill (second) and finish (third) coats.
4. All-purpose compound formulated for use as both taping and topping compound.

2.6 MISCELLANEOUS MATERIALS

A. General: Provide auxiliary materials for gypsum drywall construction which comply with referenced standards and the recommendations of the manufacturer of the gypsum board.

B. Spot Grout: ASTM C 475, setting-type joint compound of type recommended for spot grouting hollow metal door frames.

C. Gypsum Board Screws: ASTM C 1002

D. Asphalt Felt: ASTM D 226, Type I (No. 15)

E. Concealed Acoustical Sealant: Nondrying, nonhardening, nonskinning, nonstaining, nonbleeding, gunnable sealant complying with requirement specified in Division 7 section "Joint Sealers".

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates to which drywall construction attaches or abuts, preset hollow metal frames, cast-in-anchors, and structural framing, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of drywall construction. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Ceiling Anchorages: Coordinate installation of ceiling suspension system with installation of overhead structural systems to ensure that inserts and other structural anchorage provisions have been installed to receive ceiling anchors in a manner that will develop their full strength and at spacing required to support ceiling.

1. Furnish concrete inserts and other devices indicated, to other trades for installation well in advance of time needed for coordination with other construction.

3.3 INSTALLATION OF STEEL FRAMING, GENERAL

A. Steel Framing Installation Standard: Install steel framing to comply with ASTM C 754 and with ASTM C 840 requirements that apply to framing installation.

B. Install supplementary framing, blocking and bracing at terminations in the work and for support of fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, and similar construction to comply with details indicated and with recommendations of gypsum board manufacturer, or if none available, with "Gypsum Construction Handbook" published by United States Gypsum Co.

C. Isolate steel framing from building structure to prevent transfer of loading imposed by structural movement, at locations indicated below:

1. Where edges of suspended ceilings abut building structure horizontally at ceiling perimeters or penetration of structural elements.
2. Where partition and wall framing abuts overhead structure.

D. Do not bridge building expansion and control joints with steel framing or furring members; independently frame both sides of joints with framing or furring members.

3.4 INSTALLATION OF STEEL FRAMING FOR SUSPENDED AND FURRED CEILINGS

A. Secure hangers to structural support by connecting directly to structure where possible.

B. Do not connect or suspend steel framing from ducts, pipes or conduit.

C. Keep hangers and braces 2 inches clear of ducts, pipes and conduits.

D. Sway-brace suspended steel framing with hangers used for support.

E. Install suspended steel framing components in sizes and at spacings indicated but not less than that required by referenced steel framing installation standard.

1. Wire Hangers: 0.1620 inch diameter (8 gage), 4 ft. on center
2. Carrying Channels (Main Runners): 1-1/2 inch, 4 ft. on center
3. Rigid Furring Channels (Furring Members): 16 inches on center

F. Installation Tolerances: Install steel framing components for suspended ceiling so that cross furring members or grid suspension members are level to within 1/8 inch in 12 ft. as measured both lengthwise on each member and transversely between parallel members.

G. Wire-tie or clip furring members to main runners and to other structural supports as indicated.

3.5 APPLICATION AND FINISHING OF GYPSUM BOARD, GENERAL

A. Gypsum Board Application and Finishing Standard: Install and finish gypsum board to comply with ASTM C 840.

B. Install sound attenuation blankets where indicated, prior to gypsum board unless readily installed after board has been installed.

C. Locate exposed end-butt joints as far from center of walls and ceilings as possible, and stagger not less

than 24 inches in alternate courses of board.

D. Install ceiling boards across framing in the manner which minimizes the number of end-butt joints, which avoids end joints in the central area of each ceiling. Stagger end joints at least 24 inches.

E. Install wall/partition boards in manner which minimizes the number of end-butt joints or avoids them entirely where possible. At stairwells and similar high walls, install boards horizontally with end joints staggered over studs.

F. Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16 inch open space between boards. Do not force into place.

G. Locate either edge or end joints over supports, except in horizontal applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that like edges abut, tapered edges against tapered edges and mill-cut or field-cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.

H. Attach gypsum board to steel studs so that leading edge or end of each board is attached to open (unsupported) edge of stud flange first.

I. Attach gypsum board to supplementary framing and blocking provides for additional support at openings and cutouts.

J. Spot grout hollow metal door frames for solid core wood doors, hollow metal doors and doors over 32 inches wide. Apply spot grout at each jamb anchor clip just before inserting board into frame.

K. Form control joints and expansion joints at locations indicated, with space between edges of boards, prepared to receive trim accessories.

L. Cover both faces of steel stud partition framing with gypsum board in concealed spaces (above ceilings, etc.), except in chase walls which are braced internally.

1. Except where concealed application is indicated or required for sound, fire, air or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq ft area, and may be limited to not less than 75 percent of full coverage.
2. Fit gypsum board around ducts, pipes, and conduits.
3. Where partitions intersect open concrete coffers, cut gypsum board to fit profile of coffers and allow 1/4 to 1/2 inch wide joint for sealant.

M. Isolate perimeter of non-load-bearing drywall partitions at structural abutments. Provide 1/4 inch to 1/2 inch space and trim edge with "U" bead edge trim. Seal joints with acoustical sealant.

N. Space fasteners in gypsum boards in accordance with referenced gypsum board application and finishing standard and manufacturer's recommendations.

3.6 METHODS OF GYPSUM BOARD APPLICATION

A. Single-Layer Application: Install gypsum wallboard as follows:

1. On ceilings apply gypsum board prior to wall/partition board application to the greatest extent possible.
2. On partitions/walls apply gypsum board vertically (parallel to framing), unless otherwise indicated, and provide sheet lengths which will minimize end joints.

B. Wall Tile Base: Where drywall is base for thin-set ceramic tile and similar rigid applied wall finishes, install gypsum backing board.

1. In "dry" areas install gypsum backing board or wallboard with tapered edges taped and finished to produce a flat surface.
2. At tubs, toilets, janitor closets, and similar "wet" areas, install water-resistant gypsum backing board to comply with ASTM C 840 and recommendations of gypsum board manufacturer.
3. At showers, tubs and similar "wet areas" install glass mesh mortar units and treat joints to comply with manufacturer's recommendations for type of application indicated.

C. Double-Layer Application: Install gypsum backing board for base layer and gypsum wallboard for face layer.

1. On partitions/walls apply base layer and face layers vertically (parallel to framing) with joints of base layer over supports and face layer joints offset at least 10 inches with base layer joints.

D. Single-Layer Fastening Methods: Apply gypsum boards to supports as follows:

1. Fasten with screws.

E. Double-Layer Fastening Methods: Apply base layer of gypsum board and face layer to base layer as follows:

1. Fasten both base layers and face layers separately to supports with screws.

3.7 INSTALLATION OF DRYWALL TRIM ACCESSORIES

A. General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges to comply with manufacturer's recommendations.

B. Install corner beads at external corners.

C. Install metal edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed, and except where plastic trim is indicated. Provide type with face flange to receive joint compound except where "U" bead (semi-finishing type) is indicated.

1. Install "LC" bead where drywall construction is tightly abutted to other construction and back flange can be attached to framing or supporting substrate.

2. Install "LK" bead where substrate is kerfed to receive long flange of trim.
3. Install "L" bead where edge trim can only be installed after gypsum board is installed.
4. Install U-Type trim where edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints).

D. Install control joints at locations indicated, or if not indicated, at spacing and locations required by referenced gypsum board application and finish standard, and approved by the Architect for visual effect.

3.8 FINISH OF DRYWALL

A. General: Apply joint treatment at gypsum board joints (both directions); flanges of corner bead, edge trim, and control joints; penetrations; fastener heads, surface defects and elsewhere as required to prepare work for decoration.

B. Prefill open joints and rounded or beveled edges, if any, using setting-type joint compound.

C. Apply joint tapes at joints between gypsum boards, except where trim accessories are indicated.

D. Finish interior gypsum wallboard by applying the following joint compounds in 3 coats (not including prefill of openings in base), and sand between coats and after last coat:

1. Embedding and First Coat: Ready-mix drying-type all-purpose or taping compound.
2. Fill (Second) Coat: Ready-mix drying-type all-purpose or topping compound.
3. Finish (Third) Coat: Ready-mix drying-type all -purpose or topping compound.

E. Water-Resistant Backing Board Base for Ceramic Tile: Finish joints between water-resistant backing board with tape and setting-type joint compound to comply with gypsum board manufacturer's recommendations and installation standards referenced in Division 9 Section "Tile.

F. Partial finishing: Omit third coat and sanding on concealed drywall construction which is indicated for drywall finishing or which requires finishing to achieve fire-resistance rating, sound rating or to act as air or smoke barrier.

3.9 PROTECTION

A. Provide final protection and maintain conditions, in a manner suitable to Installer, which ensures gypsum drywall construction being without damage or deterioration at time of Substantial Completion.

END OF SECTION

SECTION 09 30 13
CERAMIC TILE

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
OCONEE COUNTY SENIOR CENTER ADDITION
FEBRUARY 05, 2021

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Glazed tile.
2. Natual Floor Tile – floors and walls.
3. Waterproof membrane for **thin-set** tile installations.
4. Crack-suppression membrane for thin-set tile installations.
5. Cementitious backer units installed as part of tile installations.
6. Tile edging, corner, transition strips.

1.3 DEFINITIONS

A. Module Size: Actual tile size (minor facial dimension as measured per ASTM C 499) plus joint width indicated.

B. Facial Dimension: Actual tile size (minor facial dimension as measured per ASTM C 499).

C. Facial Dimension: Nominal tile size as defined in ANSI A137.1.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.

C. Samples for Initial Selection: For each type of tile and grout indicated. Include Samples of accessories involving color selection.

D. Samples for Verification:

1. Full-size units of each type and composition of tile and for each color and finish required.
2. Assembled samples with grouted joints for each type and composition of tile and for each color and finish required, at least 12 inches (300 mm) square and mounted on rigid panel. Use grout of type and in color or colors approved for completed work.
3. Full-size units of each type of trim and accessory[**for each color and finish required**].

4. Stone thresholds in 6-inch (150-mm) lengths.
5. Metal edge strips in 6-inch (150-mm) lengths.

E. Product Certificates: For each type of product, signed by product manufacturer.

F. Qualification Data: For Installer.

G. Material Test Reports: For each tile-setting and -grouting product[**and special-purpose tile**].

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirement in ANSI A137.1 for labeling sealed tile packages.

B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Store [**liquid latexes**] [**and**] [**emulsion adhesives**] in unopened containers and protected from freezing.

E. Handle tile that has temporary protective coating on exposed surfaces to prevent coated surfaces from contacting backs or edges of other units. If coating does contact bonding surfaces of tile, remove coating from bonding surfaces before setting tile.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Tile and Trim Units: **Furnish quantity of full-size units equal to 3 percent of amount installed, for each type, composition, color, pattern, and size indicated**]

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products specified.

2. Products: Subject to compliance with requirements, provide one of the products specified.
3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the manufacturers specified.
4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.
5. Basis-of-Design Product: The design for each tile type is based on the product named. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.

2.2 PRODUCTS, GENERAL

A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1, "Specifications for Ceramic Tile," for types, compositions, and other characteristics indicated.

1. Provide tile complying with Standard grade requirements, unless otherwise indicated.
2. For facial dimensions of tile, comply with requirements relating to tile sizes specified in Part 1 "Definitions" Article.

B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI standards referenced in "Setting and Grouting Materials" Article.

C. Colors, Textures, and Patterns: Architect to select from Manufacturer’s full range of colors for any series specified. Where manufacturer's standard products are indicated for tile, grout, and other products requiring selection of colors, surface textures, patterns, and other appearance characteristics, provide specific products or materials complying with the following requirements:

1. BATHROOMS – Floor Tile (including shower) to be Daltile “Fabrique” 12 x 12 square. Color to be selected from full range or sizes/colors. Shower floor to be accent color.
   Wall tiles (including shower) to be Daltile “Articulo” 6” x 18” laid in stack bond. Wall Tile and Wall accent color at top and bottom of all walls to be selected from the full range of colors. Colors to be selected. Provide all related trim pieces for complete installation.

2. Sleuter Strips –
   A. Provide Sleuter DILEX-EHK stainess steel cove at all inside corners (wall to wall, floor to wall, etc.)
   B. Provide Sleuter-DECO at all wall transitions between base and wall tile, accent tile and wall tile, and at any other tile color or type change location.

C. Provide Sleuter-DECO at transition between tile and marble threshold.

D. Factory Blending: For tile exhibiting color variations within ranges selected during Sample submittals, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.

E. Mounting: For factory-mounted tile, provide back- or edge-mounted tile assemblies as standard with manufacturer, unless otherwise indicated.

1. Where tile is indicated for installation **in wet areas**, do not use back- or edge-mounted tile assemblies unless tile manufacturer specifies in writing that this type of mounting is suitable for installation indicated and has a record of successful in-service performance.

F. Factory-Applied Temporary Protective Coating: Where indicated under tile type, protect exposed surfaces of tile against adherence of mortar and grout by precoating with continuous film of petroleum paraffin wax, applied hot. Do not coat unexposed tile surfaces.

2.3 TILE PRODUCTS

A. Manufacturers:

1. American Marazzi Tile, Inc.
2. American Olean; Div. of Dal-Tile International Corp.
3. Buchtal Corporation USA.
4. Cerim-Floor Gres Ceramiche.
5. Crossville Ceramics Company, L.P.
6. Daltile; Div. of Dal-Tile International Inc.
7. Florida Tile Industries, Inc.
8. GranitiFiandre.
9. Interceramic.
10. KPT, Inc.
11. Laufen USA.
12. Lone Star Ceramics Company.
13. Metropolitan Ceramics.
14. Monarch Tile, Inc.
15. Porcelanite, Inc.
16. Quarry Tile Company.
17. Seneca Tiles, Inc.
18. Summitville Tiles, Inc.
19. United States Ceramic Tile Company.
20. Winburn Tile Manufacturing Company.

B. Accessories for Glazed Wall Tile: Provide vitreous china accessories of type and size indicated, in color and finish to match adjoining wall tile, and intended for installing by same method as adjoining wall tile.

2.4 THRESHOLDS

A. General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.

1. Bevel edges at 1:2 slope, aligning lower edge of bevel with adjacent floor finish. Limit height of bevel to 1/2 inch (12.7 mm) or less, and finish bevel to match face of threshold.

B. Marble Thresholds: **Provide MSI "Engineered Grey" 6" wide polished double beveled threshholds at all doors adjacent to tile floors**. ASTM C 503 with a minimum abrasion resistance of [**10**] [**12**] per ASTM C 1353 or ASTM C 241 and with honed finish.

1. Description: Uniform, fine- to medium-grained white stone with gray veining.

2.5 SETTING AND GROUTING MATERIALS

A. Manufacturers:

1. Atlas Minerals & Chemicals, Inc.
2. Boiardi Products Corporation.
3. Bonsal, W. R., Company.
4. Bostik.
5. C-Cure.
6. Custom Building Products.
7. DAP, Inc.
8. Jamo Inc.
9. LATICRETE International Inc.
10. MAPEI Corporation.
11. Southern Grouts & Mortars, Inc.
12. Summitville Tiles, Inc.
13. TEC Specialty Products Inc.

B. Dry-Set Portland Cement Mortar (Thin Set): ANSI A118.1.

1. For wall applications, provide nonsagging mortar that complies with Paragraph C-4.6.1 in addition to the other requirements in ANSI A118.1.

C. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4, consisting of the following:

1. Prepackaged dry-mortar mix containing dry, redispersible, ethylene vinyl acetate additive to which only water must be added at Project site.

2. Prepackaged dry-mortar mix combined with [**acrylic resin**] [**or**] [**styrene-butadiene-rubber**] liquid-latex additive.

    a. For wall applications, provide nonsagging mortar that complies with Paragraph F-4.6.1 in addition to the other requirements in ANSI A118.4.

2.7 CEMENTITIOUS BACKER UNITS

A. Provide cementitious backer units complying with ANSI A118.9 in maximum lengths available to minimize end-to-end butt joints.

2.8 MIXING MORTARS AND GROUT

A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.

B. Add materials, water, and additives in accurate proportions.

C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

2.9 Transition strips at edges, corners, etc., provide Schluter, or equal, products at conditions listed:

1. At all tile floor to tile wall intersections, provide Schluter DILEX-AHK trim piece
2. At all inside corners, provide Schluter DILEX-EHK
3. At all outside tile corners provide Schluter- QUADEC, or equal trim piece.
4. At top termination of tile, provide Schluter RONDEC-DB trim.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.

1. Verify that substrates for setting tile are firm; dry; clean; free of oil, waxy films, and curing compounds; and within flatness tolerances required by referenced ANSI A108 Series of tile installation standards for installations indicated.
2. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed before installing tile.

3. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove coatings, including curing compounds and other substances that contain soap, wax, oil, or silicone, that are incompatible with tile-setting materials.

B. Provide concrete substrates for tile floors installed with [**adhesives**] [**or**] [**thin-set mortar**] that comply with flatness tolerances specified in referenced ANSI A108 Series of tile installation standards.

1. Fill cracks, holes, and depressions with trowelable leveling and patching compound according to tile-setting material manufacturer's written instructions. Use product specifically recommended by tile-setting material manufacturer.
2. Remove protrusions, bumps, and ridges by sanding or grinding.

C. Blending: For tile exhibiting color variations within ranges selected during Sample submittals, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

D. Field-Applied Temporary Protective Coating: Where indicated under tile type or needed to prevent grout from staining or adhering to exposed tile surfaces, precoat them with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.

3.3 INSTALLATION, GENERAL

A. ANSI Tile Installation Standards: Comply with parts of ANSI A108 Series "Specifications for Installation of Ceramic Tile" that apply to types of setting and grouting materials and to methods indicated in ceramic tile installation schedules.

3.4 [**WATERPROOFING**] [**AND**] [**CRACK-SUPPRESSION MEMBRANE**] INSTALLATION

A. Install waterproofing to comply with ANSI A108.13 and waterproofing manufacturer's written instructions to produce waterproof membrane of uniform thickness bonded securely to substrate.

B. Install crack-suppression membrane to comply with manufacturer's written instructions to produce membrane of uniform thickness bonded securely to substrate.

C. Do not install tile over waterproofing until waterproofing has cured and been tested to determine that it is watertight.

3.5 FLOOR TILE INSTALLATION

A. General: Install tile to comply with requirements in the Floor Tile Installation Schedule, including those referencing TCA installation methods and ANSI A108 Series of tile installation standards.

1. For installations indicated below, follow procedures in ANSI A108 Series tile installation standards for providing 95 percent mortar coverage.

    a. Exterior tile floors.
    b. Tile floors in wet areas.
    c. Tile swimming pool decks.
    d. Tile floors in laundries.
    e. Tile floors composed of tiles 8 by 8 inches (200 by 200 mm) or larger.
    f. Tile floors composed of rib-backed tiles.

B. Joint Widths: Install tile on floors with the following joint widths:

1. Ceramic Mosaic Tile: 1/16 inch (1.6 mm).
2. Quarry Tile: [**1/4 inch (6.35 mm)**] [**3/8 inch (9.5 mm)**].
3. Paver Tile: [**1/4 inch (6.35 mm)**] [**3/8 inch (9.5 mm)**].

C. Stone Thresholds: Install stone thresholds at locations indicated; set in same type of setting bed as abutting field tile, unless otherwise indicated.

1. Set thresholds in latex-portland cement mortar for locations where mortar bed would otherwise be exposed above adjacent nontile floor finish.

D. Metal Edge Strips: Install at locations indicated or where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with top of tile.

E. Grout Sealer: Apply grout sealer to[**cementitious**] grout joints according to grout-sealer manufacturer's written instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer and sealer that has gotten on tile faces by wiping with soft cloth.

3.6 WALL TILE INSTALLATION

A. Install types of tile designated for wall installations to comply with requirements in the Wall Tile Installation Schedule, including those referencing TCA installation methods and ANSI setting-bed standards.

B. Install metal lath and scratch coat for walls to comply with ANSI A108.1A, Section 4.1.

C. Joint Widths: Install tile on walls with the following joint widths:

1. Ceramic Mosaic Tile: 1/16 inch (1.6 mm).
2. Glazed Wall Tile: 1/16 inch (1.6 mm).
3. Quarry Tile: [**1/4 inch (6.35 mm)**] [**3/8 inch (9.5 mm)**].

3.7 CLEANING AND PROTECTING

A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.

1. Remove [**epoxy**] [**and**] [**latex-portland cement**] grout residue from tile as soon as possible.
2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions, but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.
3. Remove temporary protective coating by method recommended by coating manufacturer that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent it from clogging drains.

B. When recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear.

C. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.

D. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

END OF SECTION 09310

SECTION 09 65 19

RESILIENT FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. Extent of resilient flooring and accessories is shown on drawings and in schedules. Products will include 6” Rubber base; Luxury Vinyl Tile, and any other accessories/products.

1.3 QUALITY ASSURANCE

A. Manufacturer: Provide each type of resilient flooring and accessories as produced by a single manufacturer, including recommended primers, adhesives, sealants, and leveling compounds.

B. Fire Test Performance: Provide resilient flooring which complies with the following fire test performance criteria as determined by an independent testing laboratory acceptable to authorities having jurisdiction.
   1. Critical Radiant Flux (CRF): Not less than the following rating per ASTM E 648.
      a. 0.45 watts per sq cm
   2. Flame Spread: Not more than 25 per ASTM E 84
   3. Smoke Developed: Not more than 450 per ASTM E 84
   4. Smoke Density: Not more than 450 per ASTM E 662

C. Installer's Qualifications: Engage Installer who is certified in writing by resilient flooring manufacturer as qualified for installation of sheet vinyl employing heat welded seams.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's technical data for each type of resilient flooring and accessory.

B. Samples for Initial Selection Purposes: Submit manufacturer's standard color charts in form of actual sections of resilient flooring, including accessories, showing full range of colors and patterns available, for each type of resilient flooring required.

C. Samples for Verification Purposes: Submit the following samples of each type, color and pattern of resilient flooring required, showing full-range of color and pattern variations.
   1. Full-size tile samples
   2. 6" x 9" samples of sheet flooring
   3. 2-1/2" long samples of resilient flooring accessories
   4. Welding beads for sheet flooring
   5. Other materials as required

D. Certification for Fire Test Performance: Submit certification from an independent testing laboratory acceptable to authorities having jurisdiction that resilient flooring complies with fire test performance requirements.

E. Maintenance Instructions: Submit 2 copies of manufacturer's recommended maintenance practices for each type of resilient flooring and accessory required.

1.5 **PROJECT CONDITIONS**

A. Maintain minimum temperature of 65 degrees F (18 deg C) in spaces to receive resilient flooring for at least 48 hours prior to installation, and for not less than 48 hours after installation. Store resilient flooring materials in spaces where they will be installed for at least 48 hours before beginning installation. Subsequently, maintain minimum temperature of 55 deg F (13 deg C) in areas where work is completed.

B. Install resilient flooring and accessories after other finishing operations, including painting, have been completed. Do not install resilient flooring over concrete slabs until the latter have been cured and are sufficiently dry to achieve bond with adhesive as determined by resilient flooring manufacturer's recommended bond and moisture test.

PART 2 - PRODUCTS

2.1 **ACCEPTABLE MANUFACTURERS**

A. Manufacturer: Subject to compliance with requirements, provide products of the following:

1. Manufacturers of Vinyl Luxury Tile:

    a. Roppe Northern Timbers or equal vinyl wood plank flooring collections. Colors to be selected from full range of colors.

2. Manufacturers of 6” Rubber Wall Base (base to be Roppe 700 series 6” or equal) :

    a. Burke Flooring Products Div., Burke Industries, Inc.
    b. Flexco Div., Textile Rubber Co.
    c. Roppe Rubber Corp.
    d. Azrock.

2.2 **RESILIENT FLOORING COLORS AND PATTERNS**

A. Provide colors and patterns as indicated, or if not otherwise indicated, as selected by Architect from manufacturer's standards.

2.3 **LUXURY VINYL FLOOR TILE**

A. Manufacturer: Roppe Corporation or equal

1. Description: Solid Vinyl Floor Tile meeting the requirements of ASTM F 1700.
2. Resistance to Chemicals per ASTM F 925: Pass (List of chemicals provided by manufacturer on request)
3. Light Stability per ASTM F 1515: Pass.(Delta E < 8.00)
4. Abrasion resistance per ASTM D 3389: Excellent (<0.15 weight loss after 1,000 cycles using H-18 wheels with 500 gram load applied)
5. Design and Color: As selected by Architect from manufacturer's standard designs and colors.
6. Does do not contain any of the hazardous chemicals listed in California Proposition 65
7. Collaborative for High Performance Schools 01350 Low-Emitting Material Criteria: Pass

B. Roppe Solid Vinyl Floor Tile (or equal)

1. Northern Parallels Premium vinyl plank and type. Allow for FOUR SEPARATE FLOORING SELCTIONS selected from all available pattern options (stone, desert, chevron, mini wood travertine, or coastal) and from all available colors in each pattern group.
   a. Classification: ASTM F 1700, Class III, Type A.
   b. Thickness: 28 mil
   c. Wear Layer Thickness: exceeds ASTM F 1700, Commercial Use.

