Project Manual

for

COLLEGE OF THE MAINLAND
Biology Lab Upgrades and Renovation

Issue for Proposal

October 3, 2016

PBK Project No.: 16224

PBK

Architecture
Engineering
Planning
Technology
Facility Consulting

11 Greenway Plaza, 22nd Floor
Houston, Texas 77046
(713) 965-0608

College of the Mainland
Board of Trustees

Wayne H. Miles	Chair
Rachel Delgado	Vice Chair
Rosalie Kettler	Secretary
Kyle Dickson	Member
Bennie Matthews	Member
Roney G. McCrary	Member
Alan Waters	Member

Interim President

Dr. A. Rodney Allbright

OWNER

College of the Mainland
1200 Amburn Road
Texas City, Texas 77591
t. 409-938-1211

ARCHITECT
PBK Architects
11 Greenway Plaza
22nd Floor
Houston, Texas 77046
t. 713-965-0608

MEP ENGINEER
PBK MEP
11 Greenway Plaza
15th Floor
Houston, Texas 77046
t. 713-965-0608

TECHNOLOGY
PBK MEP
11 Greenway Plaza
15th Floor
Houston, Texas 77046
t. 713-965-0608

PROJECT MANUAL TABLE OF CONTENTS

TABLE OF CONTENTS

PROJECT MANUAL SEALS

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

DIVISION 01 – GENERAL REQUIREMENTS

DIVISION 02 – EXISTING CONDITIONS

DIVISION 03 – CONCRETE (Not Used)

END OF PROJECT MANUAL TABLE OF CONTENTS

See Cover for Issuance Date. Each specification section included herein is listed in the Project Manual Table of Contents with a letter code, indicated below, designating the Designer of Record responsible for its preparation, under whose seal and/or authority it is issued for the purpose(s) stated above. Seals and signatures do not apply to documents not included herein, nor (except as otherwise indicated) to documents prepared by the Owner or others ("O"), including but not necessarily limited to documents in Division 00, geotechnical and other reports, etc.

Architect of Record ("A"): Cliff Whittingstall R.A. #18585	PBK Architects, Inc. 11 Greenway Plaza 22nd Floor Houston, Texas 77046 p. 713-965-0608	 09/30/2016
Engineer of Record, Mechanical, Electrical, & Plumbing ("M, E, P, T"): Matthew R. Sickorez P. E. #107736	PBK Architects, Inc. 11 Greenway Plaza 15th Floor Houston, Texas 77046 p. 713-965-0608	 09/30/2016

DOCUMENT 00 11 00 - REQUEST FOR COMPETITIVE SEALED PROPOSALS

Competitive Sealed Proposals for the work identified below in accordance with Proposal Documents and addenda as may be issued prior to date of proposal opening will be received by the Board of Trustees, Alief Independent School District, until proposal closing date and time, as identified below. Proposals from Offerors will then be opened in public and read aloud.

OWNER:	**College of the Mainland** 1200 Amburn Road Texas City, Texas 77591 Phone: 281.498.8110 Representative: Sonja Blinka, Director of Purchasing
PROJECT:	**Biology Lab Upgrades and Renovations** **College of the Mainland**
EST. BUDGET:	**$** 250,000.00
PRE-PROPOSAL CONFERENCE	Monday, 10 October 2016, at 2:00 pm CDT. College of the Mainland – Math & Science Building 1200 Amburn Road, Texas City, Texas 77591 Representatives of the Architect, Owner will be present at this meeting. All proposers are encouraged to attend.
PROPOSAL DATE AND TIME:	Tuesday, 18 October 2016 Base Bid due at 2:00 pm CDT
LOCATION OF PROPOSAL OPENING:	College of the Mainland Purchasing Office 1200 Amburn Road Texas City, Texas 77591
ARCHITECT:	PBK Architects, Inc. 11 Greenway Place 22nd Floor Houston, Texas 77046 Phone: (713) 965-0608

Qualified Offerors (General Contractors) may obtain two sets of plans and specifications at the location identified upon deposit of $100.00 per set with check made payable to PBK Architects, Inc. The deposit will be refunded when the plans and specifications are returned promptly in good condition.