2.4 RUBBER STAIR TREADS, RISERS, AND LANDINGS –

1. Provide Roppe or equal Raised design rubber tread, riser and landings. Color and pattern to be selected from complete series of patterns and colors available in each series. Provide for accent strip or tread at the top of landings and at bottom treads.

2.5 **ACCESSORIES**

A. Rubber Wall Base: Provide Roppe or equal Contours profiled base with matching end stops and preformed or molded corner units, and as follows:

1. Height: 6"
2. Finish: Matte

B. Adhesives (Cements): Waterproof, stabilized type as recommended by flooring manufacturer to suit material and substrate conditions.

C. Concrete Slab Primer: Non-staining type as recommended by flooring manufacturer.

D. Leveling and Patching Compounds: Latex type as recommended by flooring manufacturer.

PART 3 - EXECUTION

3.1 **INSPECTION**

A. Require Installer to inspect subfloor surfaces to determine that they are satisfactory. A satisfactory subfloor surface is defined as one that is smooth and free from cracks, holes, ridges, coatings preventing adhesive bond, and other defects impairing performance or appearance.

B. Perform bond and moisture tests on concrete subfloors to determine if surfaces are sufficiently cured and dry as well as to ascertain presence of curing compounds.

C. Do not allow resilient flooring work to proceed until subfloor surfaces are satisfactory.

3.2 **PREPARATION**

A. Prepare subfloor surfaces as follows:
   1. Use leveling and patching compounds as recommended by resilient flooring manufacturer for filling small cracks, holes and depressions in subfloors.
   2. Remove coatings from subfloor surfaces that would prevent adhesive bond, including curing compounds incompatible with resilient flooring adhesives, paint, oils, waxes and sealers.

B. Broom clean or vacuum surfaces to be covered, and inspect subfloor.

C. Apply concrete slab primer, if recommended by flooring manufacturer, prior to application of adhesive. Apply in compliance with manufacturer's directions.

3.3 **INSTALLATION, GENERAL**

A. Where movable partitions are shown, install resilient flooring before partitions are erected.

B. Install resilient flooring using method indicated in strict compliance with manufacturer's printed instructions. Extend resilient flooring into toe spaces, door reveals, and into closets and similar openings.

C. Scribe, cut, and fit resilient flooring to permanent fixtures, built-in furniture and cabinets, pipes, outlets and permanent columns, walls and partitions.

D. Maintain reference markers, holes, or openings that are in place or plainly marked for future cutting by repeating on finish flooring as marked on subfloor. Use chalk or other non-permanent marking device.

E. Install resilient flooring on covers for telephone and electrical ducts, and other such items occurring within finished floor areas. Maintain overall continuity of color and pattern with pieces of flooring installed in these covers. Tightly cement edges to perimeter of floor around covers and to covers.

F. Tightly cement resilient flooring to subbase without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections. Hand roll resilient flooring at perimeter of each covered area to assure adhesion.

3.4 **INSTALLATION OF TILE FLOORS**

A. Lay tile from center marks established with principal walls, discounting minor offsets, so that tile at opposite edges of room are of equal width. Adjust as necessary to avoid use of cut widths less than 1/2 tile at room perimeters. Lay tile square to room axis, unless otherwise shown.

B. Match tiles for color and pattern by using tile from cartons in same sequence as manufactured and packaged if so numbered. Cut tile neatly around all fixtures. Broken, cracked, chipped or deformed tile are not acceptable.

1. Lay tile with grain running in alternating directions.

C. Adhere tile flooring to substrates using full spread of adhesive applied in compliance with flooring manufacturer's directions.

3.5 **INSTALLATION OF SHEET FLOORING**

A. Lay sheet flooring to provide as few seams as possible with economical use of materials. Match edges for color shading and pattern at seams in compliance with manufacturer's recommendations.

B. Adhere sheet flooring to substrates using method approved by flooring manufacturer for type of sheet flooring and substrates condition indicated:

1. Use conventional full spread adhesive method for filled vinyl without backing.

C. Prepare seams in vinyl sheet flooring with manufacturer's special routing tool and heat weld with vinyl thread in accordance with manufacturer's instructions.

D. Provide integral flash cove base where shown on drawings, including cove support strip and metal top edge strip. Construct coved base in accordance with manufacturer's instructions.

3.6 **INSTALLATION OF ACCESSORIES**

A. Apply wall base to walls, columns, pilasters, casework and other permanent fixtures in rooms or areas where base is required. Install base in lengths as long as practicable, with preformed corner units, or fabricated from base materials with mitered or coped inside corners. Tightly bond base to substrate throughout length of each piece, with continuous contact at horizontal and vertical surfaces.

B. Place resilient edge strips tightly butted to flooring and secure with adhesive. Install edging strips at edges of flooring which would otherwise be exposed.

C. Apply resilient accessories at stair as indicated and in strict accordance with manufacturer's installation instructions.

3.7 **CLEANING AND PROTECTION**

A. Perform following operations immediately upon completion of resilient flooring:

1. Sweep or vacuum floor thoroughly
2. Do not wash floor until time period recommended by resilient flooring manufacturer has elapsed to allow resilient flooring to become well-sealed in adhesive
3. Damp-mop floor being careful to remove black marks and excessive soil
4. Remove any excess adhesive or other surface blemishes, using appropriate cleaner recommended by resilient flooring manufacturer.

B. Protect flooring against damage during construction period to comply with resilient flooring manufacturer's directions.

1. Protect resilient flooring against damage from rolling loads for initial period following installation by covering with plywood or hardboard. Use dollies to move stationary equipment or furnishings across floors.
2. Cover resilient flooring with undyed, untreated building paper until inspection for substantial completion.

C. Clean resilient flooring not more than 4 days prior to date scheduled for inspections intended to establish date of substantial completion in each area of project. Clean resilient flooring by method recommended by resilient flooring manufacturer.

3.8 **EXTRA STOCK**

A. Deliver stock of maintenance materials to Owner. Furnish maintenance materials from same manufactured lot as materials installed and enclosed in protective packaging with appropriate identifying labels.

1. Tile Flooring: Furnish not less than one box for each 50 boxes or fraction thereof, for each type, color, pattern, and size installed.
2. Sheet Flooring: Furnish not less than 5 linear yards for each type, color and pattenr installed.

END OF SECTION

PART 1 – GENERAL

1.1 *SECTION INCLUDES ATHLETIC FLOORING.*

A. Supply and installation of the indoor resilient multipurpose surfacing
B. Application of the game lines
C. References for the correct construction and preparation of concrete slabs to receive resilient flooring.

1.2 *SUBMITTALS*

A. Product Data:
   1. Manufacturer's promotional brochures, specifications and installation instructions
B. Manufacturer Certifications:
   1. Provide certification that accurately identifies the Original Equipment Manufacturer (OEM) of flooring furnished for this project including manufacturer's name, address and factory location.
   2. Suppliers of private label flooring for this project must identify themselves as such and fully disclose the OEM information listed above.
   3. All "manufacturer" requirements in these specifications must be complied with by the OEM, including warranties, certifications, qualifications, product data, test results, environmental requirements, performance data, etc.
C. Samples:
   1. Submit for selection and approval three (3) sets of the indoor resilient multipurpose surfacing, manufacturer's brochures, samples or sample boards of all of the available colors, textures and styles.
   2. Submit color samples of all the available game line paint colors for selection and approval.
D. Closeout Submittals:
   1. Submit three (3) copies of the indoor resilient multipurpose surfacing and manufacturer's maintenance instructions.
   2. Submit three (3) copies of the material and installation warranties as specified.

1.3 *QUALITY ASSURANCE*

A. Qualifications:
   1. The indoor resilient multipurpose surfacing shall have been actively marketed for a minimum of ten (10) years.
   2. The indoor resilient multipurpose surfacing shall be manufactured in an ISO 9001 certified plant.
   3. The indoor resilient multipurpose surfacing shall be manufactured in an ISO 14001 certified plant.
   4. The indoor resilient multipurpose surfacing supplier shall be an established firm, experienced in the field, and competent in the techniques required by the manufacturer.
   5. The installer of the indoor resilient multipurpose surfacing shall have a minimum of five (5) years of experience in the field installing indoor resilient multipurpose

surfacing and have worked on at least five (5) projects of similar size, type and complexity.

B. Certifications:
   1. Installer to submit the indoor resilient athletic surfacing manufacturer's certification attesting that they are a trained installer of the indoor resilient multipurpose surfacing.
   2. The indoor resilient multipurpose surfacing manufacturer to submit official ISO 9001 certification for the facility in which the indoor resilient multipurpose surfacing is manufactured.
C. Testing:
   1. Tests shall be relative for multi-purpose use with certificates from independent testing resources to be made available upon request.
   2. Test results shall be no more than 5 years old and performed according to ASTM standard testing procedures.

1.4 *DELIVERY, STORAGE AND HANDLING*

A. Delivery:
   Material shall not be delivered until all related work is in place and finished and/or proper storage facilities and conditions can be provided and guaranteed stable according to FieldTurf USA, Inc. recommendations.
B. Storage:
   1. Store the material in a secure, clean and dry location.
   2. Maintain temperature between 55° and 85° Fahrenheit.
   3. Store the indoor resilient athletic surfacing rolls in an upright position on a smooth flat surface immediately upon delivery to jobsite.
   4. Rolls shipped in rigid protective cardboard containers can be laid horizontally prior to unpacking and installation.

1.5 *PROJECT/SITE CONDITIONS*

A. It is the responsibility of the general contractor/construction manager to maintain project/site conditions acceptable for the installation of the indoor resilient multipurpose flooring.
B. The area in which the indoor resilient multipurpose surfacing will be installed shall be dry and weather tight. Permanent heat, light and ventilation shall be installed and operable.
C. All other trades shall have completed their work prior to the installation of the resilient athletic flooring. The general contractor or construction manager shall maintain a secure and clean working environment before, during and after the installation.
D. Maintain a stable room temperature of at least 65°F for a minimum of one (1) week prior to, during and thereafter installation.
E. An effective low-permeance vapor barrier is placed directly beneath the concrete subfloor. For "on" or "below grade" installations, it is recommended to provide a permanent vapor barrier resistant to long term hydrostatic pressure/moisture

exposure. Protrusions should be sealed to prevent moisture migration into the slab. Moisture should not be allowed to enter the slab after the completed construction.

F. Concrete subfloor surface pH level within the 7 to 11 range dependent upon installation type.
G. Concrete subfloor should be no greater than 1/8" within a 10 ft diameter. This tolerance can be measured in accordance with ASTM E1155. A specified (F_F) of 50 and an (F_L) of 30 should reach this degree of floor flatness and floor level. There is no numerical correlation between F numbers and the deviation from the straight edge. However, the above specified numbers should achieve a flat floor with minimal deviation in the slab. Reference ACI 117 and ACI 302.1R. The general contractor should provide a certificate of compliance with the above recommendations.
H. Concrete subfloor must be clean and free of all foreign materials or objects including, but not limited to, curing compounds and sealers.
I. Fill cracks, grooves, voids, depressions, and other minor imperfections. Follow the manufacturer's directions. Moveable joints must be treated utilizing specific transitioning joint devices depending upon the architect's recommendations. Follow current ASTM F710 guidelines for the preparation of concrete slabs to receive resilient flooring.
J. Refer to ACI 302.2R "Guidelines for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials" for concrete design and construction.
K. Concrete slab shall be fortified with continual steel reinforcement. Fiber reinforcement alone shall not be considered adequate fortification.

1.6 *WARRANTY*

A. Special Limited Warranty:
   1. Manufacturer's standard form in which manufacturer agrees to repair or replace sports flooring including labor that fails within specified warranty period.
B. Material warranty must be direct from the product manufacturer.
   1. Material warranties from separate or third party insurance providers are not valid.
   2. Material warranties must come from original manufacturer or division thereof. Private label warranties from distributors or brokers are not valid. Supply original point of manufacturing upon request.
C. Failures include, but are not limited to, the following:
   1. Material manufacturing defects.

2. Surface wear and deterioration to the point of wear-through of wear layer per ASTM F410/ASTM F1303.
3. Failure due to substrate moisture exposure exceeding 98 percent relative humidity when tested according to ASTM F2170.

D. Warranty Period:
1. For material defects and surface wear-through: **15** years from date of substantial completion.
2. For moisture vapor tolerance: **10** years from date of substantial completion.

E. Installer's Limited Warranty:
1. Installer's standard form in which installer agrees to repair or replace sports flooring that fails due to poor workmanship or faulty installation within the specified warranty period.
2. Warranty Period: 2 years from date of substantial completion.

1.7 *ADDITIONAL MATERIALS*

A. Furnish to the owner additional materials containing a total of at least 1% of each different color or design of the indoor resilient athletic surfacing used on the project.

1.8 *LEED™ CERTIFICATION*

A. The indoor resilient athletic surfacing should be able to help this facility to achieve points towards *LEED™ certification.* Flooring system must be certified by FloorScore.
B. LEED categories positively affected by the indoor resilient athletic surfacing:

LEED™ V4 Credit		Contribution
Materials & Resources: Building Product Disclosure & Optimization (BPDO)		
MRc3: Sourcing of Raw Materials	Options 1 & 2	2 Points
MRc4: Material Ingredients	Option 1	1 Point
MRc5: Construction and Demolition Management	Reclamation and Recycling	ReStart® Program
Indoor Environmental Quality		
EQc2: Low-Emitting Materials	TVOC: 0.5 mg/m3 or less	FloorScore®

PART 2 - PRODUCTS

2.1 *MANUFACTURERS*

A. The basis of the design for the indoor resilient multipurpose surfacing is Omnisports 9.4 mm as manufactured by Tarkett.
B. All other installation accessories and related components must be either made or approved by the indoor resilient athletic surfacing manufacturer.
C. Other products may be approved as equal if deemed qualified and submitted in accordance with the General Conditions.
D. Test reports confirming compliance from an independent sports laboratory must be provided along with samples, technical data, installation, maintenance, and warranty prior to acceptance as an alternative product.

2.2 *MATERIALS*

A. Omnisports 9.4 mm - Prefabricated sport surface 9.4 mm (3/8") with wood flooring design and slightly textured embossed surface as supplied by Tarkett.
   1. Embossing of wood design and solid colors must be the same; varying embossing or surface textures will not be allowed.
   2. Printing of wood design shall closely resemble standard wood strip flooring in size, color, board length, and grain appearance.
   3. The wood design shall be protected by a clear layer of pure PVC (Polyvinyl Chloride) and TopClean xp, a factory-applied UV cured urethane treatment.
   4. Intermediate layers shall be fortified with a non-woven fiberglass grid for increased dimensional stability.
   5. The foam force reduction layer shall be high-density closed cell PVC foam with honeycomb embossing, and is applied in one continuous manufacturing process.
   6. Laminated or adhered foam layers will not be allowed.
   7. Field constructed products will not be accepted.

B. Physical properties of the indoor resilient athletic surfacing shall conform to the following minimums:

Width	—	6′ 6″ (2 m)
Length	—	85′ (25.9m) approx.
Wear Layer	—	2 mm
Total Thickness	—	9.4 mm
Wear Layer	Type 1– Grade 1	ASTM F1303/F410
Vertical Deformation	PASSED	ASTM F2772
Rolling Load	PASSED	0.30 (EN 1569 {11/1999})
Surface Finish Effect	PASSED	ASTM F2772 (80 – 110)
Chemical Resistance	Excellent	ASTM F925
Impact Resistance	PASSED	EN 1717
Abrasion Resistance	PASSED	0.10 (EN ISO 5470-1 {06/1999})
Static Load Limit	PASSED	ASTM F970- Load 175 Lbs
Sound Insulation	Excellent	+/= 19 dB (ISO 717/2)
In-Room Sound Insulation	Excellent	61dB (NF S31-074)
Ball Rebound	PASSED	ASTM F2772 > 90%
Force Reduction	PASSED	ASTM F2772 Class 3
Fire Rating	PASSED	ASTM E648 Class 1
Microbial Assays Test	No Growth	G21 ASTM - Backing
Asthma and Allergy Friendly™	ASP: 05-01/101	Certified Compliant
Phthalate-free technology	—	YES
REACH Compliant	—	YES
Heavy Metals	—	NO
ISO 9001	—	YES
ISO 14001	—	YES

1. Color: As available from the indoor resilient athletic surfacing manufacturer's standard range.
2. Hardwood Design Series: A wood look design as available from the indoor resilient athletic surfacing manufacturer's standard range.
3. Texture: Texture to remain consistent between solid colors and wood design when blending colors.

C. Welding Rod: As supplied by the indoor resilient athletic surfacing manufacturer or supplier.
   1. Color to blend with the indoor resilient athletic surfacing color or design.
   2. All seams shall be welded to create a monolithic and impermeable surface.

D. Adhesive: As approved by the indoor resilient athletic surfacing manufacturer.

E. Game Line Paint and Primer: As approved by the indoor resilient athletic surfacing manufacturer.

PART 3 - EXECUTION

3.1 *EXAMINATION*

A. It is the responsibility of the general contractor/construction manager to ensure that project/site conditions are acceptable for the installation of the indoor resilient athletic flooring.
B. Verify that the area in which the indoor resilient athletic surfacing will be installed is dry and weather tight. Verify that permanent heat, light and ventilation are installed and operable.
C. Verify that all other work that could cause damage, dirt and dust or interrupt the normal pace of the indoor resilient athletic flooring installation is completed or suspended.
D. Verify that there is a stable room temperature of at least 65◦F.
E. Verify that there are no foreign materials or objects on the subfloor and that the subfloor is clean and ready for installation.
F. *Direct Full Spread Adhering to Concrete Subfloor Multi-Poxy : moisture content less than 98% RH when tested per ASTM F2170.*
G. Follow Fieldturf USA, Inc. installation recommendations.
H. Do not average the results of the tests. Report all field test results in writing to the General Contractor, Architect, and End User prior to installation.
I. Verify that the concrete subfloor surface pH level is within the 7 - 11 range.
J. Document the results confirming the slab is within manufacturer's tolerances for slab deviation.

3.2 *PREPARATION OF SURFACES*

A. Sand the entire surface of the concrete slab.
B. Sweep the concrete slab so as to remove all dirt and dust. If a sweeping compound is to be used it must be a sweeping compound that does not contain oil or other items that may inhibit the adhesive bond.
C. Slab must be dust free. In the event that dust impairs adhesive bond, priming the slab prior to application of adhesive may be necessary. Follow installation guidelines.
D. Follow OSHA guidelines.

3.3 *INSTALLATION*

A. The installation area shall be closed to all traffic and activity for a period to be set by the indoor resilient athletic surfacing installer. The indoor resilient athletic surfacing installation shall not begin until the installer is familiar with the existing conditions.
B. All necessary precautions should be taken to minimize noise, smell, dust, the use of hazardous materials and any other items that may inconvenience others.
C. Install the indoor resilient athletic surfacing in strict accordance with the indoor resilient athletic surfacing manufacturer's written instructions.
D. Install the indoor resilient athletic surfacing minimizing cross seams. Provide a seam diagram during the submittal process for approval prior to installation. Vinyl Sheet

Flooring Seams: Comply with ASTM F 1516. Rout joints and heat weld to permanently and seamlessly fuse sections together.

E. Paint game lines using approved game line paint primer and game line paint in strict accordance with the game line paint manufacturer's instructions.
F. Install appropriate threshold plates or transition strips where necessary.

3.5 *CLEANING*

A. Remove all unused materials, tools, and equipment and dispose of any debris properly. Clean the indoor resilient athletic surfacing in accordance with the manufacturer's instructions.

3.6 *PROTECTION*

A. If required, protect the indoor resilient athletic surfacing from damage using coverings approved by the manufacturer until acceptance of work by the customer or their authorized representative.

3.7 *RELATED STANDARDS AND GUIDELINES*

A. ASTM F2170 "Standard Test Method for Determining Relative Humidity In Concrete Floor Slabs Using In-Situ Probes"
B. ASTM F710 "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring"
C. ACI 302.2R-06 "Guideline for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials"
D. ASTM F2772-11 "Standard Specification for Athletic Performance Properties of Indoor Sports Floor Systems"

END OF SECTION

SECTION 09 91 00

PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes surface preparation, painting, and finishing of exposed interior and exterior items and surfaces.

1. Surface preparation, priming, and finish coats specified in this section are in addition to shop priming and surface treatment specified under other sections.

B. Paint exposed surfaces whether or not colors are designated in "schedules," except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color of finish is not designated, the Architect will select from standard colors or finishes available.

C. Painting is not required on pre-finished items, finished metal surfaces, concealed surfaces, operating parts, and labels.

1. Labels: Do not paint over Underwriter's Laboratories, Factory Mutual or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

1.3 DEFINITIONS

A. "Paint" includes coating systems materials, primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate, or finish coats.

1.4 SUBMITTALS

A. Product Data: Manufacturer's technical information, label analysis, and application instructions for each material proposed for use.

1. List each material and cross-reference the specific coating and finish system and application. Identify each material by the manufacturer's catalog number and general classification.

B. Samples for verification purposes: Provide samples of each color and material to be applied, with texture to simulate actual conditions, on representative samples of the actual substrate. Define each separate coat, including block fillers and primers. Use representative colors when preparing samples for review. Resubmit until required sheen, color, and texture are achieved.

1. Provide a list of material and application for each coat of each sample. Label each sample

as to location and application.

2. Submit samples on the following substrates for the Architect's review of color and texture only:
   a. Interior Walls
   b. Interior Ceilings.

1.5 QUALITY ASSURANCE

A. Single-Source Responsibility: Provide primers and undercoat paint produced by the same manufacturer as the finish coats.

B. Coordination of Work: Review other sections in which primers are provided to ensure compatibility of the total systems for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
   1. Notify the Architect of problems anticipated using the materials specified.

C. Material Quality: Provide the manufacturer's best quality trade sale paint material of the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be acceptable.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the job site in the manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:
   1. Product name or title of material
   2. Product description (generic classification or binder type)
   3. Federal Specification number, if applicable
   4. Manufacturer's stock number and date of manufacture
   5. Contents by volume, for pigment and vehicle constituents
   6. Thinning instructions
   7. Application instructions
   8. Color name and number

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Maintain containers used in storage in a clean condition, free of foreign materials and residue.
   1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.7 JOB CONDITIONS

A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 deg F (10 deg C) and 90 deg F (32 deg C).

B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 deg F (7 deg C) and 95 deg F (35 deg C).

C. Do not apply paint in snow, rain, fog, or mist, when the relative humidity exceeds 85 percent, at temperatures less than 5 deg F (3 deg C) above the dew point, or to damp or wet surfaces.

1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by the manufacturer during application and drying periods.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide products of the following:

1. Paints: Apply one coat primer and two coats finish to all wall surfaces.
   Use top quality of one of the following:
   a. Benjamin Moore Company used as basis of color
   b. Sherwin Williams
   c. Devoe

2.2 PRIMERS

A. Ceilings and Walls to receive epoxy primer and two coats epoxy paint finish.

B. Exterior materials to receive two coats of latex primer then two coats of latex paint.

2.3 INTERIOR FINISH PAINT MATERIAL

Provide Sherwin Williams or Equal product -

CMU — Concrete Masonry Units

Semi-Gloss — High Performance Solvent Based Epoxy Finish (frequently washed and sanitized areas)

Filler: Kem Cati-Coat® HS Epoxy Filler/Sealer, B42-400 Series (number of coats as required to fill voids, pinholes and to provide a proper dense basecoat — confirm with mock up and before application of finish coats)

Finishes: (2) Two Coats of Macropoxy® 646-100 Fast Cure Epoxy, B58-620 (solvent based

epoxy)

Cement Board — Walls & Ceilings (frequently washed and sanitized areas)
Semi-Gloss — High Performance Finish Primer: Not Required
Finishes: (2) Two Coats of Macropoxy® 646-100 Fast Cure Epoxy, B58- 620 (solvent based epoxy)\

ALL DOOR FRAMES, DOORS, HANDRAILS AND MISCELLANEOUS METALS TO RECEIVE:

Ferrous Metal — Doors, Frames, Handrails, and Miscellaneous Metals
Gloss — High Performance Finish
1 coat: Pro Industrial™ Pro-Cryl® Universal Primer, B66-310 Series
2 coats: Pro Industrial™ Water Based Catalyzed Epoxy Gloss, B73-300 Series

GYPSUM BOARD –
Semi-Gloss Finish
1 coat: ProMar® 200 Zero VOC Latex Primer, B28W2600
2 coats: Pro Industrial™ Pre-Catalyzed Water Based Epoxy Semi-Gloss, K46 Series

FLOORS - General Polymers Trafficote 105 Self Leveling Slurry (provide preparation, primer, binder, and finish coat per manufacturer's recommendations.

2.4 EXTERIOR FINISH PAINT MATERIAL

EXTERIOR CMU -

a. Provide **Loxon Block Surfacer** and primer coats per manufacturer's recommendations for **Top coat of ConFlex XL™ Elastomeric High Build Coating**— An elastomeric coating that provides excellent flexibility, durability, and weather resistance.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions under which painting will be performed for compliance with requirements for application of paint. Do not begin paint application until unsatisfactory conditions have been corrected.

1. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions

within a particular area.

3.2 PREPARATION

A. General Procedures: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items in place that are not to be painted, or provide surface-applied protection prior to surface preparation and painting. Remove these items if necessary for complete painting of the items and adjacent surfaces. Following completion of painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.

1. Clean surfaces before applying paint or surface treatments. Remove oil and grease prior to cleaning. Schedule cleaning and painting so that dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

B. Surface Preparation: Clean and prepare surfaces to be painted in accordance with the manufacturer's instructions for each particular substrate condition and as specified.

1. Provide barrier coats over incompatible primers or remove and reprime. Notify Architect in writing of problems anticipated with using the specified finish-coat material with substrates primed by others.

2. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. San surfaces exposed to view smooth and dust off.

a. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer before application of primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.

b. Prime, stain, or seal wood to be painted immediately upon delivery. Prime edges, ends, faces, undersides, and backsides of wood, including cabinets, counters, cases, and paneling.

c. When transparent finish is required, backprime with spar varnish.

d. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on backside.

3. Ferrous Metals: Clean nongalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with recommendations of the Steel Structures Painting Council.

a. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by the paint manufacturer, and touch up

with the same primer as the shop coat.

C. Materials Preparation: Carefully mix and prepare paint materials in accordance with manufacturer's directions.

1. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.
2. Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.
3. Use only thinners approved by the paint manufacturer, and only within recommended limits.

3.3 APPLICATIONS

A. Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

B. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.

1. Paint colors, surface treatments, and finishes are indicated in "schedules".
2. Provide finish coats that are compatible with primers used.
3. The number of coats and film thickness required is the same regardless of the application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where sanding is required to produce an even smooth surface in accordance with the manufacturer's directions.
4. Apply additional coats when undercoats, stains, or other conditions show through final coat of paint until paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.
5. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convector covers, covers for finned tube radiation, grilles, and similar components are in place. Extend coatings in these areas as required to maintain the system integrity and provide desired protection.
6. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only before final installation of equipment.
7. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, nonspecular black paint.

8. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
9. Sand lightly between each succeeding enamel or varnish coat.
10. Omit primer on metal surfaces that have been shop-primed and touch up painted.

C. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. Allow sufficient time between successive coats to permit proper drying. Do not recoat until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure and where application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

D. Minimum Coating Thickness: Apply materials at not less than the manufacturer's recommended spreading rate. Provide a total dry film thickness of the entire system as recommended by the manufacturer.

E. Prime Coats: Before application of finish coats, apply a prime coat of material as recommended by the manufacturer to material that is required to be painted or finished and has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to assure a finish coat with no burn through or other defects due to insufficient sealing.

3.4 CLEANING

A. Cleanup: At the end of each work day, remove empty cans, rags, rubbish, and other discarded paint materials from the site.

B. Upon completion of painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping, using care not to scratch or damage adjacent finished surfaces.

3.5 PROTECTION

A. Protect work of other trades, whether to be painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.

B. Provide "wet paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others for protection of their work after completion of painting operations.

1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

END OF SECTION

SECTION 10 14 36

SIGNAGE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Plastic interior panel signs.
   1. Room Identification.
   2. Restroom.

1.2 RELATED SECTIONS

A. Section 06 20 00 - Finish Carpentry.

B. Section 10 13 13 - Electronic Directories.

C. Section 10 14 16 - Plaques.

1.3 REFERENCES

A. ANSI 117.1 - For Buildings and Facilities.

B. ASTM International (ASTM):
   1. ASTM D 635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.
   2. ASTM D 1929 - Standard Test Method for Determining Ignition Temperature of Plastics.
   3. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
   4. ASTM E 2072-04 - Standard Specification for Photoluminescent (Phosphorescent) Safety Marketing.
   5. ASTM E2073-02 - Standard Test Method for Photopic Luminance of Photo Luminescent (Phosphorescent) Markings.

C. Underwriters Laboratories (UL):
   1. UL 94 - Tests for Flammability of Plastic Materials for Parts in Devices and Appliances.
   2. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials.

1.4 PERFORMANCE REQUIREMENTS

A. Provide photopolymer signage that conforms to the requirements of all regulatory agencies holding jurisdiction.

B. Provide glow in the dark, photo luminescent material that complies with applicable provisions of ASTM E 2073-02 and DIN 67510. Photo luminescent material must have up to eight hours of luminance.

C. Requirements:
   1. Comply with all applicable provisions of the 2010 ADA Standard for Accessible Design.
   2. Character Proportion: Letters and numbers on signs must have a width-to-height ratio between 3:5 and 1:1 and a stroke width-to-height ratio between 1:5 and 1:10.
   3. Color Contrast: Characters and symbols must contrast with their background - either light characters on a dark background or dark characters on a light background.
   4. Raised Characters or Symbols: Letters and numbers on signs must be raised 1/32 in (0.8 mm) minimum and be sans serif characters. Raised characters or symbols must be at least 5/8 in (16 mm) high but no higher than 2 in (50 mm). Symbols or

pictograms on signs must be raised 1/32 in (0.8 mm) minimum.

5. Symbols of Accessibility: Accessible facilities required to be identified must use the international symbol of accessibility.
6. Braille: Grade II with accompanying text.

D. Fire Performance Characteristics:

1. Provide photopolymer signage with surface burning characteristics that consist of a flame spread of 75 and a smoke development of 120 when tested in accordance to UL 723 (ASTM E 84).
2. Self-Extinguishing: Provide photopolymer signage with a CC1 classification for .060 in thick material when tested in accordance with the procedures in ASTM D 635, Standard Test Method for Rate of Burning and/or Extent and Time of Burning Plastics in a Horizontal Position.
3. Vertical Burn: Provide photopolymer material that is classified as 94V-2 for material .118 in thick or greater and 94HB for material .118 in thick or less when tested in accordance with UL 94, Tests for Flammability of Plastic Materials for Parts in Devices and Appliances.
4. Self-Ignition Temperature: Provide photopolymer material that has a self-ignition temperature of 800 degrees F (427 degrees C) when tested in accordance with ASTM D 1929.

1.5 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

1. Product Data: Manufacturer's data sheets on each product to be used, includingPreparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

B. Shop Drawings: Detail drawings showing sizes, lettering and graphics, construction details of each type of sign and mounting details with appropriate fasteners for specific project substrates.

C. Manufacturer's Installation Instructions: Printed installation instructions for each signage system.

D. Message List: Signage report indicating signage location, text and sign type.

E. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and available pictograms, characters, and Braille indications.

F. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and typical pictograms, characters, and Braille indications.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum two years documented experience in work of this Section.

B. Installer Qualifications: Minimum two years documented experience in work of this Section.

C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and

application workmanship.

1. Furnish signs designated by Architect.
2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
3. Refinish mock-up area as required to produce acceptable work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in unopened factory packaging.

B. Inspect materials at delivery to verify there are no defects or damage.

C. Store products in manufacturer's original packaging until ready for installation in climate controlled location away from direct sunlight.

D. Store and dispose of solvent-based materials, and materials used with solvent-based materials in accordance with requirements of local authorities having jurisdiction.

1.8 PROJECT CONDITIONS

A. Install products in an interior climate controlled environment.

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

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Nova Polymers, Inc., which is located at: 8 Evans St. Suite 201; Fairfield, NJ 07004; Toll Free Tel: 888-484-NOVA (6682); Email:request info (info@novapolymers.com); Web:www.novapolymers.com

1. Acceptable Fabricator: Ability Plastics, 8721 Industrial Drive, Justice, Illinois 60458. Phone: (800) 323-2722. Email:sales@abilityplastics.comWeb:www.abilityplastics.com.
2. Acceptable Fabricator: Acorn Sign Graphics, PO Box 11664, Richmond, Virginia 23230. Phone: (804) 726-6999. Email:info@acornsign.com. Web:www.acornsign.com.
3. Acceptable Fabricator: Acumen Visual Group, 30 Riviera Drive Markham ON Canada L3R 5M1 Phone: +1 905-947-0770 Web:www.ideasbuilt.ca.
4. Acceptable Fabricator: AGS, 302 Commerce Drive, Exton, PA 19341. Phone: (610) 363-8150. Email:info@agsinfo.com. Web:www.agsinfo.com.
5. Acceptable Fabricator: Advanced Signing LLC, 4 Industrial Park Road, Medway, MA 02053. Phone: (508) 533-9000 ext. 3026. Email:gpiper@advancedsigning.com. Web:www.advancedsigning.com.
6. Acceptable Fabricator: APCO Graphics, Inc., 388 Grant St. SE, Atlanta, GA 30312. Phone (800) 215-4039. Web:www.apcographics.com
7. Acceptable Fabricator: ASI CT - East Berlin, CT, 100 Clark Dr., East Berlin, CT. Phone: (860) 828-3331. Web:asisignage.com/ASIHartford/tabid/211/Default.aspx.
8. Acceptable Fabricator: ASI, Dallas - Dallas, TX, 8181 Jetstar Drive, Suite 110, Irving, TX 75063. Phone:(972) 915-3800. Web:www.asisignage.com/ASIDallas/tabid/243/Default.aspx.
9. Acceptable Fabricator: ASI, Iowa - Grinnell, IA, 1219 Zimmerman Dr., Grinnell, IA 50112. Phone: (641) 236-6616. Web:www.asisignage.com/ASIIowa/tabid/239/Default.aspx.
10. Acceptable Fabricator: ASI, New Orleans, 1101 24th St., Kenner, LA 70062. Phone: (504) 704-1000. Web:www.asisignage.com/ASINewOrleans/tabid/236/Default.aspx.

11. Acceptable Fabricator: Bell Company, 106 Morrow Ave., Trussville, AL 35173-0092. Phone: (800) 828-3564. Email:sales@bellcoinc.com. Web:www.braillebybell.com.
12. Acceptable Fabricator: Boyd Sign Systems, 3901 S Kalamath St, Englewood, CO 80110. Phone: (800) 333-3190. Email:signs@boydsignsystems.com. Web:www.boydsignsystems.com.
13. Acceptable Fabricator: Cab Signs, 38 Livonia Ave, Brooklyn, NY 11212. Phone: (800) 394-1690. Email:sales@cab-signs.com. Web:www.cab-signs.com.
14. Acceptable Fabricator: Cadwell Signs, 4 Kuniholm Drive, Holliston, MA 01746. Phone: (508) 429-3100. Web:www.cadwellsigns.com.
15. Acceptable Fabricator: Creative Sign Designs, 12801 Commodity Place, Tampa, FL 33626 Phone: (800) 804-4809. Email:sales@creativesigndesigns.com. Web:www.creativesigndesigns.com.
16. Acceptable Fabricator: Dixie Graphics, 636 Grassmere Park, Nashville TN 37211 Phone: 615-832-7000 Email:info@dixiegraphics.com. Web:www.dixiegraphics.com.
17. Acceptable Fabricator: Eye Candy Signs, 2705 Agricola St, Halifax Nova Scotia, Canada B3k 4C7. Phone: (902) 429-8281. Email:contact@eyecandysigns.ca. Web:www.eyecandysigns.ca.
18. Acceptable Fabricator: Graphic Components, 3125 Spring Garden St, Greensboro, NC 27407. Phone: (336) 542-2128. Email:vince@graphiccomponents.com. Web:www.graphiccomponents.com.
19. Acceptable Fabricator: GraphTec, Inc., 8411 Rannie Road, Houston, TX 77080. Phone: (713) 690-9999. Email:blake@graphtecinc.com. Web:www.graphtecinc.com.
20. Acceptable Fabricator: InPro Corporation, S80 W18766 Apollo Drive, Muskego, WI 53150. Phone: (800) 222-5556. Email:mbudnik@inprocorp.com. Web:www.inprocorp.com.
21. Acceptable Fabricator: JRT Industries, 36 Tanderra Drive, Sharon, QLD 4670 Australia. Phone: (07) 41577003. Email:info@jrtindustries.com.au. Web:www.jrtindustries.com.au.
22. Acceptable Fabricator: Kroy Sign Systems, 7575 E Redfield Rd, Suite 113, Scottsdale, AZ 85260. Phone: (800) 950-5769. Email:signs@kroysignsystems.com. Web:www.kroysignsystems.com.
23. Acceptable Fabricator: The Look Company Middle East, 125 Al Waab Street, Doha, Qatar. Phone: +974 4447 5865 Email:sales@thelookcompany.com. Web:www.thelookcompany.com.
24. Acceptable Fabricator: Marvel Sign and Display, Inc., 99 Rodinea Road, Unit 1, Vaughan, Ontario L6A 1R3, Canada. Phone: (905) 856-6920 Email:alan@marvelsigns.ca. Web:www.marvelsigns.ca.
25. Acceptable Fabricator: Neiman & Company, 6842 Valjean Ave., Van Nuys, CA 91406. Phone: (818) 781-8600. Email:signs@neimanandco.com. Web:www.neimanandcompany.com.
26. Acceptable Fabricator: Nova Polymers, 15348 U.S. Rt. 127 EW, Bryan, OH 43506. Phone: (888) 484-6682. Email:info@novapolymers.com. Web:www.novapolymers.com.
27. Acceptable Fabricator: Park Place Sign Systems, Inc., 2019 30th Street, Hannibal, MO 63401. Phone: (573) 221-1360. Email:sales@parkplacesign.com. Web:www.parkplacesign.com.
28. Acceptable Fabricator: Poblocki Sign Company LLC, 922 S 70th St., Milwaukee, WI 53214. Phone: (414) 453-4010. Web:www.poblocki.com
29. Acceptable Fabricator: Sign Pro, 60 Westfield Dr, Plantsville, CT 96479. Phone: (860)

229-1812. Email:pete@signpro-usa.com. Web:www.signpro-usa.com.

30. Acceptable Fabricator: Spring Moon Signs, 105 Venetian Blvd, St. Augustine, FL 32095. Phone: (888) 526-6205. Email:smsd1969@gmail.com. Web:www.springmoonsigns.com.
31. Acceptable Fabricator: Tube Art Group, 11715 SE 5th Street, Bellevue, WA 98005. Phone: (206) 223-1122 Email:mwoods@tubeart.com. Web:www.tubeart.com.
32. Acceptable Fabricator: Welch Signs, 7 Lincoln Ave., Scarborough, ME 04074. Phone: (800) 635-3506. Web:www.welchusa.com.
33. Acceptable Fabricator: WSI Sign System Ltd. & KING Architectural Products, 31 Simpson Road, Bolton - Ontario L7E 2R6. Phone: (905) 857-2804. Web:www.king-ap.com.

B. Substitutions: Not permitted.

C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 SIGNAGE - GENERAL

A. It is the intent of these specifications to establish a sign standard for the Owner including but not limited to, wall-mounted directional signs, primary room identification, restrooms, conference rooms and all code compliant Braille signage. All rooms, stairs, restrooms, etc. to have signage. Coordinate names and numbers with Architect.

B. Comply with all applicable provisions of the 2010 ADA Standard for Accessible Design codes that apply to the State and Local jurisdiction of the project.

C. If required text and graphics are not indicated in specification or on drawings, obtain Owner's instructions as to text and graphics prior to preparation of shop drawings.

D. Typography: See Drawings. Copy shall be a clean and accurate reproduction of typeface(s) specified. Upper and lower case and all caps as indicated in Sign Type drawings and Signage Schedule. Letter spacing to be set by manufacturer.

E. Arrows, symbols and pictograms will be provided in style, sizes, colors and spacing as indicated in drawings for each sign system.

F. Braille:
1. Grade 1 Braille.

G. Design:
1. Novacryl PT-119 (example below – colors and graphic to be selected). Provide Room name and braille, Room number and braille, interchangeable personnel title/name slot, wood accent and decorative accent vertical strip. Provide matching, coordinating signage, with room graphic for rooms such as restrooms, stairs, etc.

2.3 INTERIOR SIGNAGE

A. Panel Material: Novacryl PT Series Photopolymer
1. Composition: 0.032 inch (0.8 mm) thick moisture resistant, non-glare interior nylon photopolymer on ultraviolet resistant clear PETG sign base, single piece construction. Laminated photopolymers, added-on characters, and engraved characters are not acceptable.
2. Sustainable Certification: Minimum 40 percent pre-consumer recycled content.
3. Base thickness: 0.060 inch (1.5 mm) Non-glare PETG. ** NOTE TO SPECIFIER ** Insert color. Delete color provision not required.
4. Type and Color: To be selected from manufacturer's full color range by Architect.
5. Size: _10” x 14” minimum____
6. Surface burning characteristics: Flame spread/smoke developed rating less than 75/120, tested to ASTM E 84 and UL 723.
7. Rate of burning: Tested to ASTM D 635 at nominal 0.060 inch (1.5 mm) thickness with resulting Classification CC1.
8. Vertical burning: Tested to UL 94, classified as 94V-2 in thickness of 0.118 inch (3.0 mm) or greater and 94HB in thicknesses less than 0.118 inch (3.0 mm).
9. Self-ignition temperature: 800 degrees F (427 degrees C), tested to ASTM D 1929.

2.4 ACCESSORIES

A. Adhesive:
   1. Type recommended by sign manufacturer.
   2. Maximum volatile organic compound (VOC) content: 70 grams per liter.

B. Tape: Double sided, waterproof, pressure sensitive.

C. Fasteners: Chrome plated screws.

D. Fasteners: Brass screws.

E. Fasteners: Stainless steel screws.

2.5 FABRICATI0N

A. Fabricate panel material in accordance with manufacturer's instructions and approved shop drawings.

B. Fabricate signs by photo polymer process using film negatives to produce characters and graphics in contrasting color, raised. Refer to Signage Schedule.

C. Characters:
   1. Height: Refer to Signage Schedule.
   2. Style: Refer to Signage Schedule.
   3. Width to height ratio: Refer to Signage Schedule.
   4. Stroke width to height ratio: Refer to Signage Schedule.

D. Pictograms: Refer to Signage Schedule.

E. Provide Braille Grade indications for each character.

F. Frames:
   1. Miter corners; fit to hairline joint.
   2. Secure frame to sign with adhesive.

G. Changeable Slide Inserts: Clear PETG sheet cover with slot behind for insertion of changeable slide strip, removed from side.

PART 3 EXECUTION

3.1 EXAMINATION

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

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

3.4 PROTECTION

A. Protect installed products until completion of project.
B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF
SECTION

SECTION 12 20 00

WINDOW SHADES

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 this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Provide Hunter Douglas “Designer Roller Shades” on all windows. Shades to be equipped with Wood wands and cordless lift. Color to be selected from full range of “Denton” colors.

1.3 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Product data for the shades.

C. Samples for verification purposes.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide the following:

1. Hunter Douglas or equal. Color to be selected.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Comply with manufacturer's instructions applicable to products and application indicated.

A. Enclosed headrail mounted between gypsum board returns into steel studs.

END OF SECTION

SECTION 12 36 61.19

QUARTZ AGGLOMERATE (NATURAL QUARTZ AND RESIN COMPOSITE) COUNTERTOPS

Corian® Quartz (formerly known as Zodiaq®)manufactured by DuPont, (E. I. du Pont de Nemours and Company), Chestnut Run Plaza 735, 974 Centre Road, P.O. Box 2915, Wilmington, DE 19805, Toll-Free: (800) 426-7426, Web site: www.corianquartz.com; www.surfaces.dupont.com

Note: The purpose of this product guide specification is to assist the Specifier in specifying Corian® Quartz (formerly known as DuPont™ Zodiaq® Quartz Surface). Refer to Corian® Design (800-426-7426) and/or Zodiaq® *Technical Bulletins for additional information. Use this guide specification for interfacing with architectural millwork and/or trim components. Corian® Quartz is fabricated like granite.*

Design Professionals or Architects need to review Sections and edit to fit the needs of the project and local building code(s). Throughout the guide specification, there are Specifier Notes in blue to assist in the editing of the file. User input areas are enclosed within brackets, [_____].

This product guide specification is written in accordance with the Construction Specifications Institute (CSI) current versions Masterformat®, SectionFormat™ and PageFormat™. References are in accordance with the 2014 Revision of Masterformat®. The Specifier needs to coordinate numbers and titles with sections included for the project.

PART 1 - GENERAL

1.01 SUMMARY

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

1.02 THIS SECTION INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING HORIZONTAL AND TRIM QUARTZ SURFACING PRODUCT TYPES:

1. Countertops

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2. Countertops with integrated sinks and lavatory bowls
3. Countertops with undermount sinks and lavatory bowls
4. Countertops with drop-in sinks and lavatory bowls
5. Vanity tops
6. Other interior counter or surfacing applications as shown on drawings

1.03 RELATED REQUIREMENTS

A. Section 06 10 00 – Rough Carpentry
B. Section 22 00 00 – Plumbing

1.04 REFERENCES

A. CSA B45/IAPMO ANSI Z124 (previously ANSI Z124.6 – Plastic Sinks).
   1. CSA B45/IAPMO ANSI Z124 Section 5.7.1.3 – Point Impact tests.
B. ASTM C170 – Standard Test Method for Compressive Strength of Dimension Stone.
C. ASTM C370 – Standard Test Method for Moisture Expansion of Fired Whiteware Products.
D. ASTM C373 – Standard Test Method for Water Absorption, Bulk Density, Apparent Porosity, and Apparent Specific Gravity of Fired Whiteware Products, Ceramic Tiles, and Glass Tiles.
E. ASTM C501 – Standard Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser.
F. ASTM C1026 – Standard Test Method for Measuring the Resistance of Ceramic Tile to Freeze-Thaw Cycling.
G. ASTM C1028 – Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method.
H. ASTM D570 – Standard Test Method for Water Absorption of Plastics.
I. ASTM D696 – Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30°C and 30°C with a Vitreous Silica Dilatometer.
J. ASTM D790 – Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
K. ASTM D792 – Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement.
L. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
M. ASTM G21 – Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
N. ASTM G22 – Standard Practice for Determining Resistance of Plastics to Bacteria.
O. CSA B45.5-11/IAPMO Z124-2011 – Plastic Plumbing Fixtures.
P. NEMA LD 3 – High Pressure Decorative Laminates.
   1. NEMA LD 3-3.3 – Light Resistance.
   2. NEMA LD 3-3.5 – Boiling Water Resistance.
   3. NEMA LD 3-3.6 – High Temperature Resistance.
   4. NEMA LD 3-3.8 – Ball Impact Resistance.
Q. NFPA (National Fire Protection Association) - NFPA 101®, Life Safety Code®.
R. NFPA 255 – Standard Method of Test of Surface Burning Characteristics of Building Materials.
S. ISO (International Organization for Standardization) - ISO 14001 – Environmental Management Systems.

T. UL (Underwriters Laboratories) - UL 723 – Standard Test Method for Surface Burning Characteristics of Building Materials.
U. ULC (Underwriters Laboratories of Canada) – ULC/CAN-S102 – Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
V. NSF (NSF International) NSF/ANSI Standard 51 – Food Equipment Materials.
W. New York City Construction Codes, Office of Technical Certification and Research, MEA (Materials and Equipment Acceptance), http://www1.nyc.gov/.
X. UL Environment/GREENGUARD - UL 2818 – Standard for Chemical Emissions for Building Materials, Finishes and Furnishings, Section 7.1.
Y. UL Environment/GREENGUARD - UL 2818 – Gold Standard for Chemical Emissions for Building Materials, Finishes and Furnishings, Section 7.1 and 7.2.
Z. UL 2824 – GREENGUARD Certification Program, Method For Measuring Microbial Resistance From Various Sources Using Static Environmental Chambers.
AA. SCAQMD (South Coast Air Quality Management District) VOC (Volatile Organic Content) Rule 1168 for Adhesive and Sealant Applications
BB. Star-K Kosher Certification (www.star-k.org).

1.05 SUBMITTALS

A. Submit product data for each type of product indicated.
   1. Submit manufacturer's product data on material characteristics, performance properties, fabrication instructions, installation instructions and maintenance instructions.
B. Shop drawings:
   1. Show location of each item; provide complete detailed and dimensioned plans and elevations, large-scale details, attachment devices and other components.
      a. Show the following:
         1) Full-size details, edge details, attachments, etc.
         2) Locations and sizes of furring, blocking, including concealed blocking and reinforcement specified in other Sections.
         3) Fabrication details for brackets.
         4) Locations and sizes of cutouts and holes for plumbing fixtures, faucets, soap dispensers, waste receptacle and other items installed in quartz surface.
         5) Locations and sizes of cutouts for sink installation and lavatory installation.
         6) Type of sealant.
         7) Type of adhesive.
         8) Seam locations.
C. Samples:
   1. For each type of product indicated:
      a. Submit minimum 2-inch-by-2-inch sample in specified color. For viewing pattern or veining, submit minimum 4-inch-by-4-inch samples.
      b. Cut sample and seam together for representation of seaming techniques.
      c. Indicate full range of color and pattern variation.
      d. Approved samples will be retained as a standard for work.
D. Product data:
   1. Indicate product description, fabrication information and compliance with specified performance requirements.