Proposal Documents may be obtained from the following address:

PBK Architects, Inc.
11 Greenway Plaza, Suite 2210
Houston, Texas 77046
(713) 965-0608
Office Hours are 8:00 AM to 5:00 PM

In addition, proposal documents can be reviewed at the following locations:

Associated Builders & Contractors
of Greater Houston (ABC)
3825 Dacoma Street
Houston, Texas 77092
Phone: (713) 843-3700

Associated General Contractors of Houston
(AGC)
910 Kirby Drive, Suite 131
Houston, Texas 77098
Phone: (713) 523-6222

McGraw-Hill Construction Dodge
10616 Hempstead Road, Suite 110
Houston, Texas 77092
Phone: (713) 316-9411

Office of the Architect
11 Greenway Plaza, 22nd Floor
Houston, Texas 77046
Phone: (713) 965-0608

AGC of Southeast Texas
5458 Avenue A
Beaumont, Texas 77705
Phone: (409) 835-6661

Contractors Plan Room
www.contractorsplanroom.com

Virtual Builders Exchange
7035 W. Tidwell, Bldg J, Ste 112
Houston, TX 77092
Houston, Texas 77098
(832) 613-0201
F: (832) 613-0344
www.virtualbx.com

iSqFt Plan Room
Triangle Reproductions
8450 Westpark, Suite 100
(713) 843-3700

McGraw-Hill Construction Dodge (on line services)
http://www.dodgeplans.construction.com

Reed Construction Data (RCD)
www.reedplans.com

FULL REFUND: Deposits will be returned provided all Contract Documents and addenda are returned to the Architect complete with all sheets bound in their original order within ten (10) days of proposal.

FORFEIT OF DEPOSIT: When the Documents are not returned under the conditions specified, no portion of the deposit will be returned. The Documents remain the property of the Owner and shall be returned.

Submit Proposals to the Owner no later than the date and time specified. Submit proposals in duplicate in a sealed envelope in accordance with Document 00 11 00 Instructions to Offerors with the following information on the face of the envelope.

Name of Offeror (General Contractor)
RFCSP 17-17 Math/Science Lab Renovations
College of the Mainland
Attn: Sonja Blinka, Director of Purchasing
1200 Amburn Road
Texas City, Texas 77591

The Owner reserves the right to reject any and all proposals and to waive any irregularities in the Competitive Sealed Proposal process.

No proposal shall be withdrawn within 45 days after the proposal opening without the specific consent of the Owner.

PROPOSAL BOND: A Proposal Bond from a bonding company acceptable to the Owner or a certified check in an amount equal to 10% of the greatest amount proposal shall accompany each Offeror's proposal.

PAYMENT BOND AND PERFORMANCE BOND: A Payment Bond and Performance Bond, each in an amount equal to 100% of the Contract Sum conditioned upon the faithful performance of the Contract will be required. Please note that all bonding companies presented must be acceptable to the Owner.

The prevailing rates of wages are the minimums that must be paid in compliance with applicable laws of the State of Texas.

Offerors submitting a proposal are encouraged to visit the site. All Offerors submitting a proposal are encouraged to attend the proposal opening.

Subcontractors and Suppliers intending to submit proposals to General Construction Offerors are required to prepare proposals based on a complete set of proposal documents. If after reviewing the complete set of proposal documents, Subcontractors and Supplier Offerors desire to purchase individual drawings and specification sections for their proposal convenience, they may do so by ordering the specific drawings and specifications directly from the reproduction company.

Subcontractors and Suppliers purchasing a partial set of proposal documents are responsible for determining the documents it requires and is responsible for costs associated with printing and delivery. Subcontractors and Suppliers exercising this option shall agree that 1) all documents shall be returned to the Architect, without refund, after submitting a proposal, 2) the documents shall not be used on other construction projects, and 3) that the subcontractor or supplier agrees that the Owner and the Architect have no responsibility for errors or interpretations resulting from the use of incomplete set of proposal documents.