E. Fabricator/installer qualifications:
   1. Provide copy of certification number.
F. Certificates: Certify that products meet or exceed requirements.
   1. UL Environment– GREENGUARD and GREENGUARD Gold, current low emitting VOC certification of quartz surface and solid surface products.
   2. UL Environment– GREENGUARD and GREENGUARD Gold, current low emitting VOC certification for manufacturer's recommended adhesive and/or sealant.
   3. UL Environment – Mold Resistance Certification in accordance with UL 2824.
G. Fire test response characteristics:
   1. United States – Provide Class A surface burning characteristics as determined by testing products per UL 723 (ASTM E 84, NFPA 255) or another testing and inspecting agency acceptable to authorities having jurisdiction.
      a. Flame Spread Index: 25 or less.
      b. Smoke Developed Index: 450 or less.
   2. Canada – Provide with surface burning characteristics as determined by testing products by UL Canada per ULC S102 or another testing and inspecting agency acceptable to authorities having jurisdiction.
H. Maintenance data:
   1. Submit manufacturer's care and maintenance data.
   2. Include in project closeout documents.

1.06 QUALITY ASSURANCE

A. Qualifications:
   a. Shop employs skilled workers who custom fabricate products similar to those required for this project and whose products have a record of successful in-service performance.
B. Fabricator/installer qualifications:
   1. Work of this section shall be by a certified fabricator/installer, certified in writing by the manufacturer or designated representative.
C. Allowable tolerances:
   1. Variation in component size: ±1/8 inch (3 mm) over a 10 foot length.
   2. Location of openings: ±1/8 inch (3 mm) from indicated location.
   3. Minimum of 1/16 inch and a maximum of 1/8 inch (3 mm) clearance between quartz surfaces and each wall.
D. Coordination drawings:
   1. Shall be prepared indicating:
      a. Plumbing work.
      b. Electrical work.
      c. Miscellaneous steel for the general work.
      d. Indicate location of all walls (rated and non-rated), blocking locations and recessed wall items, etc.
   2. Content:
      a. Project-specific information, drawn accurately to scale.
      b. Do not base coordination drawings on reproductions of the contract documents or standard printed data.

c. Indicate dimensions shown on the contract drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements.
d. Provide alternate sketches to designer for resolution of such conflicts.
1) Minor dimension changes and difficult installations will not be considered changes to the contract.

3. Drawings shall:
a. Be produced in 1/2 inch scale for all fabricated items.
4. Drawings must be complete and submitted to the architect within 60 days after award of contract for record only.
a. No review or approval will be forthcoming.
b. Coordination drawings are required for the benefit of contractor's fabricators/installers as an aid to coordination of their work to eliminate or reduce conflicts that may arise during the installation of their work.

E. Job mock-up:
1. Prior to fabrication of architectural millwork, erect sample unit to further verify selections made under sample submittals and to demonstrate the quality of materials and execution.
2. Mock-up shall be [_____].
3. Build the mock-up to comply with the contract documents and install in a location as directed by the architect.
4. Notify the architect two weeks in advance of the date of when the mock-up will be delivered.
5. Should mock-up not be approved, re-fabricate and reinstall until approval is secured.
6. Remove rejected units from project site.
7. Mock-up, once approved, may become a part of the project and serve as a standard for judging quality of all completed units of work.

F. Pre-installation conference:
1. Conduct conference at project site to comply with requirements in Division 1.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver no components to project site until areas are ready for installation.
B. Store components indoors in clean and dry area prior to installation.
C. Handle materials to prevent damage to finished surfaces.
D. Follow manufacturer's safe handling and storage recommendations.
E. Provide protective coverings to prevent physical damage or staining following installation for duration of project.

1.08 WARRANTY

A. Provide manufacturer's 10-year warranty.
B. Damage caused by physical or chemical abuse or damage from excessive heat will not be warranted.

1.09 MAINTENANCE

A. Provide maintenance requirements as specified by the manufacturer.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Contract Documents are based on products manufactured by DuPont (E. I. du Pont de Nemours and Company). Provide Corian® Quartz, formerly known as Zodiaq® (basis of design) subject to compliance with the requirements.
   a. Address: Corian® Design, Corian® Quartz, Chestnut Run Plaza 735, 974 Centre Road, P.O. Box 2915, Wilmington, DE 19805.
   b. Phone: (800) 426-7426.
   c. Website: www.surfaces.dupont.com; www.corianquartz.com.
   d. Subject to compliance with the requirements, provide the following product: quartz surface from Corian® Design (basis of design).

B. Substitutions: Equals permitted.

2.02 MATERIALS

A. Material:
   1. Corian® Calacatta Novello Quartz material composed of ~93 % natural quartz with pigments and resin.
   2. Material shall have minimum physical and performance properties as specified.

B. Thickness:
   1. 3 cm (1-1/8 inch).

C. Edge treatment:
   1. Exposed Edge
      a. [SQUARE]
      b. As indicated.
   2. Appliance Edge.
      a. Finished.

D. Seam width:
   1. 1/16 inch nominal unless otherwise specified.

E. Sink mounting: Coordinate with all plumbing fixtures.
   1. Integrated.
   2. Undermount.
   3. Drop in.

F. Backsplash:
   1. Applied.

G. Endsplash:
   1. Applied.

H. Corian® Quartz Performance Properties (TYPICAL RESULTS):

1.	Flexural Strength	> 5,300 psi	ASTM D790
2.	Flexural Modulus	5.3–5.7 X 106 psi	ASTM D790
3.	Compression Strength (Dry)	27,300 psi	ASTM C170
4.	Compression Strength (Wet)	24,400 psi	ASTM C170
5.	Hardness	7	Mohs Hardness Scale
6.	Thermal Expansion	1.45 x 10-5 meter/meter deg C	ASTM D696
7.	Thermal Expansion	2.61 x 10-5 inch/inch deg F	ASTM D696
8.	Colorfastness	Passes	NEMA LD 3-3.3
9.	Gloss (60° Gardner)	45–50	ANSI Z124
10.	Wear and Cleanability	Passes	CSA B45.5-11/IAPMO Z124-2011

11.	Stain Resistance	Passes	CSA B45.5-11/IAPMO Z124-2011
12.	Fungal Resistance	No observed growth on product	ASTM G 21
13.	Bacterial Resistance	No observed growth on product	ASTM G 22
14.	High Temperature Resistance	None to slight effect	NEMA LD 3-3.6
	a. Temperature, 356 deg F		
15.	Boiling Water Resistance	None to slight effect	NEMA LD 3-3.5
16.	Freeze-Thaw Cycling	Unaffected	ASTM C1026
17.	Point Impact	Passes	ANSI Z124.6.4.2
18.	Ball Impact Resistance	No failure at 164 inches	NEMA LD 3-3.8
	a. Slabs, No fracture,1/2 lb. ball – 2cm and 3 cm		
19.	Static Coefficient of Friction	0.89 (Dry), 0.61 (Wet)	ASTM C1028
20.	Abrasion Resistance	139	ASTM C501
21.	Density	2.4 g/cm3	ASTM D792
22.	Water Absorption, Long-term	0.12%	ASTM C373
23.	Water Absorption, Short	< 0.04%	ASTM C373
24.	Moisture Expansion	< 0.01% average	ASTM C370
25.	Flammability	Class A, all colors	NFPA 101® Life Safety Code
26.	Flame Spread Index	FSI 0 for 3 cm	UL 723
27.	Flame Spread Index	FSI $\leq$ 5 for 2 cm	UL 723
28.	Smoke Developed Index	SDI $\leq$ 40 for 3 cm	UL 723
29.	Smoke Developed Index	SDI $\leq$ 75 for 2 cm	UL 723
30.	Flame Spread Value	0 for 3 cm	CAN/ULC-S102
31.	Flame Spread Value	5 for 2 cm	CAN/ULC-S102
32.	Smoke Developed Value	10 for 3 cm	CAN/ULC-S102
33.	Smoke Developed Value	50 for 2 cm	CAN/ULC S102
34.	Nominal Thickness	2 cm and 3 cm	

35. Nominal Weight per square foot for 2cm thickness is 10 pounds
36. Nominal Weight per square foot for 3cm thickness is 15 pounds

I. CORIAN® QUARTZ (ZODIAQ®) CERTIFICATIONS and APPROVALS:
   1. New York City Material Equipment Acceptance Number for DuPont™ Zodiaq® is 431-00-M.
   2. NSF/ANSI Standard 51, Listed by NSF.
   3. UL Environment/GREENGUARD Certified.
   4. UL Environment/GREENGUARD Gold Certified.
   5. UL 2824 - Mold Resistant.
   6. Kosher, Listed by Star-K.

2.03 ACCESSORY PRODUCTS

A. Mounting Adhesives:
   1. 100 percent Silicone Sealant.

B. Seam Adhesive:
   1. Corian® Joint Adhesive to create color-coordinated seam.

C. Sink/bowl mounting hardware:
   1. Manufacturer's approved sink setters, bowl clips and fasteners for attachment of undermount sinks/bowls.

2.04 FABRICATION

A. Fabricate components to greatest extent practical to sizes and shapes indicated, in accordance with approved shop drawings and manufacturer's printed instructions and technical bulletins.
B. Form joints between components using manufacturer's standard joint adhesive.
    a. Reinforce as required.
    2. Provide factory cutouts for plumbing fittings and bath accessories as indicated on the drawings.
    3. Rout and finish component edges with clean, sharp returns.
    4. Rout cutouts, radii and contours to template.
C. Smooth edges.

2.05 FINISHES

A. Select from the manufacturer's standard color chart.
    1. Color:
        a. [Calacatta Novello]
        b. [ ]

PART 3 - EXECUTION

3.01 INSTALLATION

A. General
    1. Install countertop materials in accordance with manufacturer's instructions.
    2. Additional weight from attached sink or lavatory will affect maneuverability of tops during transportation and installation.
    3. Carefully plan work to avoid damaging finished tops during transportation and installation.
B. Install components plumb and level, in accordance with approved shop drawings and product installation details.
    1. Tops:
        a. Flat and true to within 1/8 inch (3 mm) of a flat surface over a 10-foot length.
        b. Allow a minimum of 1/16 inch to a maximum of 1/8 inch (3 mm) clearance between surface and each wall.
        c. Form field joints using manufacturer's recommended adhesive (Corian® Joint Adhesive), with joint widths no greater than 1/8 inch (3 mm) in finished work.
        d. Keep components and hands clean when making joints.
C. Sinks/Lavatory Bowls:
    1. Adhere undermount sinks/lavatory bowls to countertops using manufacturer's recommended adhesive and mounting hardware.
    2. Adhere drop-in sinks/bowls to countertops using silicone sealant and manufacturer-recommended adhesives.
D. Provide backsplashes and endsplashes as indicated on the drawings.
    1. Adhere to countertops using silicone sealant.
        a. Keep components and hands clean when working with silicone sealant.

3.02 CONNECTIONS:

A. Make plumbing connections in accordance with Division 22.
B. Make electrical connections in accordance with Division 26.

3.03 CLEANING AND PROTECTION

A. Keep components and hands clean during installation.
B. Remove adhesives, sealants and other stains in accordance with manufacturer's instructions.
   1. Clean exposed surfaces in accordance with manufacturer's instructions.
   2. Components shall be clean on date of substantial completion.
      a. Protect surfaces from damage until date of substantial completion.
   3. Replace or repair damaged work in a satisfactory manner.

3.04 SCHEDULE

A. Countertops:
   1. Location: [See Drawings]
   2. Quartz surface is adhesively joined with exposed seams.
      a. Color: [Calacatta Novello]
      b. Edge Details [Square]
      c. Backsplash [6" square]
      d. Sidesplash [6" square]
      e. Sink [coordinate with Plumbing Drawings]

END OF SECTION

PART 1 - GENERAL

1.01 WORK INCLUDED

A. The work included in this section includes furnishing all labor, equipment and materials required to furnish and install a complete wet-pipe sprinkler system in all heated spaces or required for the proper completion of the sprinkler systems in conformance with the applicable codes and regulations. Work shall include all equipment, labor, taps, etc. for complete installation from street. Include fire vault, back-flow preventer, electronic monitoring, fire tap, fire line, and all other equipment required by NFPA and Fire Marshal and for complete installation.

B. Provide wet-pipe sprinkler system in all occupied spaces, chases, shafts, plenum spaces, concealed areas. Heads in all inmate-occupied spaces to be detention heads (Raven Pendant head TFP651 or equal). Heads in all other areas to be concealed with white escutcheon plates.

C. Connect to existing system. Provide shop drawings and submittal for all work. Test existing system to determine attributes needed for added heads.

1.02 FLOW TEST

A. The Contractor shall be responsible for the complete design of the systems and obtaining flow and pressure test results from the governing authority.

B. The Contractor shall base calculations on an approved and certified flow test from the governing authority indicating flow, residual and static pressures, exact location of source with elevations shown in contract documents.

1.03 REQUIREMENTS

A. The fire protection system includes the designing, furnishing of material and installation of the approved systems as herein described. If the Owner's insurance underwriter's requirements are higher, they shall be used. The design, hydraulic calculation, equipment, materials, installation, and workmanship shall be in strict accordance with NFPA Codes and Standards and the Owner's insurance underwriter. The systems design and installation shall be coordinated with all piping, electrical equipment, duct-work and all other trades. The system shall be free of operating and maintenance difficulties. Devices and equipment shall be new and shall be make and type listed by Underwriter's Laboratories, INC. or approved by Factory Mutual.

1.04 CONTRACTOR QUALIFICATIONS

A. The Fire Protection Contractor shall be state certified and have a minimum of four years experience in the field of fire protection system and design and installation.

1.05 QUALITY ASSURANCE

A. The work shall be in accordance and conform to the requirements of the National Fire Protection Association, local Fire Marshal, local water authority and Owner's Insurance Underwriter.

1.06 SUBMITTALS

A. Submit equipment cuts and shop drawings for all equipment and specialties supplied. See section 15 010, paragraph 2.03.

B. Submit for review a complete set of shop drawings bearing evidence of contractor=s registration and certification, Underwriter's approval and/or comments and Fire Marshal's approval,

C. The shop drawings shall be in accordance with the requirements for "Working Plans" as specified in NFPA 13. No work shall begin until design of the system and various components are approved.

PART 2 - PRODUCTS

2.01 PIPE AND FITTINGS

A. Aboveground

1. Pipe: Schedule 40 black steel conforming to ANSI / ASTM A120 and ASTM A795. Schedule 10 black steel conforming to ASTM A-135 may be used for pipe sizes greater than 2 inches.
2. Fittings: Screwed fittings shall be 175 lb. black cast iron conforming go ANSI B16.4 and cast iron flanges and fittings conforming to ANSI B16.3, grooved fittings U.L. listed in accordance with NFPA 13.
3. Hangers: Suitable U.L. listed hangers shall be provided in accordance with NFPA 13.

B. Underground

1. Pipe: Ductile iron, plastic or cement lines, conforming to AWWA Standards and NFPA 24.
2. Fittings: Ductile iron mechanical joints conforming to ANSI / AWWA C110 / A21.10.

2.02 VALVES

A. All valves shall be positioned for maximum accessibility and operation. Valves shall be U.L. listed and F.M. approved.

B. Gate Valves: 2-1/2" and larger, OS&Y type, cast iron body, solid wedge, flanged ends, 175 pound W.W.P. Valves shall be Stockham B-634 or approved substitute.

C. Gate Valves: For mechanical joint pipe, OS&Y type, cast iron body, ASTM A-120 Class B, 175 pound W.W.P. Valves shall be Stockham G-635-0 or approved substitute.

D. Check Valves: 2-1/2" and larger, horizontal swing type, cast iron body, rubber disc, flanged ends, 175 pound W.W.P. Valves shall be Stockham B-305-B or approved substitute.

E. Wafer Check Valves: Cast iron body, ASTM A-126, cast bronze seating ring, stainless steel hinge. Valves shall be Mueller A-2102 or approved substitute.

F. Globe Valves: Cast iron body, rising steam, composition disc, threaded ends, 175 pound W.W.P. Valves shall be Stockham B-13-T or approved substitute.

G. Angle Valves: Bronze body, rising stem, composition disc, threaded ends, 175 pound W.W.P. Valves shall be Stockham B-222 or approved substitute.

H. Butterfly Valves: 1" to 2-1/2", bronze body, stainless steel disc, 175 pound W.W.P., supervisory stainless steel disc, 175 pound W.W.P., supervisory switch built-in. Valves shall be Milwaukee BB-CSO1 or approved substitute.

I. Wet Pipe Alarm Valve: Vertical installation, retard chamber, alarm switch, testing by-pass, system drain and necessary pipe, fittings, gauges and accessories required for a complete installation. Valve shall be Viking Model G-1 or approved substitute.

J. Dry-Pipe Alarm Valve: Vertical installation, with alarm switch, drip check valve, drain cup, reset bar, and alarm test shut-off valve, drain check valve and all other accessories, gauges, pipe and fittings for a complete installation. Valve shall be Viking Model E or other approved substitute.

K. Pre-action Alarm Valve: Vertical installation, single interlock, test drain valve, auxiliary drain valve, drain cup, drip check, alarm test shut off valve, strainer orifice check valve, pressure operated relief valve, priming valve, emergency release, priming pressure gauge and valve and all other gauges, piping and fittings for a complete installation. Valve shall be Viking Model E or approved substitute.

2.03 SIAMESE CONNECTION

A. Wall Type: Three way, 2-1/2" x 2-12" x 4" connections, integral clappers, caps and chains, polished chrome plated finish. Hose threads to meet local fire department requirements. Nameplate to read “AUTOMATIC SPRINKLER”. Siamese shall be Potter-Roemer 5021 or approved substitute.

2.04 SWITCHES

A. Flow Switch: Vane-type, tamper-proof, pneumatic retard device, adjustable time delay, U.L. listed, F.M. approved. Switch shall be Potter-Roemer 6200 or approved substitute.

B. Supervisory Switch: Monitor the open position of valve and have two sets of single pole, double throw suitable for 120 volt operation. Switch shall be Potter-Roemer 6220 or approved substitute.

2.05 ALARMS

A. Water Motor Alarm: Aluminum, steel or stainless steel gong, water operated, mechanical striking device, red enamel finish, U.L. listed, F.M. approved. Alarm shall be Automatic Sprinkler Corp. Model “F” or approved substitute.

B. Electric Bell Alarm: 6" diameter, aluminum, steel or stainless steel, electric motor, 120V, red enamel finish, U.L. listed, F.M. approved. Alarm shall be Potter-Roemer 6230 or approved substitute.

2.06 PRESSURE GAUGES

A. Pressure Gauges: Polished brass case, 3-1/2" dial, glass enclosure plate, phosphor bronze bourdon tube, 0- to 300 psi, brass 1/4" male N.P.T. connection, lever handle union cock, suitable for air and water. Gauges shall be Potter-Roemer 6240 or approved substitute.

2.07 AIR COMPRESSORS

A. Electric, motor-driven, air-cooled, single stage, oil-less, check valve, pressure and moisture under-loader and pressure switch, 1/4 horsepower. Compressor shall be Viking Model D-1 or approved substitute.

2.08 PRE-ACTION CONTROL PANEL

A. Control panel shall be fully automatic with relays, timer, key type switches, alarm and trouble lights, assembled, wired and tested at the factory. Assembly shall be F.M. and U.L. approved. Panel shall have a printed circuit board and completely factory wired ready to make connections

2.09 BATTERY CHARGER/POWER SUPPLY:

A. Shall be an automatic switching float equalize battery charger with a capacity to supply continuous loads of 50% of the charger capacity, charger to include volt meter, ammeter, AC and DC fuses, modular construction, remote sensing terminals, preset float and equalize level for specific battery types, isolated output, hermetically sealed integrated circuits and semi-conductors, and malfunction alarm.

2.10 STANDBY BATTERY:

A. Shall be sealed construction, high gloss red interior and exterior, 14 gallon steel enclosure, 12 volt, gelled electrolyte type designed for float / standby service. Shall be capable of providing 24 hour backup to system components.

2.11 DETECTORS

A. Shall be ionization (or rate of rise heat) detectors, cross zoned such that control panel is activated by two adjacent detectors within a zone. Detectors shall be wired normally open with a supervised circuit. Detectors shall be spaced per the manufactor's listing. Detectors shall be the same as fire alarm system. See Division 16.

2.12 SPRINKLERS –

A. Vandal Resistant Institutional Sprinkler heads at all Security Ceilings : Bronze construction, 2" orifice, polished chrome finish. Sprinklers shall be Viking Model VK650 or approved substitute.

B. Pendent, Recessed Ceiling Plate (non-public areas): Bronze construction, 2" orifice, polished chrome finish. Sprinklers shall be Viking Model M or approved substitute.

C. Pendent, Concealed - All Public (hallways, open stairwell, and all gypsum board ceiling areas) : Bronze construction, 2" orifice, round (white) (brass) (polished chrome plated) cover with spring. Sprinklers shall be Viking Horizon Mirage or approved substitute.

D. Side-wall sprinklers at Courtroom on Second Floor. At the top of the wood paneling, on each side of the Courtroom, provide a slim-line enclosure in which to install side-wall sprinklers. Sidewall sprinklers to concealed-type with custom color plate.

E. Spare Sprinkler Cabinet: Steel construction, red enamel finish, hinged door and catch. Cabinet shall be stocked with spare sprinklers and respective wrenches per NFPA 13. Cabinet shall be Potter-Roemer 6162 or approved substitute.

G. Sprinkler Head Guard: Welded wire cage, red enamel finish. Guard shall be Potter-Roemer 6160 or approved substitute.

G. Sprinkler heads shall be U.L. listed and F.M. approved for fire protection service.

H. Temperature ratings of sprinklers shall comply with NFPA 13.

PART 3 - EXECUTION

3.01 GENERAL

A. All areas shall be sprinkled as required by NFPA 13, Fire Marshal and Owner=s Insurance Underwriter including above and below large ductwork, attic spaces, etc.

B. Sprinkler head shall be symmetrically located as required to provide proper coverage and to avoid interference with lights, diffusers, grilles, or other ceiling mounted equipment. Where sprinkler heads are located in a ceiling tile, the head pattern shall be symmetrical and the head pattern shall bear the same relationship to the general ceiling pattern, and lights throughout. Heads located in ceiling tile shall be centered in the tile.

C. Inspector test connection and flushing connections shall be provided per NFPA 13.

3.02 PROCEDURE FOR PIPE JOINTS

A. Welding: All welding of pipe shall conform to American Standard Code for Pressure Piping ANSI B31.1, Section 6 Fabrication Details, Chapter 4 Welding of Pipe Joints. Refer to NFPA 13 for welders qualifications and welding procedures.

B. Threaded Pipe Connections: Ends of pipe shall be cleaned and reamed; joints shall be made with an oil base non-solvent pipe compound applied to male threads only.

C. Grooved Coupling Connections: Joined in strict accordance with manufacturer=s instructions.

3.03 TESTS

A. All piping shall be hydrostatically test at 200 PSI for two hours before concealing or placed in service.

3.04 INSTALLATION

A. Inside piping shall be installed in accordance with NFPA 13. Revision of piping locations because of conflict requiring field changes shall be coordinated with the Architect.

B. Sleeves at concrete slabs, walls, partitions and other appurtenances shall be provided as specified under Section 15 050.

C. All piping shall be arranged to drain the main riser or suitable auxiliary drains or plugged outlets in accordance with NFPA 13.

D. Escutcheon plates having a finish painted to match the ceiling shall be provided for all exposed wall and ceiling penetrations. Submit samples for approval.

E. Underground piping shall be installed in accordance with NFPA 24. All tees, plugs, caps and bends shall be anchored with clamps and tie rods or other approved means to prevent movement.

F. The Contractor's Material and Test Certificates for Aboveground Piping and Underground Piping shall be satisfactorily executed and submitted in accordance with NFPA 13 : 1-10.

G. A placard shall be permanently affixed at each main riser in accordance with NFPA 13 : 7-1.2 indicating the location and the design density, including the flow rate and residual pressure demand at the base of riser.

END OF SECTION

SECTION 23 05 00

GENERAL MECHANICAL PROVISIONS

PART 1 - GENERAL

1.01 CONDITIONS OF THE CONTRACT

A. Work included under this section of the specifications is subject to the provisions of the Contract Documents, General and Special Conditions.

1.02 SCOPE

A. This section of the specifications describes materials and equipment to be incorporated into the plumbing, heating, ventilation, and air conditioning systems and requirements for performing related work. The contractor shall coordinate his work with other crafts to avoid conflicts.

1.03 WORK INCLUDED

A. The work covered by this section includes providing all labor, equipment and materials as specified herein, shown on the drawings or required for a complete and satisfactory installation.

1.04 RELATED WORK SPECIFIED IN OTHER SECTIONS

A. Division 1: General Requirements.

B. Cutting and repairing of walls, ceilings, roofs and structure, except as specified herein.

C. Painting, except as specified herein.

D. Providing electric wiring systems for power, interlock, remote starting, and control service except as specified herein.

E. Installing motor starters and thermal overload switches.

F. Installing remote push button stations and breakglass stations.

G. Casework.

1.05 CODES AND STANDARDS

A. Perform work in accordance with local, state, and federal regulations. Code requirements are minimum and shall be complied with at no additional cost to owner.

B. In event of a discrepancy between contract documents and governing codes, comply with the codes. It will be assumed that such discrepancy was noted and cost of adjustment included in the bid price. Before starting work, submit to architect in writing a description of such adjustments or changes as may exist.

C. Where requirements of the contact documents exceed code requirements, perform work in accordance with the contract documents.

D. The following shall be adhered to as a minimum:

1. Standard Building Code, 1994 Edition.
2. NFPA Standard 90A, 1996 Edition.
3. NFPA Standard 70 (Electrical Code), 1991 Edition.
4. SMACNA HVAC Duct Construction Standards, Latest Edition.
5. The Standard Plumbing Code, 1991 Edition.
6. Standard Mechanical Code, 1996 Edition.
7. Standard Gas Code, 1996 Edition.
8. The heating and cooling equipment and installation shall conform to Standard No. 70 (Electrical Code) of the National Fire Protection Association 1991 Edition.

1.06 ABBREVIATIONS & ACRONYMS

A. These abbreviations and acronyms are used in this section:

ASHRAE - American Society of Heating, Refrigerating, and Air Conditioning Engineers, INC.
NFPA - National Fire Protection Association
SMACNA - Sheet Metal and Air-Conditioning Contractors National Association
UL - Underwriters= Laboratory

1.07 DEFINITIONS

A. To establish common meaning of terms in the mechanical work, use these definitions:

Provide	-	Furnish and install subject item, complete with accessory items for safe operation within the design intent.
Furnish	-	deliver subject item to project at point of final installation or use, except where other point is specified.
Install	-	make a final installation of items furnished.
Complete	-	with all accessory items required for safe operation within the design intent.
Indicated	-	as shown on drawings.
Concealed	-	where used in connection with insulation and painting of piping, ducts and accessories to mean hidden from sight, as in chases, furred spaces, pipe shaft or suspended ceilings.
Exposed	-	not concealed.
Condensation	-	visible moisture on surfaces.

1.08 PERMITS, INSPECTIONS AND STREET CONNECTIONS

A. Secure and pay for permits and inspections required for installation of the work. Deliver certification of inspections to architect.

B. Arrange for and pay costs incurred for connections of water, gas and sewer, including furnishing of water meter, excavating, trenching, backfilling, and repairing payment as required for installation of the work where indicated on the drawings or specifically noted on the drawings.

1.09 VERIFY EXISTING CONDITIONS

A. Contractor, before commencing work, shall examine all conditions on which this work is in any way dependent for perfect workmanship according to the intent of drawings and specifications and shall report to the general contractor, in writing, and conditions which prevent this contractor from performing acceptable work.

B. It shall be assumed that contractor, before submitting his bid, shall have made an Aon-site@ inspection of the premises to determine the conditions under which he will be expected to perform this contract. No increase in contract price shall be allowed due to failure of the contractor to perform this Aon -site@ inspection.

1.10 DESIGN CONDITIONS

A. Outdoor design conditions are in accordance with the ASHRAE Handbook of Fundamentals.

1.11 DRAWINGS

A. Refer to the architectural drawings for such details as finishes, dimensions, materials, etc., of the building. Check architectural features such as door openings, wall thicknesses, wall locations, etc./ against the architectural drawings prior to the installation of the work.

B. Mechanical drawings are diagrammatic, showing general locations of fixtures, pipes, etc., and are not to be scaled. Check all dimensions, existing conditions, etc., at building site. Provide off-sets, bends, fittings, and swing joints not shown, but required for proper installation of mechanical work.

C. Furnish material and labor necessary to make a complete operating system except in such cases that are specifically indicated by others.

D. This division of the specifications and accompanying drawings shall be considered as supplemental one to the other; materials and equipment and labor called for by one and not the other shall be supplied and installed as though specifically called for by both.

E. As Built Drawings:

Keep a blueline set of the contract or shop drawings exclusively for the purpose of recording the exact installed locations of piping and equipment as the project progresses. Upon completion of the work the contractor shall modify reproducible transparencies to reflect the noted changes throughout the project. The changes indicated on the transparencies shall be drafted in a neat and legible manner.

The as-built drawings shall include:

1. Mark all drawings AAS- BUILT CONSTRUCTION DOCUMENTS@.
2. Indicate the date drawings were prepared.
3. The Contractor=s name, address, and phone number.
4. Revise schedules per equipment submittal, including manufacturer and capacities.

1.12 CONTRACTOR=S CLOSE-OUT CHECKLIST

A. The contractor shall, at the end of the projects, submit to the owner the PROJECT CLOSE-OUT CHECKLIST filled in, in its entirety. Final payment shall not be approved until checklist is approved. The checklist is found at the end of this section.

PART 2 - PRODUCTS

2.01 LAYOUT BASIS

A. The system layout is based upon the use of particular items of equipment with such items identified by manufacturer=s make and model number. Physical dimensions, arrangement and service connections required for these particular items have been considered in making the layout. The equipment of another manufacturer listed as Aacceptable@ on that item of equipment may be submitted provided that energy requirements are no greater than for layout basis, and that additional service connections will be made at no additional cost to the owner.

B. Should shop drawings disclose that the above requirements cannot be met on the basis of the submitted equipment, contractor shall furnish equipment as specified for ALayout Basis@.

C. If equipment other than layout basis is proposed, the cost of all such changes as may be required in service connections and in structural systems to accommodate the proposed substitution, including additional engineering services, become the responsibility of the contractor and impose no additional cost to owner

2.02 MATERIALS

A. All materials used in the job shall conform to the standards cited.

B. Where mention of trade names and brands are used in describing materials for this installation, they are to indicate type, quality and arrangement of material required. Equal materials by other manufacturers, if used, must be approved by architect, prior to installation.

C. There shall be no asbestos in any material furnished under this contract.

2.03 DATA AND DRAWINGS TO BE SUBMITTED

A. Within 30 days after contract is signed, nine (9) copies of ALL equipment and ALL materials data

requiring review shall be submitted thru proper channels after having been reviewed and stamped by subcontractor and general contractor.

1. Data shall be bound in loose-leaf, three-ring, hard-back binders with pockets for diagrams Sectionalize with numbered tabs and preface with reference index.
2. Cover sheet shall list project name, location, architect, engineer and general contractor.
3. All items of equipment shall be submitted at same time except items such as temperature controls and diagrams that are dependent upon Areviewed@ data. They may be submitted separately at a later date. Provide sections in binders tabbed for these items to be inserted at a later date.

B. All submittal data shall include project name, the model, style and size of item being submitted, local manufacturer=s representative and telephone number and all criteria shown on schedule on plans. Submitted items shall include but not be limited to the following:

1. Pipe Specialties
   a. Include capacity curve with pump suction diffuser.
   b. Valves
   c. Valve Tags
2. Calibrated Balancing Valves
3. Inertia Bases
4. Pumps
   a. Submit curves
5. Chemical Treatment System
6. Insulation
7. Sump Pumps
   a. Submit pump curves
8. Fans
   a. Submit fan curves on all fans including AHU=s and RTU=s.
9. Flexible Duct
10. Roof Curbs

C. After reviewed data has been returned, contractor shall proceed with shop drawings of duct work and equipment room piping shall be submitted.

1. Duct Work Shop Drawings shall not be smaller than 1/4" = 1' -0" scale and must include duct size;

equipment connections and pad layout; location, dimensioned from building structure; off-sets, bottom elevation above finished floor; liner where required, plenums and all accessories.

2. Equipment Room Drawings shall include boilers, pumps, major piping (including control, check, isolation, balancing, and drain valves), pad layouts for all floor mounted equipment, air handlers and associated accessories. Scale to be not less than 1/4" = 1' -0".
3. Duct Work and Equipment Room Shop Drawings shall be prepared on sheets the same size as contract documents. Enlarged copies of contract documents shall not be acceptable as shop drawings.

D. Separate binders may be submitted for major sub-contractors such as HVAC; Plumbing; Fire Protection.

E. Attention is directed to a paragraph entitled AOperation and Maintenance Instructions@, Section 15 905 requiring copies of reviewed data to be included in O&M manuals.

2.04 CERTIFICATES

A. Upon acceptance by authorities having jurisdiction, certificates of occupancy required for this project including plumbing, HVAC, fire protection and Health Department certification of portable water shall be indicated by the responsible contractor(s).

2.05 EQUIPMENT FOUNDATIONS

A. All floor mounted equipment, unless otherwise detailed, shall be mounted on 4" high concrete pads extending a minimum of 4" beyond longest dimension in each direction. Concrete shall be 3,000 psi.

2.06 FIRE STOPPING

A. Piping penetrations in fire walls shall be sealed with UL listed fire stopping materials meeting requirements of ASTM E-814.

B. Acceptable products are Dow Corning 3-6548 Silicone RTV Foam, Flamesafe T&B Firestop, 3M, Nelson Electric and GE Pensil.

PART 3 - EXECUTION

3.01 PROTECTION OF WORK DURING CONSTRUCTION

A. Provide protective covers, skids, plugs, caps and coatings to protect equipment and materials from damage and deterioration during construction.

B. Store equipment and material under cover and off the ground.

C. When outdoor storage is necessary, provide protective covers of sheet plastic of gauge suitable for the area involved and reinforced to withstand wind and precipitation. Set equipment and materials on skids or platforms of height sufficient to avoid damage from splattering and ground water.

D. Plug ends of pipes when work is stopped to prevent debris from entering the pipes.

E. Close open ends of ductwork with temporary closures of sheet plastic taped in place on horizontal ducts and sheet metal caps with drip overhangs for ducts opening upward.

F. Do not operate any air handling systems during the construction period without filters in place to filter air entering the fan. Protect the exhaust fans by temporary filters cut from roll media and fastened over the air inlets.

3.02 WORKMANSHIP

A. The entire contract shall be executed in a neat, substantial and workmanlike manner, according to the true intent and meaning of the plans and specifications. Any work not installed in a neat, substantial and workmanlike manner shall, when directed in writing, be removed and replaced at the contractor=s expense without additional cost to the owner.

3.03 TOOLS

A. The Contractor for this work shall furnish all tools, machinery, hoists and other means for proper installation of the work.

3.04 TRENCHING, BACKFILLING AND PAVING

A. Install water service piping and sewers below recorded frost penetration line in compliance with applicable codes.

B. Excavate trenches to sufficient width, shore trenches, and remove water as necessary to permit proper installation of the work.

C. Backfill trenches only after piping has been tested, inspected, and locations of pipes and appurtenances properly recorded.

D. Maintain clearance from excavation to footings and outside bearing walls of 3 feet and an angle of not greater than 45-degrees to bottom of such footings or outside bearing wall.

E. Provide shoring when soil conditions and depth of excavation warrant shoring.

F. Where rock is encountered, remove rock to a depth of 6" below desired bottom of excavation and backfill with clean earth to desired level.

G. When piping is laid in fill or loose sand, tamp bottom of trenches to obtain 95% of dry maximum density compaction as determined by Standard Proctor Compaction Test, ASTM D698-58, prior to installation of pipes.

H. Use backfill free from rocks and debris, compacted in 6" layers as the excavation is filled. Take precaution to prevent damage to the piping.

I. Hand tamp backfill around the lines to depth of 2 feet above top of the lines and compact to obtain 95% of dry maximum density compaction as determined by the Standard Compaction Test ASTM D698-58.

J. Provide bell holes and continuous firm bedding for piping.

3.05 CUTTING AND PATCHING

A. All cutting and patching needed for installation of mechanical system shall be included under this Division.

B. No cutting will be permitted without prior approval by the owner.

C. Patching will be done by the trade whose work has been cut and shall be paid for under the mechanical division of the specifications.

D. Contractor shall furnish to other trades information such as size, position and arrangement of materials and equipment, so that openings in floors, walls, roofs, beams, and ceilings can be provided as construction progresses. When openings are omitted because of his failure to furnish information to the contractor, this trade at his expense, shall direct and pay general contractor to do cutting and patching required.

3.06 EQUIPMENT FOUNDATIONS

A. Concrete foundations and steel supports, etc., shall be provided in accordance with the Concrete and Structural Division of the specifications.

B. Concrete foundations shall have 3/4" beveled edges and all surfaces rubbed smooth prior to mounting equipment.

C. Prepare structural slabs to receive pad and curbs. Roughen contact surface before pouring concrete.

D. For equipment provided with gout holes, fill voids with non-shrinking grout after alignment and before operation of equipment.

3.07 COORDINATION OF INSTALLATION

A. Coordinate work under this division with work under other divisions.

B. Install work to fit into the spaces provided. Avoid damage on account of ill-timed work.

C. Arrange work to provide maximum headroom and clearance consistent with the requirements of the documents.

D. Except where otherwise noted, arrange piping to run either parallel or normal to building lines, and true to grade.

E. Provide supports and anchors for work to avoid damage from movement.

F. Place equipment, valves and unions requiring service in accessible locations.

G. Install materials and equipment completely with piping, controls and accessories.

H. Coordination of equipment located in ceiling plenums (air conditioning equipment, ductwork, plumbing, lights, fire protection lines, structure, etc.) shall be done before installation is begun and continued during construction to assure proper space for maintenance of equipment and maneuver-

ability of light fixtures in the grid.

3.08 COUNTER FLASHING

A. All flashing methods and materials shall provide a complete watertight installation.

B. Provide counter flashing for items placed on roof or piercing roof. General Contractor shall provide base flashing.

C. Riser sleeves for piping and conduits in membrane waterproofed floors shall have flashing clamps attached to membrane. Large sleeves shall be shop fabricated. Sleeves shall extend 2 inches above finished floor.

D. Drains and cleanouts in membrane water proofed floors shall have flashing clamps attached to the membrane.

E. Ducts passing through roof shall be counterflashed with sheet metal, soldered to duct riser and extended down over roof curbs, which is properly flashed by the General Contractor. Apply heavy coating of roofing cement at junction of duct and counterflashing collar.

3.09 CLEANING AND ADJUSTING

A. All equipment, pipe, valves and fittings shall be wiped clean, with all traces of oil, dust, dirt, and paint spots removed. Bearings shall be lubricated as recommended by the equipment manufacturer. All control equipment shall be adjusted to setting indicated.

3.10 PAINTING

A. Clean surfaces of work under this Division and leave surfaces ready for painting. Colors shall be selected by Architect.

B. Where surfaces of factory finished items are marred, refinish those surfaces to original condition with factory furnished touch up paint.

C. The following, as a minimum, shall be painted:

1. Steel equipment supports.
2. Exposed ductwork where specified.
3. Ferrous louvers and grilles where specified elsewhere.
4. Exposed ferrous pipe hangers.

3.11 NOTIFICATION BEFORE INSPECTION

A. Notify the architect/engineer in writing not less than five (5) working days before work is ready for inspection.

3.12 COORDINATION OF ELECTRICAL WORK

A. Provide electrically operated equipment designed and built for operation with electric characteristics provided by Division 16. Verify voltage, horsepower, wattage and phase from electrical drawings before ordering equipment.

B. Provide motor controls, systems controls, starters, contractors, etc., required for the mechanical systems complete as a part of the motor or apparatus which it operates, unless specifically noted to be provided under another section.

C. Provide under the work of this section all other devices, line and low voltage control and interlock wiring, and additional conduit necessary but not indicated on the electrical drawings, all in accordance with material and installation requirements.

D. Provide wiring diagrams required for the proper installation of the equipment under the work of this section.

E. All mechanical assemblies containing multi-motors or electric heating elements shall be factory equipped with integral over-current protection for each motor/heater in accordance with the requirements of the N.E.C.

3.13 GUARANTEE

A. Contractor shall guarantee this work and make good without cost to the owner any defects in equipment, materials or workmanship which may develop within the period of one (1) year from date of acceptance or beneficial use by the owner.

B. Refrigeration Compressors shall be provided with an additional 4 year warranty which shall include labor and refrigerant.

END OF SECTION

MECHANICAL PROJECT CLOSE-OUT CHECKLIST

The following items as stipulated by Carter Watkins Associates and/or their Consultants are to be provided. The project will not be accepted as 100% complete until these items are provided to the appropriate parties.

	ITEM	ACCEPTED BY	REPRESENTING	DATE
1.	O & M Manuals			
2.	Copy of shop drawings and submittals			
3.	Extended warranties for HVAC equipment			
4.	Certification of welders			
5.	Controls under glass			

6.	As-builts	_____	_____
7.	Test and balance report	_____	_____
8.	Change out construction filters in air moving equipment	_____	_____
9.	Fire protection documents reviewed by Insurance Underwriter	_____	_____
10.	Valve tags and charts	_____	_____

SECTION 23 06 00

BASIC MATERIALS AND METHODS

PART 1 - GENERAL

1.01 WORK INCLUDED

A. The work covered by this section includes furnishing all labor, equipment, and materials as specified herein, shown on the drawings, or required for a complete and satisfactory installation.

1.02 REFERENCE STANDARDS

A. American National Standards Institute (ANSI)

B. American Society of Mechanical Engineers (ASME)

C. National Fire Protection Association (NFPA)

D. Underwriters Laboratory

PART 2 - PRODUCTS

2.01 PIPING

A. Domestic Water Systems:

1. Pipe, 3" size and smaller: Copper water tube manufactured in accordance with ANSI H23-1.
   a. Type AL@ hard copper above ground.
   b. Type AK@ hard or soft copper underground or in pipe trench.
2. Fittings: Wrought copper seat joint conforming to ANSI B16.22.
3. Screwed or flanged to sweat pipe connections cast brass, ASA B16.18.
4. Joints:
   a. 2" and smaller: 95-5 (95% tin and 5% antimony) solder.
   b. 2 - 2" and larger: 95-5 (95% tin and 5% antimony) solder.
   c. All joints below slab on grade shall be alloy solder melting not less than 1000 degrees F.
5. Unions:
   a. Cast brass or bronze with soldered connections. Unions 2" and smaller, ground joint; 2 - 2" and larger, flanged.
6. Pipe, 4" diameter and larger:
   a. Underground: 4" size shall be Class 51, 6" and larger shall be Class 50 ductile iron, ANSI A21.51-1976 with push on or mechanical joints with the bituminous outer coating. Fittings shall be 250 psi ductile iron, mechanical joints with bituminous outer coating.

b. Above Ground: 4" size and larger shall be type L hard drawn copper with wrought copper or cast brass fittings.

B. Soil, Waste, and Vent piping within the building and where indicated on the drawings.

1. Pipe and Fittings:

a. Above slab-on grade and inside the building shall be PVC pipe and fittings properly marked to indicate the system complies with all Soil Pipe Standards 301-74.

b. Below slab-on grade and under floor shall be hub and spigot with oakum and lead caulked joints or at contractor=s option, neoprene one-piece elastometic compression gasket joints for pipe bearing on virgin soil.

c. Sanitary outside building may be PVC or at Contractor=s option, extra strength vitrified clay with PVC joints.

2. Pipe and Fittings:

a. ABS or PVC piping above and below slab on grade except in return air plenums.

b. ABS plastic DWV piping and fittings shall conform to ASTM Standard D2661 and shall be so marked. ABS solvent cement shall conform to ASTM Standard D-2235.

c. PVC plastic DWV piping and fittings shall conform to ASTM Standard D2665 and shall be so marked. PVC solvent cement shall conform to ASTM Standard D-2564. PVC primer shall be applied to pipe and inside of socket fittings before applying PVC solvent cement.

d. Pipe cement that is recommended by the manufacturer for use on neither ABS of PVC pipe shall not be permitted on the project.

e. All plastic pipe and fittings shall be NSF approved and shall be so marked.

f. All ABS and PVC plastic pipe and fittings shall have solvent socket ends.

C. Waste connections to service sink trap standards:

1. Pipe: Galvanized Schedule 40 steel pipe.

2. Fittings: 125 lb. galvanized, screwed, recessed pattern, drainage fittings.

3. Options: Type AL@ copper with adapters.

D. Waste connections to lavatories, sinks, and drinking fountains:

1. Pipe: Type AL@ hard copper manufactured in accordance with ANSI H23.1.

2. Fittings: Cast brass alloy or wrought copper drainage fittings manufactured in

accordance with ANSI B16.23.

E. Soil connections to urinals:

1. Pipe: Type AK@ copper with wrought copper pressure fitting or red brass nipples and cast brass fittings.

F. Waste connections to water closet:

1. Floor Mounted - Cast iron closet flange bolted to fixture with fixture setting seal gasket.
2. Wall Hung - Chair carriers as specified with fixture.

G. Condensate Drain Piping:

1. Type AM@ copper tubing.
2. Fittings:
   a. Copper pipe: Sweat type wrought copper or cast brass.
   b. Provide cleanout for all changes of direction exceeding 45 degrees.

H. Chilled Water and Hot Water Space Heating Piping:

1. Pipe: Schedule 40 black steel conforming to ASTM A120.
2. Fittings: Wrought carbon steel butt welding fittings, conforming to ASTM A234, for pipe sizes 2-1/2" and larger. Malleable iron, 150 lb. class, screwed conforming to ASTM A47, for pipe sizes 2" and smaller.
3. Alternate Fittings: Grooved piping and fittings.
   a. Acceptable manufacturers are Victaulic and Grinnell Groove-loc.
   b. Fittings shall be rigid type unless noted otherwise on plans.
   c. Manufacturer shall submit piping shop drawings.

I. Gas Piping:

1. Pipe: Schedule 40, black steel pipe conforming to ASTM A-120, factory coated and wrapped for underground, uncoated for above ground.
2. Fittings: Carbon steel, butt weld for sizes 2-1/2" and larger and black malleable iron, screwed for 2" and smaller. Brushings are not permitted.
3. Corrosion protection: Apply corrosion resistant coating, to all underground joints and damaged factory wrap.
4. Gas pipes shall not be installed below floor slabs on grade, in partitions, walls or plenums except as directed and as approved by local codes.
5. Provide gas cock for each piece of equipment.

J. Compressed Air Piping: (125 psig)

1. Pipe: Type AL@ copper.
2. Fittings: Wrought copper sweat joint conforming to ANSI B16.22. Construct joints with Silfos.

OR

3. Pipe: Schedule 40, black steel conforming to ASTM A-120.
4. Fittings: Carbon steel, 125 lb. butt weld for size 2-1/2" and larger; black malleable screwed for 2" and smaller.

K. Underground Piping Systems:

1. The layout basis of the following chilled water, hot water systems is Thermal Pipe Systems. Acceptable alternates are Ricwil, Permapipe, and Thermacore.
2. Space Heating Hot Water Piping:
   a. HEAT-TITE shall be used for hot water supply and return using a rubber ring jointing method. Unless otherwise specified, all pipe, fittings, valves, and accessories shall conform to the requirements of ANSI B31.1, and shall be of the proper type for pressure and temperature of the heating or cooling water.
   b. Steel Carrier Pipe: Carrier pipe shall be steel pipe.
   c. HEAT-TITE COUPLING: The HEAT-TITE coupling shall be Reinforced Thermosetting Resin Plastic (RTRP). The RTRP coupling shall be glass filament wound epoxy ring, shall be machined into the coupling. The length of the coupling shall be such that when correctly assembled it will give the proper end separation.
   d. Rubber Sealing Rings: Rubber sealing rings for HEAT-TITE piping shall be molded heat resistant Ethylene Proplene Diene Monomer (EPDM) using a properly vulcanized compound. The ring surfaces shall be smooth and free from all porosity and internal voids.
   e. PVC Casing Pipe: The Polyvinyl Chloride (PVC) Casing Pipe shall be of virgin PVC resin meeting the classification requirements of ASTM D1784. The thickness shall be as shown on the following pages.
   f. Rubber End Seals: Rubber end seals for insulated HEAT-TITE shall be a high temperature (HT) heat resistant Ethylene Proplene Diene Monomer (EPDM) molded rubber compound. All surfaces shall be smooth and free of voids.

g. Polyurethane Foam Insulation: Polyurethane foam insulation shall meet the following specifications:

Type:	Two component urethane
Compressive Strength:	25 psi parallel min at 5% comp
Shrinkage:	None at 70 F
Free Rise Density:	1.5 to 2.5 lbs / cu. ft.
Aged AK@ (70 F - 72 hrs):	0.140 BTU per inch, per hour, per degree Fahrenheit, per s.f.
Closed Cell Content:	90%
Insulation Concentricity:	Carrier Pipe shall be concentric to casing pipe. The allowable maximum deviation from center line of carrier pipe shall be plus or minus 1/4 inch at the casing center point and plus or minus 1/16 inch at the end seals.

h. Casing-Tite Coupling: The Casing-Tite coupling shall be of virgin PVC Resin meeting classification requirements of ASTM D1784. The coupling shall be SDR 51 or heavier. The rubber rings shall meet ASTM D1869. The Casing Tite coupling shall have a groove molded into each end and the sealing rings inserted into the groove at the factory.

I. Insulated Fittings: Fittings may be preinsulated by Thermal Pipe Systems, Inc. using the same insulation thickness and casing as the pipe. Where necessary laid-up fiberglass casing will be substituted in all or part of the fitting. A thrust plate of the proper size shall be provided. End seals on fittings shall be the same as used on the pipe.

j. Wall Penetration Sleeves: Provide where piping passed masonry or concrete walls, floors, and roofs. Sleeves in outside walls below and above grade, in floor, or in roof slabs, shall be schedule 40 or standard weight coated black steel pipe. Space between piping or insulation casing, and the sleeve shall be sufficient to allow proper

water tight sealing, but never less than 2". Sleeves shall be held securely in proper position and location during construction. Sleeves shall be of sufficient length to pass through entire thickness of walls or slabs. Sleeves in floor slabs shall extend 2 inches above the finished floor. In existing concrete manholes or building, wall penetrations may be made using the Acore drilling@ methods providing proper care is taken to drill the holes to the size needed and square to the line of the pipe.

k. Wall Penetration Seals: All wall penetrations shall be sealed to prevent water from entering the building or manhole. The sealing material shall be as specified by the engineer.

l. Insulation: Thickness of insulation for HEAT-TITE pipe and fittings shall be as shown below.

m. Temperature and Pressure: The HEAT-TITE piping system and all of its components to operate up to 150 psig at 250 degrees F, plus typical surges.

n. Dimensions and Weights of insulated HEAT-TITE piping and fittings are as shown below.