Successful Subcontractors and Supplier Offerors may retain their Proposal Documents until completion of the construction.

End of Document

REQUEST FOR COMPETITIVE SEALED PROPOSAL (RFCSP)

RFP No. 17-17 MATH/SCIENCE LAB RENOVATIONS

RETURN PROPOSAL
ONE ORIGINAL + ONE COPIES
TO:
College of the Mainland
Attn: Purchasing Department
1200 Amburn Road
Texas City, TX 77591

RETURN NO LATER THAN 2:00 P.M.
OCTOBER 18, 2016

For additional information, contact Sonja Blinka at sblinka@com.edu 409-933-1211 ext. 473.

You must sign below in INK; failure to sign WILL disqualify the offer.

Company Name: _____

Company Address: _____

City/State/Zip: _____

Telephone No.: _____ Fax No. _____

Email: _____

Print Name: _____

Signature: _____

[Your signature attests to your offer to provide the goods and/or services in this Proposal according to the published provisions of this Proposal. When an award letter is issued, it becomes a part of this contract. Contract is not valid until Purchase Order is issued.]

Sonja Blinka

_____ Date: 10/3/16

Sonja Blinka, Director of Purchasing

NOTICE TO RESPONDENTS

College of the Mainland is accepting proposals for:

RFCSP 17-17 MATH/SCIENCE LAB RENOVATIONS

DUE: 2:00 p.m. TUESDAY, OCTOBER 18, 2016

This is a Request for Proposal (RFP) only and not an offer to purchase. To be considered a responsive offer, mail the Original Signed proposal and any other requested information in a sealed envelope on the forms provided to:

College of the Mainland
Attn: Sonja Blinka, Director of Purchasing
1200 Amburn Road
Texas City, Texas 77591

Proposal envelopes must be clearly marked with the following:

(1) RFPCS 17-17 MATH/SCIENCE LAB RENOVATIONS
(2) Proposal Due Date and Time **&** your Company Name and Return Address.

Proposals received after this time will be returned unopened. In case of mailed proposals or correspondence concerning proposals, the College will not be held responsible for missing, lost, or late mail.

RFCSP Opening Time/Location: Proposals will be accepted no later than:

Tuesday, 2:00 p.m. October 18, 2016

College of the Mainland
Purchasing Office
1200 Amburn Road
Texas City, Texas 77591

The responses will remain under evaluation and will not be available for public review until after approval of award by the Board of Trustees.

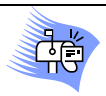
The Board of Trustees reserves the right to reject any and all Proposals and waive any and all formalities and conditions. College of the Mainland shall accept the Proposal determined by the College to be in its best interest. It is not the intent of any condition or specification in the proposal to prohibit any responsible contractor from submitting a Proposal.

VENDOR SUBMISSION CHECKLIST

If submitting a proposal, include the following pages with response:

- ☐ SIGNED COVER PAGE
- ☐ CONFLICT OF INTEREST QUESTIONNAIRE (CIQ)
- ☐ NON-COLLUSIVE BIDDING/CERTIFICATE OF RESIDENCE
- ☐ FELONY CONVICTION NOTIFCIATION
- ☐ VENDOR INFORMATION REPORT
- ☐ REFERENCES
- ☐ W-9 TAX PAYER IDENTIFICATION

MAIL THE COMPLETED CHECKLIST ITEMS IN A SEALED ENVELOPE ADDRESSED AS FOLLOWS:



YOUR COMPANY NAME
RETURN ADDRESS
Proposal No & Due Date/Time

College of the Mainland
Attn: Sonja Blinka, Director of Purchasing
1200 Amburn Road
TEXAS CITY, TX 77591

CONFLICT OF INTEREST QUESTIONNAIRE

College policy CFE (LEGAL) requires disclosure of a vendor's business relationships with the College District. A vendor to the College District shall file a *CONFLICT OF INTEREST QUESTIONNAIRE, FORM CIQ* if the person has a business relationship with the College District and:

a. Has an employment or other business relationship with an officer of the College District, or a family member of the officer, described by Local Government Code 176.003(a)(2)(A); or
b. Has given an officer of the College District, or a family member of the officer, one or more gifts with the aggregate value specified by Local Government Code 176.003(a)(2)(B), excluding any gift described by Local Government Code 176.003(a-1).