SCHEDULE	PIPE SIZE	INSULATION THICKNESS	WT. (LBS/FT)
80	2	.92	105.6
80	2	1.20	209.4
80	4	1.67	316.8
80	6	1.59	531.8
80	8	1.57	781.8
80	10	1.49	1028.2

80	12	1.38	1416.0

3. Chilled Water Piping:

a. KOOL-KORE shall be used for chilled water service, using a rubber ring jointing method.

b. PVC Carrier Pipe: Carrier pipe shall be Polyvinyl Chloride (PVC) 160 psi pipe - SDR 26 in accordance with ASTM D2241. Pipe shall be extruded from clean, virgin approved class 12454A PVC compound conforming to ASTM D1784.

c. PVC Casing Pipe: The PVC casing pipe shall be of virgin PVC resin meeting the minimum classification requirements of ASTM D1784. The thickness shall be as shown on the following pages.

d. Rubber Sealing Rings: Sealing rings for the PVC carrier pipe shall be a molded solid compression type rubber compound suitable for the service and pressure of the system.

e. Rubber End Seals: End seals for insulated KOOL-KORE shall be molded rubber with a compression type seal.

f. Polyurethane Foam Insulation: Polyurethane foam insulation shall meet the following specifications:

Type:	Two component urethane
Compressive Strength:	25 psi parallel min at 5% comp
Shrinkage:	None at 70 F

Free Rise Density:	1.5 to 2.5 lbs / cu. ft.
Aged AK@: (70 F - 72 hrs)	0.140 BTU per inch, per hour, per degree Fahrenheit, per s.f.
Closed Cell Content:	90%

Insulation Concentricity:

Carrier Pipe shall be concentric to casing pipe. The allowable maximum deviation from center line of carrier pipe shall be plus or minus 1/4 inch at the casing center point and plus or minus 1/16 inch at the end seals.

g. Wall Penetration Sleeves: Provide where piping passes through masonry or concrete walls, floors, and roofs. Sleeves in outside walls below and above grade, in floor, or in roof slabs, shall be schedule 40 or standard weight coated black steel pipe. Space between piping or insulation casing, and the sleeve shall be sufficient to allow proper water tight sealing, but never less than 2". Sleeves shall be held securely in proper position and location during construction. Sleeves shall be of sufficient length to pass through entire thickness or walls or slabs. Sleeves in floor slabs shall extend 2 inches above the finished floor. In existing concrete manholes or building, wall penetrations may be made using the Acore drilling@ methods providing proper care is taken to drill the holes to the size needed and square to the line of the pipe.

h. Wall Penetration Seals: All wall penetrations shall be sealed to prevent water from entering the building or manhole. The sealing material shall be as specified by the engineer.

I. Insulation: Thickness of insulation for KOOL-KORE pipe shall be as shown below.

j. Temperature and Pressure: The KOOL-KORE piping system and all of its

components are designed to operate at temperatures up to 70 F at 160 psig or at reduced pressures for elevated temperatures, as follows:

TEMP. F	PRESSURE psig
80	144
90	121
100	102
110	80
120	64
130	49

k. Dimensions and weights of insulated KOOL-KORE piping systems are as shown below.

SCHEDULE	PIPE SIZE	INSULATION THICKNESS	WT. (LBS/FT)
40	4"	1.67	143

2.02 PIPE SPECIALTIES

A. Escutcheon Plates:

1. Escutcheon plates: Chromium-plated, not less than 20 gauge steel, split pattern,

set screws on ceiling plates, spring clips on others, sized to fit over insulation and to cover sleeves.

2. For exposed piping in flush sleeves in finished areas: Grinnell Fig. 10, F & S Fig. 602, Perfection Fig. 10.

3. For exposed piping where sleeves extend beyond penetrated surface, provide deep pattern type.

B. Pump Suction Diffuser:

1. Cast iron body, steel or cast iron outlet guide vanes, removable stainless steel strainer and fine mesh brass start-up strainer.

C. Triple Duty Valve:

1. Angle or straight type combination shut-off, balancing, non-slam check valve with cast iron body, bronze disc and seat, and stainless steel valve stem and spring.

2. Install valve with ample clearance for valve stem and service.

D. Air Purger:

1. Steel or cast iron body, flanged connections for horizontal, in-line installation, and tappings for vent and drain connections.

E. Air Vents:

1. Automatic Air Vents shall be Armstrong Model AAE-750, or equal, installed in a vertical position with a gate valve to isolate vent for service or replacement.

2. Manual Air Vents shall be Armstrong No. 72, or equal up to 75 psig operating pressure or lever handle brass cock rated for operating pressure. Provide brass goose neck termination.

F. Automatic Fill Valve:

Armstrong Model RD or HRD or equal as required for operating pressure of installation.

G. Expansion Tank:

Taco Model CAX or equal ASME precharged bladder expansion tank stamped 125 psig working pressure with replaceable bladder, rated for 240-degrees F. at the tank and air charging valve to facilitate precharge pressure to meet actual system conditions.

H. Backflow Preventer: (Make-up Water System)

1. Watts Model 9D or equal, tested and certified under A.S.S.E. Standard 1012-1980 or CSA Standard B64.3.

I. Water Pressure Reducing Valve (Make-up water system) - Armstrong RD-40, or equal bronze construction with built-in strainer.

J. Strainers shall be Y-pattern type with cast iron body. Strainers shall have removable 316 stainless steel or monel screens and shall have perforations to provide a net free area through the screen of at least 3 times that of the entering pipe. Perforations shall be 1/8" diameter for chilled, hot, and make-up water service. Strainers 2-1/2" and larger shall be provided with a plugged gate valve and nipple the full size of the strainer blowdown outlet. Blowdown outlets shall be located at the low point of the strainer. Strainers 2" and smaller shall be threaded. Strainers 2-1/2" and larger shall be flanged.

K. Flexible Pipe Connections: Flexible pipe connections shall be stainless steel corrugated metal hose with high tensile stainless steel wire braid for ferrous pipe and bronze corrugated metal hose with high tensile bronze wire braid with copper pipe. Connections for pipe 2-1/2" and smaller shall be male pipe thread, and for pipe 3" and larger shall be 150 lb. flange ends. Minimum pressure rating shall be 150 psig wwp. Rubber hose connectors for closed loop heat pumps will be furnished with the heat pump units.

2.03 ACCESS PANELS - BUILDING

A. Flush, hinged door, locking type steel access panel and frame. Access panels shall be UL fire rated same as structure in which installed.

B. Panel size 24" x 24" unless indicated otherwise on drawings.

C. Frame styles specifically designed for setting in bare masonry, plastered surfaces, dry wall, or in acoustical tile as required.

2.04 CORROSION RESISTANT COATINGS

A. Acceptable manufacturers: Koppers Bitumastic Super Service Black, Royston Laboratories A-51, Johns-Manville ATranstex V20".

2.05 PIPE HANGERS AND SUPPORTS

A. Products manufactured in accordance with MSS SP58 and conforming to Federal Specification WWH171e, MSS SP69, UL203, NFPA13, and NFPA24 are acceptable. The following Grinnell figure numbers are used as a guide.

1. Bare Copper Pipe - Fig. CT-99.

2. Bare Steel Pipe - Fig. 260.

3. Insulated Pipe - Fig. 260 sized to fit over insulation and with properly sized Fig. No. 167 shield.

4. Vertical Pipe - Fig. CT-121 or Fig. 261.

   a. Bare copper pipe must be isolated from contact with steel riser clamp by rapping with sheet lead or other acceptable material. Fig. CT-121 coated clamp may be used.

5. Several horizontal pipes in the same plane may be supported on trapeze hangers spaced as required for the smallest pipe.

2.06 SLEEVES

A. Sleeves shall be standard weight steel pipe.

B. Sleeves shall be of sufficient size for pipe and insulation to pass through.

C. Exposed sleeves through floors shall project 2" min. above finished floor.

D. Pro-Set or equal sleeve system may be used in lieu of above.

2.07 DIELECTRIC COUPLINGS

A. Acceptable: Capitol Type CS, Epco FX, and Clearflow Dielectric Waterway.

B. Description: Screwed ends, dielectric isolating section.

2.08 VALVES

A. General:

1. All gate and globe valves shall be designed for repacking under pressure when fully opened and shall be equipped with packing suitable for the intended service.

2. Valves used in copper pipe systems up to and including 3" size shall be similar and equal to those described herein for threaded valves up to 2" size.

3. Face to face and end to end dimensions of valves shall conform to ANSI B16.10.

4. Insofar as possible, all valves of the same type shall be of the same manufacturer.

B. Gate Valves:

1. Valves 2" and smaller shall be bronze body, solid wedge, rising stem, union bonnet, equal to Crane 428UB, Jenkins 4TU, Milwaukee 1152 or Stockham B-105.

2. Valves 2-1/2" and larger shall be flanged and iron body, bronze trim, OS&Y equal to Crane 465-1/2, Jenkins 651-C, Milwaukee F-2885 or Stockham G-623.

C. Globe Valves:

1. Valves 2" and smaller shall be bronze body, union bonnet, integral seat, renewable disc, equal to Crane 7, Jenkins 106A, Milwaukee 590, or Stockham B-22.

2. Valves 2-1/2" and larger shall be iron body, composition disc, flanged ends, bolted bonnet, bronze mounted, equal to Crane 351, Jenkins 613C, Milwaukee F-2981, or Stockham G-512.

D. Check Valves:

1. Valves 2" and smaller shall be bronze body, horizontal swing, Y pattern with removable discs equal to Crane 37, Jenkins 92A, Milwaukee 509, Stockham B-319.

2. Valves 2-1/2" and larger installed horizontally shall be iron body, bolted bonnet, horizontal swing with removable seat and disc equal to Crane 373, Jenkins 624-C, Milwaukee F-2974, Stockham G-931.
3. Valves 2-1/2" and larger installed in vertical position shall be iron body, globe type, silent design, bronze mounted with stainless steel spring and flanged end connections equal to Milwaukee 1800, Mueller 105-AP, APCO 600.

E. Ball Valves:

1. Ball valves shall be 2" and smaller for water and air service and shall have a 2-piece bronze body, teflon seat and brass ball equal to Crane 2180, Jenkins 902-T, Milwaukee BA-200, Stockham S-216-BR-RT. Provide extended handles on insulated piping and memory stop for manual balancing.

F. Butterfly Valves:

1. Butterfly valves for water piping 2-1/2" and larger shall be lug type with extended neck, cast iron body, bronze alloy disc, stainless steel stem equal to Crane 14, Jenkins 232E, Milwaukee ML-1233-E, Stockham LG711BS3E. Provide lever handles on valves 12" and smaller and gear operators on valves larger than 12".

G. Hose end drain valves shall be gate valves with 3/4" hose thread adapter screwed or soldered into valve.

H. Manual balancing valves, non-calibrated-semi-steel body, neoprene coated, eccentric plug, wrench operator, straightway, memory stop 175 #wog rating.

1. 2" and smaller, screwed ends - Homestead 1512; DeZurik 118S: OIC 811; Milwaukee BBFS100.

2. 2-1/2" and larger, flanged ends - Homestead 1522 and 3" and 4", 1232 larger; DeZurik 118F, Illinois Products Series 5000.

I. Calibrated Balancing Valves - calibrated for flow balancing, pressure tapping takeoffs, positive shut-off valve with memory stop. Valves shall be supplied with preformed Polyurethane insulation cover.

1. 2" and smaller, screwed ends - Armstrong CBVI; Illinois Series 6000.

2. 2-1/2" and larger, flanged ends - Armstrong CBVII; Illinois Series 6000. (Note: Illinois flow measuring device larger than 1-1/4" must be accompanied by balancing valve series 5000.

3. A compatible portable flow measurement meter shall be furnished to the owner at the end of the job.

J. Automatic Flow Control Valves:

1. Autoflow, Griswold, or equal, pressure compensating flow control valves in one piece configuration consisting of ground joint union and factory-set flow control unit.

2. Valves shall be brass or stainless steel.

3. Valves must be marked to show direction of flow.

2.09 VIBRATION ISOLATION DEVICES

A. Acceptable: Amber / Booth, Consolidated Kinetics, Korfund, Mason, VECO, and Vibration Mountings and Controls, Inc.

B. Supply all vibration isolation devices from a single manufacturer.

C. Select vibration isolation equipment to give uniform loading and deflection, according to weight distribution of equipment.

D. Spring isolation, generally: spring diameter not less than 0.8 of spring operating height. Provide springs with a minimum additional travel to solid equal to 50% of the rated deflection. Select spring with ratio of horizontal spring constant to vertical spring constant between 1 and 2.

E. Un-housed Spring Type: Provide with leveling bolts for attaching to equipment, vertical resilient limitstops with a minimum clearance of 2" maintained around restraining bolts and between the housing and spring, limit stops out of contact during normal operation. Size for 1" static deflection.

F. Vibration Hanger: Provide with a steel spring and a double deflecting neoprene element in series. Elastomer element with a minimum static deflection of 1/4"; steel spring static deflection of 1", except for the two isolators nearest the vibrating equipment with a static

deflection of 1-1/2 times, and equal to, the static deflection of the isolated equipment, respectively. Install with spring element concentric to rod. Isolate hanger rod from steel housing with neoprene bushing.

2.12 TEST PLUGS

A. Universal National, 2" N.P.T. brass body, with neoprene test plug valve insert.

B. Acceptable Manufacturers: No. 700 Pete=s Plug or equal.

2.13 PIPING IDENTIFICATION

A. General: Install color coded identification and direction markers after completion of painting and thermal insulation work unless otherwise noted, all in accordance with ANSI Standard A13.1, 1975.

B. Materials: Equal to W.H. Brady Co. cataloged systems. Black stencil.

C. Locations:

1. Mechanical Equipment Rooms:

Within 18" of each point of entry and exit from all rooms.

Withing 3 feet on each side of each 90-degree elbow, tee, and connection to equipment or vessel.
At not over 20 foot intervals, measured along centerline of pipe.

2. Above Suspended Ceilings:

Within 18 inches of each valve or valve assembly.

At tees, identify both main and branch within 3'-0" of tee.
Within 3 feet of each 90-degree elbow.

3. Piping Concealed in Chases or Shafts: Identify each pipe visible through access door or panel.

4. Piping exposed in rooms other than Mechanical Equipment Areas:

Omit identification on piping 2 inch size and smaller exposed at connections to equipment or plumbing fixtures.

With the above exception, identify at not less than one point each piping run visible in each room, with identification at not over 20 foot intervals measured along centerline of pipe.

2.14 VALVE IDENTIFICATION

A. General: Valves shown on drawings except those isolating individual pieces of equipment shall be identified with brass tags and chart listing all valves by numbers. Each valve identification tag shall be 18-gauge polished brass, 1-1/2 inch diameter with service indicated by 1/4 inch, stamped, black-filled letters and valve number indicated by 7/16-inch stamped, black-filled numerals. Tags shall be fastened to valves with meter seals, brass >S= hooks or brass jack chain to permit easy reading.

B. Identification: Each valve tag shall have an identifying letter designating the system, and an identifying number designating the valve. Identifying letters shall be those utilized in the Legend.

C. A chart of all valves showing the valve identification number, location, purpose, and / or special information shall be mounted in an aluminum frame under 1/8" sheet plastic and secured to a wall as directed. Valve chart wording and numbering shall be approved prior to fabricating tags.

D. Manufacturer: Tags shall be as manufactured by W.H. Brady Company, Seton Name Plate Corporation, or Markem Corporation.

2.15 NAMEPLATES

A. General: Provide for all equipment, motor starters, remote push-button stations, insertion type thermostats, remote bulb thermometers, filter gauges, remote pressure gauges, fans, pumps, equipment, and panel mounted controls. Submit identification number and wording to review by engineer.

B. Designation: The name of each piece of equipment or usage shall be etched in 1/4" maximum, 1/8" minimum high letters and mounted on or adjacent to piece of equipment.

C. Type: White core black or red Bakelite secured with epoxy glue.

2.16 MOTORS

Provide motors for all equipment furnished under Mechanical Sections unless otherwise specified. Motors shall operate using electrical characteristics as shown on the electrical drawings and as specified. Motors shall be Louis-Allis, Gould, Westinghouse, General Electric, or Emerson, except where furnished as part of packaged equipment.

Standards: Except where otherwise specified, motors shall be manufactured according to NEMA Standards. They shall be NEMA Design B, Insulation Class B or F, 40-degrees C. ambient and 40-degrees C. rise. Hermetic motors shall be manufactured according to ARI Standards. Motors 2 HP and larger shall be high efficiency, similar to Gould E plus.

A. Sizes:

1. Motors with standard NEMA Electrical characteristics shall be selected for the design brake horsepower without overload current at rated voltage.

2. Motors with special electrical characteristics, such as hermetic refrigeration motors, shall be selected to produce the brake horsepower required for the specified load without overload current at rated voltage.

B. Enclosures: Motor enclosures shall be open drip-proof, except where otherwise specified. Motors for equipment installed where subject to weather shall be fan cooled, totally enclosed, weatherproof type.

C. Nameplates: Motors shall have a nameplate showing the specified nominal system voltage as nameplate rated voltage. Each motor shall be guaranteed to operate satisfactorily at the specified nominal system voltage, plus or minus 10%.

2.17 STARTERS

A. Furnish all starters (except where included in motor controls centers), contractors, motor switches, and start-stop stations. Where located inside the building, starter and motor enclosures shall be NEMA type 1 general purpose, and where located outside the building, shall be NEMA type 3R except where otherwise noted on the drawings. See Electrical Division for motor control centers.

B. Three phase motors shall be provided with magnetic across-the-line starters with overload protection on each phase. Furnish starters with hand-off-automatic selector switch and reset button in cover.

C. Single phase motors less than 2 HP shall be provided with relays or switches with overload protection.

D. Equipment furnished with factory installed motor starter units shall also be equipped with individual motor branch circuit protective devices interconnected on their line sides to lugs sized to receive a feeder with minimum ampacity of 125% of total connected load.

E. Starters shall be Allen Bradley, Cutler Hammer, Square-D, General Electric, Westinghouse, Jocelyn Clark, or equal.

2.18 STEEL EQUIPMENT BASES AND SUPPORTS:

A. Fabricate from steel structural shapes by welding. Where members must be removable, assemble with bolted joints.

B. Form corners in angle frames with joints mitered, welded, and ground smooth.

C. Finish steel bases and supports in 2-part rust resistive oil paint system with primer and top coat to light gray color.

PART 3 - EXECUTION

3.01 SLEEVES

A. Sleeves shall be spaced sufficient distance from adjacent walls and other sleeves so that insulation, floor, wall, and ceiling plates may be installed without cutting insulation or plates.

B. Sleeves through slabs and outside walls below grade shall be caulked water-proof. Caulk other sleeves in floor slabs with non-shrink grout or concrete.

C. Piping passing under column footings, or under or through wall footings, foundations or retaining walls shall be provided with a relieving arch, or an iron pipe sleeve two pipe sizes greater than the pipe passing through.

D. Provide sleeves for piping passing through masonry walls, partitions, floors, and roofs except for cast iron piping which may be built into masonry walls and partitions.

E. Cut wall sleeves full thickness of walls.

F. Where pipes passing through sleeves are to be covered, size sleeves large enough to allow for full thickness covering.

G. Omit pipe sleeves in concrete slabs on grade.

H. Provide sleeve lay-out for slabs above grade, including roof, for approval by structural engineer and architect showing location and size before slabs are formed.

I. Sleeve system such as Pro-Set or equal shall be installed in accordance with manufacturer=s recommendations.

J. Annular space between sleeve and pipe shall be packed with approved fire stopping material. See AFire Stopping@ in Section 15010.

K. Provide sleeves on thermally expandable piping penetrations through fire or smoke rated gypboard construction partitions. The sleeves shall extend a minimum of 3" on either side of the partition and the annular space shall be filled with a fire stopping material in such a way as to maintain a fire endurance rating equivalent to that of the adjacent wall.

L. Isolate non-ferrous piping from slab on grade with armaflex or equal insulation .

M. Piping penetrations made AFTER installation of wall shall be cored with a coring machine. Block shall not be knocked out with a hammer.

3.02 SUPPORT OF PIPING

A. Support steel piping 1" and smaller on centers not more than 8' apart. Support piping larger than 1" on centers not more than 10' apart.

B. Support copper tubing 1-1/4" or larger size not more than 10' apart. Support copper tubing in sizes 1" and smaller not more than 6' apart.

C. Support soil, waste, and vent stacks and inside downspouts at the base by means of heavy hangers or riser clamps close to the bottom of the stack.

D. Support each horizontal length of cast iron pipe, not counting the fitting, not exceeding 10'-0" on centers.

E. Support all piping within 1' of each change in direction and at each branch connection.

F. Provide pipe hangers with rods and supports proportioned to the actual size of pipe supported

with allowance for weight of insulation and contents.

G. Support hot and cold water plumbing piping in spaces back of plumbing fixtures with heavy duty ABS brackets and u-bolts secured to cast iron stacks.

H. Provide insulation protectors for insulated piping supported on gang or clevis hangers.

I. Do not penetrate exterior walls of the building below grade with support bolts.

J. Do not run piping over or within 3'-6" of electrical switchgear or panelboards in mechanical spaces. No piping is permitted in space dedicated to electrical equipment rooms.

K. Condensate drain piping shall be pitched in the direction of flow not less than 1/4" per foot.

L. Provide strainer ahead of each pump suction, trap, and automatic valve.

M. Provide unions in piping at valves and equipment connections.

1. Screwed Piping - Malleable iron, ground joint, brass seated, 2" pipe size and smaller.

2. Welded Piping - Flanged with same gaskets as at pipe fittings, 2-1/2" pipe size and larger.

N. Bed body of piping underground on solid ground.

O. Install air piping with slope of 1" fall per 40' toward receiver of blow off point.

P. Provide vibration isolation device on first three pipe hangers from rotating mechanical equipment over one horsepower.

Q. Vertical piping shall be supported at each floor. Riser clamp must rest firmly on floor - not on sleeve.

R. Perforated strap hanger or similar material will not be permitted.

3.03 PROCEDURES FOR PIPE JOINTS

A. Threaded Pipe Connections:

1. Ends of pipe shall be cleaned and reamed.

2. Joints shall be made with pipe thread lubricant suitable for service intended, applied to male threads only.

B. Soldering of Pipe:

1. Ends of pipe shall be cleaned with sand cloth or wire brush.

2. Flux shall be evenly applied to both pipe end and fittings. Flux shall be of type recommended by its manufacturer for the type of solder used. Brazing flux shall be used for solder or 1000-degrees F. or higher melting point.

3. Solder shall completely fill socket of joints. **Do not back up joints with solder dissimilar to that used in joints.**

C. Mechanically Formed Tee Connections:

1. Mechanically extracted collars shall be formed in a continuous operation consisting of drilling a pilot hole and drawing out the tube surface to form a collar having a height of not less than three times the thickness of the tube wall. The collaring device shall be fully adjustable as to insure proper tolerance and complete uniformity of the joint.

2. The joining branch tube shall be notched and dimpled in a single process so as to set the proper penetration of the branch tube into the fitting to assure a free flow joint.

3. All joints shall be brazed in accordance with the Copper Development Association Copper Tube Handbook using B-cup series filler metal. Note: Soft soldered joints will

not be permitted.

4. All mechanically formed branch collars shall be as approved by local National Standard Plumbing Code, B.O.C.A., I.A.M.P.C., or S.B.C.C.

D. Cast Iron Pipe - Hub and Spigot: Joint shall be firmly packed with white oakum and filled with molten lead not less than one inch (1") deep. Joints shall be well caulked. For gasketed joints, hub, spigot, and gasket manufacturer to prevent damage and facilitate joining.

E. Cast Iron Pipe - No Hub: Couplings shall be used to join pipe in accordance with pipe manufacturer=s recommendation and shall be installed using torque wrench made for this purpose. Vent piping shall be joined by standard no-hub couplings. Soil, waste, and rainwater piping shall be joined with heavy duty, Husky or Tyler, no-hub couplings.

3.04 UNDERGROUND PIPING

A. Underground ferrous piping unless noted otherwise shall have factory applied corrosion resistant coating. Fittings and weld joints shall be coated with product specified here-in.

3.05 UNIONS

A. Provide unions at connections to valves and equipment to allow dismantling of pipe connections without cutting pipe.

B. Flanged connections are considered as unions.

3.06 REDUCERS

A. Use eccentric reducers for all pipe size changes in horizontal straight thru piping 1 1/4" and larger.

B. Eccentric Reducers

1. Reducers shall be installed with flat on top in chilled water and hot water piping

systems.

2. Reducers shall be installed with flat on bottom in steam piping.

C. Concentric reducers shall be used only in vertical piping.

3.07 INSTALLATION OF INSTRUMENTATION

A. Provide water pressure gauges and gauge manifolds, gauge connection points, thermometers and wells, test wells, and instrument ports in locations specified or indicated on the drawings.

B. Mount instruments in locations and positions to give accurate reading of the measured condition and to be readable from the floor. Locate pairs of instruments to allow reading of both from same point.

C. Mount instruments for reading pressure drops with taps at points for which published pressure drop data are available.

D. Locate test walls with bore more than 30-degrees above horizontal to permit retention of heat transfer material. Locate test wells at chillers to allow use of glass thermometers up to 24" long.

E. Select wells for thermometers in piping with 3-1/2" stems for 6" and smaller piping and 6" stems for 8" and larger piping, with extension necks of length to extend clear of insulation.

F. Instrument Locations:

1. Where indicated on the drawings.

G. Calibrate and adjust instruments after installation. Set up air filter gauges for clean filter pressure drop.

H. Mount pressure and temperature measuring stations in side of tee or in coupling on large

pipe.

3.08 TESTING

A. All piping shall be tested to the pressure and for the period of time listed, and shall hold the specified pressures at the low point of the system for the specified length of time without perceptible loss of pressure of leakage.

1. Space Heating, Chilled Water, Hot Water, Compressed Air, Cold Water, Domestic Hot Water, and Hot Water Circulation Piping: One hundred twenty-five pounds hydrostatic pressure for two hours (125 psig - 2 hours).

2. Soil, Waste, and Vent Piping: A water test shall be applied to the system in sections. Each opening shall be tightly plugged except the highest opening of the sections, at least the upper ten feet of the preceding section shall be retested so that all but uppermost ten feet of the system shall have been submitted to a test of not less than 10' of water. The water level shall remain constant for not less than 15 minutes; the system shall be tight at all points.

3. Compressed Air Piping: 175 PSIG hydrostatic pressure for two hours.

4. Gas Piping - fifty pounds of air pressure for one hour. In addition each joint and connection shall receive a soap bubble test.

5. Correct or replace items shown by test to be defective and retest to assure tightness.

3.09 CLEANING

A. All water piping shall be thoroughly flushed. All strainers and aerators shall be cleaned after flush.

B. After cleaning, fill systems with water, vent air from piping and equipment, start pumps and verify flow.

3.10 DISINFECTIONS OF PIPING

A. All domestic water supply lines shall be disinfected BEFORE THEY ARE PLACED IN OPERATION. The system shall be filled with a chlorinated water solution containing not less than fifty (50) parts per million of chlorine solution. Following a contact period of not less than twenty-four (24) hours, the chlorinated water shall be flushed from the system with clear water until the residual chlorine content is not greater than two-tenths (0.2) parts per million.

B. Contractor shall submit to the Architect, in triplicate a letter of certification from an independent Testing Lab acceptable to the Georgia Department of Public Health stating that the above disinfection procedure has been completed satisfactorily.

3.11 DIELECTRIC CONNECTIONS

A. Use dielectric couplings to join pipe of dissimilar metals.

3.12 INSTALLATION OF STEEL EQUIPMENT BASES AND SUPPORTS

A. Establish base location, coordinate for 4" housekeeping pad under each base, anchor base to pad.

B. Suspended Equipment

1. Attach steel members to structure over suspension points on equipment.
2. Install hanger rods and bolts at suspension points, attached to steel members.
3. Mount equipment with rods and bolts to suspension points.
4. Adjust hanger rods and bolts to make equipment level.
5. Make screwed attachments secure by double-nutting.

C. Coordinate installation of bases and supports with vibration isolation requirements where required.

3.13 PUMP SUCTION DIFFUSERS AND STRAINERS

A. Contractor to furnish and install pipe support leg positioned to relieve any stress on pumps.

B. Brass start-up strainer shall be removed after flush and reasonable running period and before system balancing procedure.

C. Allow ample space for removal and service.

3.14 VALVES

A. All gate, globe, butterfly, and ball valves shall be installed with stems above the horizontal position.

3.15 AIR VENTS

A. Automatic Air Vents shall be installed on Air Purger and as indicated on plans. Manual Air Vents shall be installed at all high points in piping, at all coils and as required for purging system whether shown or not.

B. Automatic air vents shall be piped to drain.

C. Install a 1/4" copper gooseneck on manual air vents.

3.16 Adjust pressure reducing valves serving compression tanks to maintain between 5 and 10 PSIG at the highest point in the system.

3.17 VENT PIPING

A. Provide vent piping from the relief opening of each gas pressure regulator and gas pressure switch in the boiler gas trains to a point outside the building at least 10' above finished grade, and at least 5' from any building opening. The vent connection to each regulator or switch shall be increased when 2 or more appliances have been connected so that the common vent will be equal or greater than the sum of the cross sectional areas of all individual vents involved. The common vent shall be a minimum of 3/4" size. Vents from regulators in high pressure gas piping, above 2@ psig, shall each be run independently to the exterior.

Terminate vent lines with an OPW 113 flash arrestor.

END OF SECTION

PART 1-GENERAL

1.01 Scope

A. Division 1 of these Specifications is incorporated herein.

B. The work covered by this division of the Specifications shall conform to all ordinances and regulations of the County, City, State and/or any Authority having jurisdiction. The work shall conform to the latest issue of Pamphlet No.54, 90A and 96 of the National Board of Fire Underwriters Building code, except where other codes exceed these requirements.

1.02 Obtain all necessary permits and inspections required for the installation of this work and shall pay for all charges incidental thereto. Deliver to the Architect all certificates of said inspection issued by the authorities having jurisdiction.

1.03 Equipment Installation and Workmanship:

A. The Architect reserves the right to direct the removal of any item which in his opinion does not present an orderly neat and good workmanship appearance, provided such items can be installed in an orderly manner by the usual methods. Such removal and replacement shall be done when written instructions are received from Architect.

B. In no case shall any equipment be installed contradictory to the manufacture=s recommendations.

1.04 Submit catalog data in six (6) copies for approval, as described in Section 15010, paragraph 1.06.

1.05 The Contractor shall be responsible for a trouble free system in every respect for twelve (12) months after final inspection.

1.06 Test, Adjust and Balance: (To be monitored by Architect/Engineer)

Contractor shall test system and submit balance report with three copies to Architect/Engineer for approval. Testing company shall be member of AABC or NEBB.

A. Report all CFM air quantities.

B. Report test on new roof top unit.

C. Report calibration point on controls.

D. Report outside Air CFM.

1.07 Guarantee:

A. All work furnished under the HVAC trade shall be guaranteed for a period of one year form date of acceptance thereof to be free of defects in workmanship and materials.

B. The Contractor shall agree to replace the refrigeration compressor assembly in which defects in material or workmanship become manifest under normal conditions of use and service of a period of 5 years, whereby it fails to operate and which by examination shall be disclosed to be faulty or defective.

PART 2-PRODUCTS

2.01 Air Conditioning Unit:

A. Unit shall have factory assembled, piped, internally wired and fully charged. All units shall be designed to operate at outdoor ambient temperatures as high as 100 degrees F. Units certified by ARI Standard 210 and 270. National Rating Standard of the Air Conditioning and Refrigeration Institute. heating/Cooling units design is certified by American Gas Association (A.G.A.) specifically for outdoor applications using propane or natural gas. All cooling units are Underwriter=s Laboratories listed. All units shall be designed for indoor installation. Units have welded shell, 3600 RPM compressors.

B. Casing: All access panels are gasketed and provided with fasteners and handles. One inch, one pound density foil-faced glass fiber insulatin is on heat exchanger section. Same composition mat-faced insulatioon is in evaporator section.

C. Refrigeration Controls: Refrigeration controls include condenser fan, evaporator fan and compressor contactors, and 24 volt transformer. Safety controls include winding thermostat and compressor overloads. Cycle guard prevents unit cycling on overloads and safety controls to be reset at thermostat inside the builidng. Each circuit of the unit has a separate set of refrigeration controls.

D. Compressor: All units have welded shell hermetic compressors, 3600 RPM. Crankcase heaters shall be required on all compressors.

E. Evaporator Coil: Units have a 2-row coil. All coils have seamless copper tubing of 3/8" OD, mechanically bonded to heavy duty aluminum fins. Factory pressure and lead tested at 300 PSIG. Expansion valves standard.

F. Drain Pan: Evaporator pan internally sealed insulated. Threaded drain connection in evaporator section.

G. Condenser Coil: 5-ton units have a 2-row coil. P:rimary surface 3/8" OD seamless copper tube. The secondary surface is mechanically bonded to heavy duty aluminum fins. Factory pressure and leak tested 425 PSIG.

H. Indoor Air Fans: Belt driven, forward curved, centrifugal type fans equipped with adjustable motor sheave standard. The motor is thermally overload protected. Permanently lubricated fan motor bearings. Motor/fan assembly completely isolated from unit with rubber mounts.

I. Condenser Fans: Direct drive, staticaly and dynamically balanced propeller fans. Weather-proof fan motors UL listed for outdoor use. Units have built in thermal overload protection. Permanently lubricated motor.

J. Heat Exchanger: Use corrosion resistant embossed, formed and seamed 18 gauge aluminum steel. Factory tested for gas leaks. Stress relieved, free floating design. Located upstream of cooling coil.

2.02 Split-System Heat Pump Units: (Open)

2.03 Indoor Section: (Open)

2.04 REFRIGERATION PIPING

A. Refrigeration piping shall be seamless copper tubing, dehydrated type AACR,@ with wrought copper long radius elbows, made up with sweat type silver solder joints. Vibration eliminator pipes where recommended by the compressor manufacturer or where required to prevent transmission of vibration shall be of the bellows type, with bradied bronze wier protection. Refrigerant pipe design and sizes shall be in strict conformance to the recommendations of the equipment manufacturer, and to the Equipment Standards of the Air Conditioning and Refrigeration Institute, Inc., except that Freon suction risers shall be for a gas velocity not less than 2,000 feet per minute.

B. Oil lift traps shall be required at the base of all vertical riser pipes or as recommended by the manufacturer.

C. Refrigeration pipe insulation: The suction piping shall be insulated with 3/4" thick Armstrong Armiflex, foam rubber pipe insulation.

2.05 REFRIGERANT AND OIL

A. The entire refrigerant charge shall be of the correct amount of pounds, as recommended by the system manufacturer. The Contractor shall be required to perform all pressure test, vacuum test, halide torch test, and operation test. The Contractor shall guarantee the refrigeration piping system free from leaks for one year. Any refrigeration leaks which are detected within the warranty period shall be repaired by the Contractor at no additional charge to the owner. Any refrigerant which leaks out shall be replaced at the time of repair.

B. Each refrigeration system shall be furnished with a complete charge of lubricating oil for the compressor crankcase. The oil shall be of the type recommended by the compressor manufacturer.

2.06 SUCTION LINE ARMAFLEX INSULATION:

A. Rubber Pipe Insulation: Shall be Armstrong Armaflex or approved equal condensate drain pipe-1/2" thick.
Refrigeration Suction Pipe: 3/4" thick. As much of the insulation as possible shall be slipped on to the piping as the piping is being connected in order to keep from cutting the insulation. All butt ends and any necessary longitudinal joints shall be sealed with rubber based adhesive.

2.07 ABOVE GROUND DUCT WORK

A. (A/C Ducts) All duct work supply, return and exhaust except flexible run-outs shall be galvanized steel (cross break on all sides). All duct work shall be new and securely suspended and hung as per SMACNA Manual. All duct work shall be concealed from view above ceiling. Follow good sheet metal practice as outlined Chapter 1 of 1972 ASHRAE System 1970 (Forced Air Systems).

END OF SECTION

SECTION 26 00 00

BASIC MATERIALS AND METHODS

PART 1 - GENERAL

1.01 This section covers basic electrical materials and wiring, and all items of equipment not otherwise specified under other sections of the Specifications.

1.02 APPLIANCE AND EQUIPMENT CONNECTIONS

A. Provide PVC insulated flexible cord sets for all cord and plug connected contract building appliances and equipment. Cords shall be sized in accordance with electrical circuits indicated on the drawings. Multiple conductor cords shall be type ASO@ cable with PVC jacket and green insulated ground conductor.

1.03 MOTORS

A. Motors except where specified herein, shall be furnished under other sections of the Specifications. Confirm motor locations.

B. Motors shall be of the voltage and phase characteristics as shown on the drawings.

C. The horsepower ratings indicated are for guidance and do not limit the equipment size. When electrically driven equipment furnished under other sections of these Specifications differs from the contemplated design, the Contractor shall be responsible for the necessary adjustments to the wiring, disconnect devices, and branch circuit protection to accommodate the equipment installed.

1.04 MOTOR WIRING

A. Furnish and install power wiring to motors and mechanical equipment. Wiring into motor or equipment terminals shall be complete with connections through associated disconnect switches, and motor starters, including branch circuit power line controlling devices.

B. Receive, store, and install individually mounted starters and controllers for motors.

C. Wiring shall be in conduit, with a final connection to rotating equipment made through a section of PVC jacketed flexible conduit.

D. Multi-speed, reversible, and reduced voltage start motors shall be connected as recommended by equipment manufacturer.

E. Motors shall be grounded as specified under AGrounding System@.

1.05 CONTROL WIRING

A. Control wiring and empty conduits for control wiring to be furnished under this section shall be furnished only to the extent indicated on the electrical drawings.

B. Control wiring is defined as that wiring which provides connections between control circuit elements and does not provide the power circuit into motor or heating equipment terminals. Where a control device, such as push-button, thermostat, firestat, is to be installed in the branch circuit power lines, these devices shall be received, stored, and installed as indicated the drawings and called for under AMotor Wiring@ and AElectric Heaters@

C. Coordinate the installation of branch circuit power line control devices with requirements in other sections of the Specifications.

1.06 RATED PENETRATIONS

A. All rated wall and floor penetrations shall be sealed with a UL listed sealant to maintain the rating.

PART 2 - PRODUCTS

2.01 PLYWOOD BACKBOARDS

A. Provide flame retardant plywood backboards for distribution equipment surface mounted in equipment areas such as mechanical rooms, electrical closets, and equipment rooms.

B. Backboards shall be minimum 3/4" thick and sized to accommodate equipment indicated on the drawings.

C. Secure backboards to the building structure and paint with two coats of fire resistant flat black Duron paint.

2.02 DISCONNECT SWITCHES

A. Disconnect switches shall be quick-make, quick-break Underwriters= labeled Heavy Duty safety switches. Switch ratings shall be for the applied voltage and current.

B. Disconnect switch enclosures:

1. For indoor - NEMA 1 general purpose.
2. For outdoor - NEMA 3R raintight.

C. Manufacturers: General electric, Westinghouse, ITE, Square D.

D. Designate with permanent labels, the maximum allowable fusing capacity for fusible switches that are applied with conductors rated less than the switch rating.

E. Disconnects for 120V motors 2 HP or less shall be horsepower rated toggle switches in steel outlet boxes.

2.02 FUSES

A. Install fuses in fusible protective devices.

B. Provide NEC, dual element time-delay, or current limiting, fuses for specific applications only where indicated on the drawings.

C. Fuse specification - See Section 16181.

2.03 LABELS

A. Provide labels on the outside face of panelboards, switchboards, disconnect switches, motor starters, transfer switch, and contactors.

B. Labels shall be a micarta nameplate with 2" high white letters. Nameplates shall be red on emergency equipment and black on normal equipment. Secure labels with screws or pop-rivets.

PART 3 - EXECUTION

3.01 UTILITY COMPANY COORDINATION

A. Coordinate with the electrical Utility and verify location and orientation of service equipment and associated metering equipment.

B. Provide and install all materials designated by the Electrical Utility to be furnished by ACustomer@. This may include but not be limited to, compression lugs for transformer secondary connection, concrete pad for serria transformer, grounding material, meter base and empty conduits for primary lines.

3.02 BRANCH CIRCUITS

A. Provide dedicated neutral for any branch circuit serving dimmable lighting fixtures and copying machines.

END OF SECTION

SECTION 26 05 33

CONDUIT

CARTER WATKINS ASSOCIATES ARCHITECTS, INC.
OCONEE COUNTY SENIOR CENTER ADDITION
FEBRUARY 05, 2021

PART 1 - GENERAL

1.01 GENERAL

1.01 Where the word “conduit” is used in this specification, it shall mean thick wall rigid metal conduit, rigid non-metal conduit or electrical metallic tubing. Where the words “flexible conduit” are used, it shall mean jacketed liquid-tight or unjacketed flexible metal conduit.

1.02 Conduits shall bear the Underwriters Laboratories listing mark.

1.03 Conduits for branch circuit wiring shall be 2" or larger.

PART 2 -- PRODUCTS

2.01 TUBULAR CONDUIT

A. Non-metallic conduit shall be Schedule 40, 90-degrees C. Rated polyvinyl chloride, UL listed for underground burial.

B. Metallic conduit shall be galvanized steel.

C. Intermediate Metal Conduit (IMC) may be used in lieu of rigid metal conduit. IMC shall be hot-dipped galvanized steel manufactured in accordance with UL Standard #6 or # 1242.

D. Flexible Conduit:

1. Flexible conduit shall be a minimum length of 8" and at least six times the trade diameter for conduit ½” or larger.

2. Flexible conduit for connections to lighting fixtures shall be 3/8" diameter and minimum 48" and a maximum 72" in length, and shall be non-jacketed with a continuous strip cold rolled galvanized steel core.

3. Liquidtight flexible conduit shall be a minimum 2" diameter.

4. Liquidtight and non-jacketed flexible conduit shall be manufactured by Electric-Flex, Anaconda or Flexi-guard.

E. Steel conduit shall be manufactured by Republic, Wheatland, Allied, Triangle, or Steel duct.

F. PVC conduit shall be manufactured by Carlon, Sedco, Contex, or Certainteed.

2.02 FITTINGS

A. Where electrical metallic tubing is used indoors, connectors and couplings shall be steel thread set screw. Make all joint connections tight for a continuous low impedance ground return.

B. Where electrical metallic tubing is used outdoors, connectors and couplings shall be UL listed rain tight, steel compression type. Connectors shall be complete with insulated throats.

C. Cast or split threadless couplings are not acceptable.

D. Connectors and couplings for rigid steel or intermediate metal conduit shall be steel threaded type.

E. Conduit passing through concrete or masonry walls underground shall be complete with watertight wall seal gland fittings, OZ type WSK. Ground bushings shall be OZ type BLG.

F. Connectors and couplings shall be manufactured by Thomas and Betts, Efcor, Raco, Appleton, Steel City, ETP, or Erickson.

G. Flexible Conduit:

1. Connectors for flexible conduits shall be UL listed with insulated throats.

2. Connectors for liquidtight conduit shall be compression type, made of steel and provided with O-ring. Connectors metal ferrule shall provide positive ground circuit

continuity.

3. Connectors for non-jacketed flexible conduit shall be squeeze-type and made of malleable iron.

4. Flexible conduit connectors manufacturers shall be Raco, Appleton, Efcor, Thomas and Betts, or Ideal.

H. Where a conduit run crosses a structural expansion joint, provide expansion fitting, OZ type DX. The expansions fitting shall be electrically continuous or the contractor shall install a bonding jumper across it.

PART 3 - EXECUTION

3.01 WORKMANSHIP

A. Conduit bends and offsets shall be made with conduit hickey or conduit bending machine. Crushed or deformed conduits shall not be installed.

B. Exposed conduits shall be run parallel or at right angles to adjacent walls.

C. Prevent lodgement of plaster, dirt or trash in conduits, boxes and fittings.

D. Store conduit in racks above ground.

3.02 INSTALLATION

A. Provide unjacketed flexible conduit connections to lighting fixtures in lift-out type ceiling to an outlet box located above the ceiling.

B. Provide liquidtight flexible conduit for short final connections (3' maximum) to rotating or vibrating machinery and equipment including transformers.

C. Provide non-metallic (PVC) conduits for outdoor lighting branch circuit wiring, secondary

service conductors between power company transformer and main switchboard, and at other location where specifically indicated on drawings.

D. Concealed Conduit:

1. Conduits shall be concealed except as noted or shown otherwise.
2. Concealed conduits shall be above ceiling, in building walls, or in floor construction.

3. Concealed conduits in building walls shall be installed vertically except when:

   a. The wall is or framing stud and gypsum board construction, and
   b. Adjacent outlet boxes are within 10' of each other; and
   c. Outlets are in common wall (do not turn corners; and
   d. Removing the horizontal conduit will not affect upstream or downstream devices (run shall be a dead end), and
   e. The total horizontal run does not exceed 20',
   f. A maximum of four horizontally connected outlet boxes are on each vertical conduit.

E. Conduit risers in masonry-block walls shall be installed before walls are built and run vertically in walls. Where existing block walls are to have conduit, run in furring space before gypsum board is installed.

F. Conduits shall be grounded as provided by the National Electrical Code and these specifications. Conduits installed below grade or with non-galvanized male threads shall have threads painted with ALPS Zinc Rich@.

G. Conduits installed underground or in on-grade floor slabs shall be rigid metal conduit with threaded couplings, except where otherwise noted.

H. Rigid metal conduit shall be used for all runs likely to be subject to physical injury.

I. Feeder circuits (panelboards, motor control centers, etc.) shall be rigid metal conduit or intermediate metal conduit.

J. Conduits run above ceilings shall be supported from the building structure, independent of ceiling system support. Install on bottom of bar joists or structures where practical, otherwise secure conduit above ceilings with threaded rods and hangers. Parallel groups of conduit may be supported from a trapeze channel with each conduit secured to the channel with a spring clip device. Supports shall occur on minimum 10 foot centers and within 3 feet of an outlet or junction box.

K. Feeders and branch circuit conduits installed exposed shall be supported from the bar joist or structure. Suspension below bar joist and structure or channel supports is acceptable up to 12"; greater suspension must be approved by the Architect.

L. Conduits installed underground outside building foundations shall be a minimum of 24" below finished grade and shall be encased in 3000 psi concrete envelope with 4" coverage; except conduits for outdoor lighting branch circuit wiring, telephone service, and cable television service, which shall be run unencased direct buried at a minimum depth of 30" below finished grade.

M. Conduit larger than 3/4" installed in ground floor concrete slab shall be covered top and bottom with a minimum of two (2) inches of concrete. Thicken slab by depressing waterproof barrier on gravel to provide minimum cover, or run conduit under the concrete slab and encased in concrete.

N. Conduit installed in structural concrete slabs shall be in accordance with the requirement of the ACI 318-63 Building Code Requirement for Reinforced Concrete@ publications.

O. Exposed conduits below 8' shall be rigid metal conduit. Support conduits on the ceiling or wall by means of the two screw galvanized clamps or trapeze hangers.

P. Empty conduits shall have a Polyolefin line (200 lbs. Strength) pulled into conduit.

Q. Seal unused conduit ends with plastic or metal caps.

R. Elevated slab floor penetrations for conduit shall be provided with sleeves. Sleeves shall extend approximately one inch above finished floor slab and sealed tightly with fire safe

insulation.

S. PVC conduit shall not be installed indoors.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This section includes furnishing and installing all materials and providing all labor and supervision pertaining to Cat 6 Voice/Data Wiring support systems cabling, devices, devices, plates, equipment racks, active components and associated components.

B. QUALITY CRITERIA AND STANDARDS

1. Voice/Data support equipment shall comply with applicable UL, NEC, and NEMA standards and requirements and shall be UL-listed and labeled.

PART 2 – PRODUCTS

2.1 MATERIALS:

A. Station jacks, faceplates, and associated components; furnished and installed by Contractor.
B. Patch panels and type 110/66 punch-down blocks: furnished and installed by Contractor.
C. Voice/data workstation cable: furnished and installed by Contractor.
D. Associated materials and components:

1. Backboard: Telephone and data backboards shall be ¾" thick B_D INT-DEPA plywood. Mount D finish toward wall. The backboard shall be divided so that each zone (voice/data) is clearly separated and marked from one another. The backboard shall be painted with 2 coats of fire-resistant white paint. Unless specifically indicated on the drawings, minimum backboard size shall be 4' x 8'.

2. Cable support: Provide Cable Treys for all above-ceiling wiring throughout the entire building. Size as required – submit shop drawings for approval.

PART 3 – EXECUTION

3.1 INSTALLATION:

A. Installation of Voice/Data workstation cable, station jacks, faceplates, and associated components, rack equipment, patch panels, and punchdown blocks is by the contractor.

END OF SECTION

SECTION 28 31 00

FIRE ALARM SYSTEM

PART 1 - GENERAL

1.01 SCOPE

A. Furnish and install a complete, new, proprietary fire alarm system as described herein and as shown on the plans. The system shall be wired , connected, and left in first class operating condition. Tie all new fire alarm elements into the existing fire alarm system. Provide complete shop drawings and submittals.

B. The products and installation shall conform to the requirements set forth in the following standards:

1. NFPA 70 (including article 760), current Edition
2. NFPA 72, current Edition
3. NFPA 101, current Edition
4. The IBC International Building Code and IFC International Fire Code as amended and adopted by the local authority.
5. State of Georgia Rules of Safety Fire Commissioner.

1.02 SYSTEM ARCHITECTURE

A. The system shall consist of:

1. A complete microprocessor-based non-coded, closed circuit, completely supervised zone indicating fire alarm system to monitor hardwired inputs from normally open contact devices.