CONFLICT OF INTEREST QUESTIONNAIRE **FORM CIQ**

For vendor or other person doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 1491, 80th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code by a person who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the person meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. *See* Section 176.006, Local Government Code.

A person commits an offense if the person knowingly violates Section 176.006, Local Government Code. An offense under this section is a Class C misdemeanor.

OFFICE USE ONLY

Date Received

1 **Name of person who has a business relationship with local governmental entity.**

2 ☐ **Check this box if you are filing an update to a previously filed questionnaire.**

(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date the originally filed questionnaire becomes incomplete or inaccurate.)

3 **Name of local government officer with whom filer has employment or business relationship.**

_____
Name of Officer

This section (item 3 including subparts A, B, C & D) must be completed for each officer with whom the filer has an employment or other business relationship as defined by Section 176.001(1-a), Local Government Code. Attach additional pages to this Form CIQ as necessary.

A. Is the local government officer named in this section receiving or likely to receive taxable income, other than investment income, from the filer of the questionnaire?

☐ Yes ☐ No

B. Is the filer of the questionnaire receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer named in this section AND the taxable income is not received from the local governmental entity?

☐ Yes ☐ No

C. Is the filer of this questionnaire employed by a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership of 10 percent or more?

☐ Yes ☐ No

D. Describe each employment or business relationship with the local government officer named in this section.

4

_____ _____
Signature of person doing business with the governmental entity Date

Adopted 06/29/2007

NON-COLLUSIVE BIDDING/CERTIFICATE OF RESIDENCY

By submission of this bid or proposal, the bidder certifies that:

a) This bid or proposal has been independently arrived at without collusion with any other bidder or with any competitor;

b) This bid or proposal has not been knowingly disclosed and will not be knowingly disclosed, prior to the opening of bids, or proposals for this project, to any other bidder, competitor or potential competitor;

c) No attempt has been or will be made to induce any other person, partnership or corporation to submit or not to submit a bid or proposal;

d) The person signing this bid or proposal certifies that he has fully informed himself regarding the accuracy of the statements contained in this certification, and under the penalties being applicable to the bidder as well as to the person signing in its behalf.

e) THE FAILURE TO SIGN THIS CERTIFICATE MAY BE CAUSE FOR YOUR BID TO BE REJECTED.

The State of TX has passed a law concerning non-resident contractors. This law can be found in TX Education Code under Chapter 2252, Subchapter A. This law makes it necessary for the College of the Mainland to determine the residency of its bidders. In part, this law reads as follows:

"Section: 2252.001

(3) 'Non-resident bidder' refers to a person is not a resident.

(4) 'Resident bidder' refers to a person whose principal place of business is in this state, including a contractor whose ultimate parent company or majority owner has its principal place of business in this state.

Section: 2252.002

A governmental entity may not award a governmental contract to a non resident bidder unless the nonresident underbids the lowest bid submitted by a responsible resident bidder by an amount that is not less than the amount by which a resident bidder would be required to underbid the nonresident bidder to obtain a comparable contract in the state in which the nonresident's principal place of business is located."

I certify that _____
(Name of Company Bidding)

is, under Section: 2252.001 (3) and (4), a

_____Resident Bidder _____Non-resident Bidder

My or Our principal place of business under Section: 2252.001 (3) and (4), is in the city of

_____in the state of_____.

_____
Signature of Authorized Company Representative

_____
Print Name

_____
Title

_____
Date

FELONY CONVICTION NOTIFICATION

State of Texas Legislative Senate Bill No. 1, Section 44.034, Notification of Criminal History, Subsection (a), states "a person or business entity that enters into a contract with a school district must give advance notice to the district if the person or an owner or operator of the business entity has been convicted of a felony. The notice must include a general description of the conduct resulting in the conviction of a felony."