2. Capacity:

a. Eight to thirty-two initiating device circuits with two spares.

b. Two to six indicating appliance circuits with two spares.

c. Five to fifteen amp power output.

B. Circuit styles shall be NFPA 72 styles as follows:

1. Indicating device circuits: Style B.
2. Indicating appliance circuits: Style Y.

1.03 SYSTEM INITIATION

A. System initiation shall occur when any initiating device is in alarm and when any fire suppression system is activated.

B. Supervisory Condition: An alarm condition for any of the following items shall be considered a supervisory condition which is second priority to a fire alarm condition:

C. Fire Alarm Condition: An alarm condition for any initiation device except those listed in the previous paragraph shall be considered a fire alarm condition.

1.04 AUTOMATIC EMERGENCY CONTROLS

A. If a duct-mounted smoke detector is in the alarm condition, the air handling unit serving that duct shall be shutdown and all smoke dampers in that air handling unit system shall close. Provide control modules at locations coordinated with the Division 15 Control. The wiring distance from the control module to the AHU control or damper controls shall not exceed three feet.

1.05 OCCUPANT NOTIFICATION

A. Upon system initiation, all evacuation signals shall activate. Provide Voice Annunciation, PA System and all requirements per NFPA and local authority.

1.06 FIRE DEPARTMENT NOTIFICATION

A. Upon system initiation, a fire alarm condition shall cause activation of a supervised signal to notify the local fire department. Coordinate with the fire department and provide the proper city connection circuit whether reverse polarity, local energy, parallel telephone, shunt, or dry contact connection.

1.07 INTEGRITY MONITORING

A. The system shall contain independently monitored initiation circuits. A fault in any one circuit shall not affect any other circuit. The alarm activation of any point shall not prevent the subsequent alarm operation of any other point.

B. There shall be independently fused indicating appliance circuits for alarm notification devices. Disarrangement circuits of any circuit shall not affect the operation of other circuits.

C. Ground fault detection on all circuits on either the plus or minus side.

D. All alarm initiating wiring, signal circuit wiring, annunciator wiring and, control wiring to remote relays shall be monitored for integrity.

E. The incoming power to the system shall be monitored for power failure. A green Apower on@ LED shall be displayed continuously while incoming power is present.

F. The Control Panel Modules shall be electrically monitored for module placement and LED burnout.

G. Any failure in wiring integrity or system disarrangement as described above shall be considered a trouble condition which is third priority.

1.08 CONTROL PANEL OPERATOR=S INTERFACE

A. A control panel shall include an operator=s interface for annunciation and manual controls. The interface shall consist of a LED adjacent to each message.

B. Under normal condition, the operator=s interface shall display a APOWER ON@ message.

C. Should an abnormal condition be detected, the appropriate LED (zone number or trouble) shall flash. The panel audible signal shall pulse for fire alarm and sound steadily for trouble conditions.

D. Alarm Silencing: Should the AAlarm Silence@ button be pressed, all audible fire alarm notification appliances shall be deactivated. An override of the automatic fire alarm notification shall be annunciated as a trouble condition.

E. System Reset

1. The ASystem Reset@ button shall be used to return the system to its normal state after all abnormal conditions have been remedied.

2. Should an abnormal state continue to exist, then the associated notification and control

functions shall not reset.

F. Function Keys, Display of System Detail Information

1. System shall include panel mounted volt meters and ammeters for monitoring battery voltage and battery charge current.

2. The system shall have provisions for disabling and enabling all circuits individually for maintenance or testing purposes. Additionally, when disabled, ground isolation shall be implemented to aid in location and repair of any ground fault conditions.

G. System Trouble Reminder: Should a trouble condition be present within the system and the audible trouble signal silenced, the trouble signal shall resound at preprogrammed time intervals to act as a reminder that the fire alarm system is not 100% operational. Both the time interval and the trouble reminder signal shall be programmable to suit the owner=s application.

1.09 WALK TEST

A. The system shall be capable of being tested by one person. The panel shall automatically reset itself after the alarm.

B. The momentary disconnection of an initiating or notification appliance circuit shall be a trouble condition. The panel shall automatically reset itself.

C. Any momentary opening of an initiating or notification appliances circuit wiring shall cause the alarm notification appliances to sound for 4 seconds to indicate the trouble condition.

1.10 QUALITY ASSURANCE

A. Acceptable manufacturers shall be regularly engaged in the manufacture of fire alarm systems at least 5 years and have a fully equipped, factory trained and authorized service organization within 100 miles. Acceptable Manufacturers: Simplex, EST, Pyrotronics.

B. The equipment supplier shall be regularly engaged in the manufacturer or shall be the manufacturer=s authorized representative and shall provide personnel factory trained and approved for installation, certification, final connections, programming, testing, training, warranty service, and maintenance.

C. Service availability: The supplier shall have on hand sufficient spare parts inventory, necessary test and diagnostic equipment, and have a fully equipped service organization capable of guaranteeing response time within 8 hours of emergency service calls, 24 hours a day, 7 days a week to service completed systems. Emergency shall be required for significant loss of coverage.

D. All materials, installation, and workmanship shall be guaranteed against defects for (1) one year from the start up and beneficial use of the system or installation certification, whichever is later.

E. The contractor shall guarantee all wiring and raceways to be free from mechanical or electrical defects for one (1) year from the startup and beneficial use of the system or installation certification, whichever is later.

F. Warranty service for the equipment shall be provided by the manufacture=s factory trained representative during normal working hours, Monday through Friday excluding holidays at no cost to the owner.

1.11 SUBMITTALS

A. In compliance with Division 1 of these specifications, submit for Architect=s review, six (6) copies of the following product data, shop drawings, and other submittals:

1. Specification data sheets on each individual system component clearly indicating the equipment to be supplied and its type, size, rating, style, catalog number, and appearance.

2. Complete one-line diagrams showing all equipment and the size, type, and number of all conductors. (Point to Point Diagrams)

3. Installation manuals including roughing in drawings, details, and conductor terminations for each component.

4. Calculations clearly showing the required amount of battery reserve needed and the proposed battery capacity.

5. Copies of certificates from the manufacturer indicating supplier=s status as an authorized representative and listing employees factory-trained for the services described in paragraph

1.13B.

6. Voltage drop calculations on worst case notification and signaling line circuits and acceptable limits.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS

A. All equipment shall be new and unused. All components and systems shall be designed for uninterrupted duty. All equipment, materials, devices, and other facilities shall be the best suited for the intended use and shall be the standard product of a single manufacturer.

B. Provide electrical products which have been listed by Underwriters= Laboratories, INC., which comply with NEMA Standards, and which are approved by Factory Mutual Research. All control equipment is to be listed under U.L. Category UOJZ as a single control unit. A partial listing shall not be acceptable. The systems controls shall be U.L. listed for Power Limited Applications power NEC 760.

2.02 COMPONENTS

A. All Control Panels shall have at least the following components/capacities:

1. Twenty-four volt dc power sufficient to operate the control panel and its circuits during alarm and still maintain at least two amps of spare capacity. The control panel shall receive 120VAC power (as noted on the drawings) from two (2) dedicated circuits.

2. The system shall be provided with sufficient battery capacity to operate the entire system upon loss of normal 120 VAC power in a normal supervisory mode for a period of twenty-four (24) hours with five (5) minutes of alarm operation at the end of this period. The system shall automatically transfer to the standby batteries upon power failure. All battery charging and recharging operations shall be automatic. Battery chargers shall be capable of recharging all batteries to one percent capacity in forty-eight hours. Battery, battery charger, ammeter and voltmeter shall be panel mounted.

3. All circuits requiring system operating power shall be 24VDC, power limited in compliance with NFPA 70 Article 725, and shall be individually fused at the control panel.

4. Signaling line circuit interface modules (cards).

5. Indicating appliance circuits as required for the quantity of notification appliances to be served from the panel. The circuits shall be the reversing polarity type.

6. Operating interface panel.

2.03 MANUAL STATIONS

A. The station body shall be so constructed that chips and scratches will not expose metal. All stations shall be mastered keyed with the control equipment. When actuated, the condition shall be visually apparent.

2.04 DETECTORS

A. Sensor Bases: Sensor bases shall allow interchangeability of sensor heads: photoelectric, ionization, and heat-type sensors. Sensor bases shall supervise proper head installation. Heads shall be secured with an anti-tamper device. Sensor bases shall provide a remote LED output and have an integral LED for power-on, alarm, and trouble indication. Sensor bases shall have a magnetically-operated functional test feature.

B. Sensor Heads: The sensors shall be sealed against rear air-flow entry.

1. Area smoke sensors shall be photoelectric-type. Have insect screens. The photo chamber shall be field cleanable. Nominal detector sensitivity shall be 1.4% per foot obscuration with a range of 1% to 1.84%. Regardless of sensitivity settings, the detector=s stability shall be un-affected by high velocity. No radioactive materials shall be used.

2. Duct-mounted smoke sensors shall have photoelectric-type smoke sensors, sampling tubes as required, and auxiliary alarm relay with two Aform C@ contacts. The duct-mounted smoke detectors shall be furnished under this section, installed under Division 15, and connected to the fire alarm circuit under this section. The photo chamber shall be field cleanable. Each duct-mounted smoke detector shall be perform properly with the air velocity present at its location.

3. Heat sensors shall be self restoring.

C. The heat detector in the elevator machine rooms and elevator shafts shall be non-restorable type and shall be the fixed temperature type set to activate at 135-degrees F. The detectors shall include two N.O. 120V contacts. Provide two (2) spare heat detector heads.

D. Remote Device Alarm Indicator:

1. For each duct-type smoke detector located in concealed spaces, provide and install a remote light emitting diode (LED) indicator, complete with stainless steel faceplate and label, 24V DC operation.

2. For above ceiling devices, remote LED=s shall be recessed in wall 12" below ceiling.

3. Labels shall be engraved micarta with white 1" letters on red background, and shall identify the HVAC system associated with the detector, as well as the location.

4. Where a concealed detector is located annunciated by a graphic annunciator, the remote device alarm indicator is not required.

2.05 EVACUATION SIGNALS

A. Evacuation signals shall mount to a standard four inch square outlet box and shall be mounted in a semi-flush manner on the wall.

B. Horns shall be nominally provide a minimum 87dB at 10 feet as measured per U.L standard 464.

C. ADA visual evacuation units shall be Xenon strobe type, minimum 75 candela intensity, with 1-3Hz flash rate and 0.2 sec. flash duration.

2.06 EXTINGUISHING SYSTEM SWITCHES

A. Sprinkler Flow, Pressure, and Tamper Switches: Flow, pressure and tamper switches are provided under another division. Provide monitor module for each switch and connect thereto.

B. Tamper switches (N/C contacts) shall not be connected to initiating device circuits with N.O. initiating devices.

2.07 FIRE SHUTTER CONTROLS

A. Where shutters in rated in walls are normally held open, provide ceiling mounted smoke detector(s) and control module for shutter controls. Provide 120 volt power supply to each shutter, and connect to shutter release device through the Form-C contacts, per shutter manufacturer=s instructions.

2.08 REMOTE ANNUNCIATION

A. Provide and install a flush or semi-flush wall-mounted remote annunciator to identify device and floor of alarm incident.

2.09 WIRING

A. All wiring shall be marked in accordance with NEC 760-23, approved by local authorities having jurisdiction for the purpose, and shall be as recommended by the fire alarm system manufacturer.

2.10 CIRCUIT TRANSIENT PROTECTION

A. Provide circuit transient protection on all wiring including shields which enters or leaves a building. The protector shall use MOV technology and comply with U.L. # 497B requirements. The protector shall fit on a standard 4" square, 2-1/8" deep electrical box.

2.11 MISCELLANEOUS

A. All other equipment as necessary.

PART 3 - EXECUTION

3.01 INSTALLATION

A. The system shall be installed by a licensed Electrical Contractor.

B. Deliver each piece of equipment in durable shipping cartons. Maintain cartons through shipping, storage and handling as required to prevent damage and eliminate dirt and moisture. Store cartons inside and protected from weather. Where necessary to store outside, elevate well above grade and

enclose with durable waterproof wrapping.

C. The entire system shall be installed in a workmanlike manner in accordance with the fire alarm system manufacturer=s manuals and wiring diagrams. The contractor shall provide all conduit, wiring, outlet boxes, junction boxes, cabinets and similar equipment necessary for the complete installation. Wiring shall be installed in dedicated conduit throughout.

D. Connections to water flow, pressure and tamper switches shall be through liquid-tight conduit.

E. All fire alarm system junction boxes above ceilings shall be painted red.

F. All penetrations of floor slabs and fire walls, shall be fire stopped in accordance with all local fire codes.

G. End of Line Resistors shall be provided as directed by the manufacturer.

H. Conceal wiring except in mechanical rooms and areas where other conduit and piping are exposed. Fasten flexible conductors bridging cabinet doors and protect against abrasion. Tie and support conductors neatly.

I. Number code or color code conductors, appropriately and permanently, for identification and servicing of the system.

J. A circuit transient protector shall be installed as close as practical to the point at which wiring enters or leaves a building. Install a maximum 28', No. 12 AWG grounding conductor in 1/2" conduit in as straight a line as possible to an effectively grounded cold water pipe or effectively grounded building steel.

K. The contractor shall comply with all requirements for permits and tests, shall provide all certificates and shall pay all costs for the same.

L. The manufacturer=s local authorized representative shall provide supervision of system installation and provide final system panel connections.

M. Programming and final adjustment shall be performed by the manufacturer=s authorized

representative, who shall have full responsibility for debugging and proper calibration of each component in the entire system.

N. Upon completion of the installation of the fire alarm system equipment, the electrical contractor shall provide to the owner, with a copy to the manufacturer=s representative, a signed written statement,

substantially as follows:

AThe undersigned, having engaged as the contractor on the (NAME OF PROJECT) confirms the fire alarm system equipment installed is in agreement with the wiring diagrams and written instructions and directions provided.@

3.02 ACCEPTANCE TESTING

A. After the system installation is complete, notify the authority having jurisdiction of the acceptance testing to be performed as required in the following paragraphs. Coordinate the scheduling of the acceptance testing with the authority having jurisdiction and the owner. At their discretion, acceptance testing shall be performed in the presence of an owner=s representative and the authority jurisdiction. During all acceptance testing, make available the as-built drawings and manufacturer=s installation instructions. The manufacturer=s authorized shall perform the acceptance testing. Correct all deficiencies found
in testing and re-test the corrected wiring or component.

B. Wiring Installation Testing: Provide testing of the installation wiring as required by NFPA 72H para. 2-2, Installation Testing.

C. Wiring Installation Certification: After completion of the wiring installation testing, complete parts 1and 3 through 9 of a certificate conforming to NFPA 72 figure 2-2.2. Submit a preliminary copy of the completed parts to the owner and the authority having jurisdiction.

D. System Operation Testing: Provide testing of system operation as required by NFPA 72H para. 2-3, System Testing. Where application of heat would destroy any detector, it may be manually activated.

E. Certification of System Operation: After completion of the system operation testing, complete part 2 of the certificate conforming to NFPA 72 figure 2-2.3.

3.03 CLOSEOUT SUBMITTALS

A. Deliver the following to the Owner within thirty (30) days after Owner receives installation certificate.

1. Final specification data sheets, calculations, certificates, and installation programming, operation, and maintenance manuals in suitable binders for maintenance use.

2. As-built drawings including final floor plans and point-to-point diagrams showing all device and splice locations.

3. The application program listing for the system as installed at the time of acceptance.

4. Name, address and telephone number of the authorized factory representative.

5. Final copy of system certification conforming to NFPA 72 figure 2-2.2. Mount on the inside of the central station panel door.

3.04 TRAINING

A. After submitting the installation certificate, the manufacturer=s authorized representative shall provide the services of the manufacturer=s trained representative for a period of eight (8) hours, during normal business hours, to instruct the owner=s designated personnel on the operation and routine maintenance of the system.

3.05 TESTING AND MAINTENANCE CONTRACT PROPOSAL

A. Testing and Maintenance Contract Proposal: The supplier shall propose a contract, including costs, for the testing and maintenance service described below for each of the first two years following the installation (The first year is the warranty year). Acceptance of the testing and maintenance contract is optional to the owner.

1. The testing and maintenance contract shall include the following services for the entire building:

a. Quarterly tests as required by the Joint Commission. (Operational test for one device per

initiating circuit per quarter.)

b. Inspection, testing, maintenance, cleaning, and record keeping as required by NFPA Standards 72, 72E, 72G, and 72H as applicable, including annual operating test for each smoke detector per NFPA 72E para. 8-3.41. Provide quarterly operational testing of 25% of all smoke detectors such that by year=s end all detectors have been tested.

c. Other services recommended by the manufacturer.

d. Replacement of all defective parts in the system.

e. Testing and maintenance shall be provided by the manufacturer=s factory-trained representative during normal working hours, Monday though Friday, excluding holidays.

2. Propose an indexed or fixed percentage increase to renew the testing and maintenance contract each year after the second year up to ten (10) years total. If an indexed percentage increase is chosen, indicate to what index the increase would be tied (For example: AAtlanta Service@ index).

3. Propose an additional labor cost for emergency service which is provided at times other than stipulated in paragraph 3.05.B.1.f above. Emergency service is required for the loss of coverage.

END OF SECTION

SECTION 31 31 16 - TERMITE CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following for termite control:

1. Soil treatment.

1.3 DEFINITIONS

A. EPA: Environmental Protection Agency.

B. PCO: Pest control operator.

1.4 SUBMITTALS

A. Product Data: Treatments and application instructions, including EPA-Registered Label.

B. Product Certificates: Signed by manufacturers of termite control products certifying that treatments furnished comply with requirements.

C. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

D. Soil Treatment Application Report: After application of termiticide is completed, submit report for Owner's record information, including the following as applicable:

1. Date and time of application.
2. Moisture content of soil before application.
3. Brand name and manufacturer of termiticide.
4. Quantity of undiluted termiticide used.

5. Dilutions, methods, volumes, and rates of application used.
6. Areas of application.
7. Water source for application.

E. Bait Station System Application Report: Submit report for Owner's records information, including the following as applicable:

1. Location of areas and sites conducive to termite feeding and activity.
2. Plan drawing showing number and locations of bait stations.
3. Plan drawing showing number and locations of monitoring stations and bait stations.
4. Dated report for each monitoring and inspection occurrence indicating level of termite activity, procedure, and treatment applied before time of Substantial Completion.
5. Brand name and manufacturer of termiticide.
6. Quantities of termite bait used.

F. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

A. Applicator Qualifications: A PCO who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment in jurisdiction where Project is located and who is experienced and has completed termite control treatment similar to that indicated for this Project and whose work has a record of successful in-service performance.

B. Applicator Qualifications: A PCO who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment in jurisdiction where Project is located and who is an experienced installer who employs workers trained and approved by bait station system manufacturer to install manufacturer's products.

C. Regulatory Requirements: Formulate and apply termiticides, and label with a Federal registration number, to comply with EPA regulations and authorities having jurisdiction.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: To ensure penetration, do not treat soil that is water saturated or frozen. Do not treat soil while precipitation is occurring. Comply with EPA-Registered Label requirements and requirements of authorities having jurisdiction.

1.7 COORDINATION

A. Coordinate soil treatment application with excavating, filling, and grading and concreting operations. Treat soil under footings, grade beams, and ground-supported slabs, before construction.

B. Install bait station system after construction, including landscaping, is completed.

1.8 WARRANTY

A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Special Warranty: Written warranty, signed by applicator and Contractor certifying that termite control work, consisting of applied soil termiticide treatment, will prevent infestation of subterranean termites. If subterranean termite activity or damage is discovered during warranty period, re-treat soil and repair or replace damage caused by termite infestation.

C. Warranty Period: Three years from date of Substantial Completion.

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

1.9 MAINTENANCE SERVICE

A. Continuing Service: Provide a proposal for continuing service, including monitoring, inspection, and retreatment for occurrences of termite activity, from applicator to Owner, in the form of a standard yearly (or other period) continuing service agreement, starting on the date of Substantial Completion. State services, obligations, conditions, and terms for agreement period and for future renewal options.

PART 2 - PRODUCTS

2.1 SOIL TREATMENT

A. Termiticide: Provide an EPA-registered termiticide complying with requirements of authorities having jurisdiction, in a soluble or emulsible, concentrated formulation that dilutes with water or foaming agent, and formulated to prevent termite infestation. Use only soil treatment solutions that are not harmful to plants. Provide quantity required for application at the label volume and rate for the maximum termiticide concentration allowed for each specific use, according to the product's EPA-Registered Label.

B. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

C. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. AgrEvo Environmental Health, Inc.; a Company of Hoechst and Schering, Berlin.
2. American Cyanamid Co.; Agricultural Products Group; Specialty Products Department.
3. Bayer Corp.; Garden & Professional Care.
4. DowElanco.
5. FMC Corp.; Pest Control Specialties.
6. Zeneca Professional Products.

2.2 BAIT STATION SYSTEM

A. General: Provide bait stations and, if applicable, monitoring stations, according to manufacturer's EPA-Registered Label for product, manufacturer's written instructions, and the following:

1. Provide number of stations, based on the dimensions of building perimeter indicated on Drawings, according to manufacturer's written instructions.
2. Comply with manufacturer's written instructions for termite management system. Provide not less than one cluster of stations per 20 linear feet (6 linear meters), based on the linear dimensions of building perimeter indicated on Drawings, consisting of not less than three stations per cluster.

B. Available Product: Subject to compliance with requirements, a product that may be incorporated into the Work includes, but is not limited to, the following:

C. Product: Subject to compliance with requirements, provide the following product:

1. Hexaflumuron: Sentricon System, Recruit II; DowElanco.
2. Hydramethylnon: Subterfuge; American Cyanamid Co., Agricultural Products Group, Specialty Products Department.
3. Sulfluramid: Systematic Termite Control, FirstLine GT; FMC Corp., Pest Control Specialties.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for moisture content of the soil, interfaces with earthwork, slab and foundation work, landscaping, and other conditions affecting performance of termite control. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's written instructions for preparing substrate. Remove all extraneous sources of wood cellulose and other edible materials such as wood debris, tree stumps and roots, stakes, formwork, and construction waste wood from soil and around foundations.

B. Soil Treatment Preparation: Remove foreign matter and impermeable soil materials that could decrease treatment effectiveness on areas to be treated. Loosen, rake, and level soil to be treated, except previously compacted areas under slabs and footings. Termiticides may be applied before placing compacted fill under slabs if recommended by termiticide manufacturer.

C. Fit filling hose connected to water source at the site with a backflow preventer, complying with requirements of authorities having jurisdiction.

3.3 APPLICATION, GENERAL

A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's EPA-Registered Label for products.

3.4 APPLYING SOIL TREATMENT

A. Application: Mix soil treatment termiticide solution to a uniform consistency. Provide quantity required for application at the label volume and rate for the maximum specified concentration of termiticide, according to manufacturer's EPA-Registered Label, to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction. Distribute the treatment evenly.

1. Slabs-on-Grade and Basement Slabs: Under ground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.
2. Foundations: Adjacent soil including soil along entire inside perimeter of foundation walls, along both sides of interior partition walls, around plumbing pipes and electric conduit penetrating slab, and around interior column footers, piers, and chimney bases; and along entire outside perimeter, from grade to bottom of footing. Avoid soil washout around footings.
3. Crawlspaces: Soil under and adjacent to foundations as previously indicated. Treat adjacent areas including around entrance platform, porches, and equipment bases. Apply overall treatment only where attached concrete platform and porches are on fill or ground.
4. Masonry: Treat voids.
5. Penetrations: At expansion joints, control joints, and areas where slabs will be penetrated.

B. Avoid disturbance of treated soil after application. Keep off treated areas until completely dry.

C. Protect termiticide solution, dispersed in treated soils and fills, from being diluted until ground-supported slabs are installed. Use waterproof barrier according to EPA-Registered Label instructions.

D. Post warning signs in areas of application.

E. Reapply soil treatment solution to areas disturbed by subsequent excavation, grading, landscaping, or other construction activities following application.

3.5 INSTALLING BAIT STATION SYSTEMS

A. Place bait stations and, if applicable, monitoring stations, according to the EPA-Registered Label for the product and manufacturer's written instructions, in areas that are conducive to termite feeding and activity, as follows:

1. Conducive sites and locations indicated on Drawings.
2. In and around infested trees and stumps.
3. In mulch beds.
4. Where wood directly contacts soil.
5. Areas of high soil moisture.
6. Near irrigation sprinkler heads.
7. Each area where roof drainage system, including downspouts and scuppers, drains to soil.
8. Along driplines of roof overhangs without gutters.
9. Where condensate lines from mechanical equipment drip or drain to soil.
10. At plumbing penetrations through ground-supported slabs.
11. Other sites and locations as determined by the PCO.

B. Inspect and service stations from time of their application until completion of the time period established by continuing service agreement, according to the EPA-Registered Label for the product and manufacturer's written instructions for termite management system and bait products.

1. Service Frequency: Inspect monitoring stations not less than once every three months.

C. Inspect and service stations from time of their application until completion of the time period established by continuing service agreement, according to the EPA-Registered Label for the product and manufacturer's written instructions for termite bait products.

1. Service Frequency: For supplementary and preventive treatment, inspect not less than once every three months.

END OF SECTION 02361