Subsection (b) states "a school district may terminate a contract with a person or business entity if the district determines that the person or business entity failed to give notice as required by Subsection (a) or misrepresented the conduct resulting in conviction. The district must compensate the person or business entity for services performed before the termination of the contract."

THIS NOTICE IS NOT REQUIRED OF A PUBLICLY-HELD CORPORATION

I, the undersigned agent for the firm named below, certify that the information concerning notification of felony convictions has been reviewed by me and the following information furnished is true to the best of my knowledge.

VENDOR'S NAME:

AUTHORIZED COMPANY OFFICIAL'S NAME (PRINTED):

A. My firm is a publicly-held corporation; therefore, this reporting requirement is not applicable.

Signature of Company Official:

_____

B. My firm is not owned nor operated by anyone who has been convicted of a felony:

Signature of Company Official: _____

C. My firm is owned or operated by the following individual(s) who has/have been convicted of a felony:

Name of Felon(s): _____

Details of Conviction(s):

_____

_____

_____

Signature of Company Official:

_____

VENDOR INFORMATION REPORT

Please type or print:

BUSINESS NAME _____

MAILING ADDRESS _____

CITY _____STATE _____ ZIP CODE _____

PHONE NUMBER _____ FAX NUMBER _____

NAME OF REPRESENTATIVE ASSIGNED TO OUR ACCOUNT

_____

WILL COMPLY WITH ALL TERMS AND CONDITIONS ____YES ____ NO

PERSON AUTHORIZED TO SIGN PROPOSALS, OFFERS & CONTRACTS:

Authorized Agent Name (Please print): _____

Title: _____

_____

(Authorized Agent Original Signature) *(Date)*

REFERENCES

Financial stability must be demonstrated by each Bidder as well as a reliable delivery record to include a list of at least three (3) similar accounts that have utilized similar products or services for a minimum of one year.

1. Business Name: _____

Contact: _____

Phone: - - Fax: - - E-mail: _____

Description of Project or Work: _____

2. Business Name _____

Contact: _____

Phone: - - Fax: - - E-mail: _____

Description of Project or Work: _____

3. Business Name _____

Contact: _____

Phone: - - Fax: - - E-mail: _____

Description of Project or Work: _____

The undersigned agent confirms that the above references may be contacted by the College to obtain your business history.

Company Name - Please Print _____

_____

(Authorized Agents Original Signature) *(Date)*

TAXPAYER IDENTIFICATION

This form is available at www.irs.gov with instructions. You may download the form or use the copy below. Federal Income Tax Law requires us to have taxpayer identification numbers (TIN) on file, Under Federal Regulation Section 6109; you are required to provide this information. You may provide this information on the W-9 included here. We will not have to file an annual Information Return Form 1099 MISC, for you if you are a corporation, tax-exempt organization, government agency or other exempt payee. However, the law requires that you provide us with your TIN in addition to telling us what kind of payee you are. If you do business as an individual or sole proprietor, your social security numbers serves as your TIN.

Form **W-9**
(Rev. October 2007)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

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

Print or type
See Specific Instructions on page 2

Name (as shown on your income tax return)

Business name, if different from above

Check appropriate box: ☐ Individual/Sole proprietor ☐ Corporation ☐ Partnership
☐ Limited liability company. Enter the tax classification (D=disregarded entity, C=corporation, P=partnership) ► _____
☐ Other (see instructions) ►

☐ Exempt payee

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

Requester's name and address (optional)

City, state, and ZIP code

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 your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the chart on page 4 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).

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 on page 4.

Sign Here Signature of U.S. person ► Date ►

General Instructions

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

Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

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.

Note. If 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 on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the 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 withholding on your share of partnership income.

The person who gives 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 is in the following cases:

- The U.S. owner of a disregarded entity and not the entity,

Cat. No. 10231X Form **W-9** (Rev. 10-2007)

TAX PAYER ID REQUIREMENTS

TO ALL FUTURE VENDORS:

The College of the Mainland is required by the IRS to have a completed W-9 form on file **BEFORE** any orders will be placed or payments made to a vendor. Failure to furnish you Tax ID number may result in the imposition of a penalty per Section 6676 of the internal Revenue Code.

Please follow the steps below:

1. Fill out the attached W-9 Form, check appropriate box, and enter your Tax ID or social security number. This form may also be downloaded directly from www.irs.gov web site.
2. Place EXEMPT in Part 11 if not subject to backup withholding.
3. Fill out attached Vendor Information Request Form.
4. Please return the Attached W-9 Form and the Vendor Information Request Form by Fax to:

College of the Mainland
Attn: Purchasing Department
Fax Number: (409) 938-7073

If fax machine is not available, please mail to:

College of the Mainland
Attn: Purchasing Department
1200 Amburn Road,
Texas City, Texas 77591

College of the Mainland WILL NOT BE RESPONSIBLE FOR ITEMS/SERVICES SUPPLIED BY ANY VENDOR WITHOUT A PURCHASE ORDER NUMBER.

If you have any questions, the Purchasing Department may be reached at (409)938-1211, ext. 473 or 474 between the hours of 8:00 am and 5:00 pm Monday-Friday.

Thank you for your timely response in this matter.

Sonja Blinka
Director of Purchasing

NOTICE OF NO BID

Vendors may opt to send a No Bid response. Submittal of this document serves as your official response of to the subject Request for Proposal as a "NO BID" notice to the buyer.

Business Name

Address:

City: **State**: **Zip**: -

Phone: - - **Fax**: - -

Contact / Sales Representative:

Business Email for Correspondence including Bid Notices:

☐ 1. **Move** our company name and address to the bidder list(s) for the following type of products, services or supplies so that we may be notified of proposal opportunities pertinent to our business:_____

☐ 2. **Keep** our name on the vendor lists for this commodity. We have decided not to submit an offer at this time due to the following reason(s): _____

☐ 3. **Delete** our name from all future vendor lists for the following reason(s): _____

Mail this form to: COLLEGE OF THE MAINLAND | 1200 AMBURN ROAD | TEXAS CITY, TEXAS 77591

Authorized Agents Name (*please print****)***

Title:

(Authorized Agents Original Signature) ***(Date)***

DOCUMENT 00 40 00 - COMPETITIVE SEALED PROPOSAL FORM

BIOLOGY LAB UPGRADES AND RENOVATIONS
COLLEGE OF THE MAINLAND

Submitted by:_____

Date:_____Phone No.:_____

To: Board of Trustees
College of the Mainland
1200 Amburn Road
Texas City, Texas, 77591

Having examined Proposal and Contract Documents prepared by PBK Architects, Inc., dated 3 October 2016 and having examined site conditions, the undersigned proposes to furnish all labor, equipment and materials and perform all work for the completion of the above named project for the sum indicated.

In submitting its Proposal, the undersigned agrees to the following:

1. Hold proposal open for acceptance 45 days after the date on which proposals are opened.
2. Accept right of Owner to reject any or all proposals, to waive formalities and to accept proposal which Owner considers most advantageous.
3. Enter into and execute the contract, if awarded, for the Base Proposal and accepted Alternate Proposals.
4. Complete work in accordance with the Contract Documents within the stipulated contract time.
5. By signing, the undersigned affirms that, to the best of his knowledge, the Proposals have been arrived at independently and is submitted without collusion with anyone to obtain information or gain any favoritism that would in any way limit competition or give an unfair advantage over respondents in the award of this proposal.

I. BASE PROPOSAL

Undersigned agrees to complete the Work for the lump sum amount as follows:

A. _____ Dollars $ _____
(Amount written in words governs) (Amount in figures)

II. ALLOWANCES

The Undersigned certifies that the allowances in Section 01 21 00 are included in the Base Proposals and agrees that unexpended balance of allowance sums, including the Contractor's markup for the remaining sums, will revert to Owner in the final settlement of the contract.

Allowance No. 1: Owner Contingency Allowance: $20,000.00

III. ADDENDA

Undersigned acknowledges receipt of Addenda Nos. _____dated _____, 2016.

IV. CHANGES IN THE WORK

Undersigned understands that changes in the work shall be performed in accordance with the Supplementary Conditions.

THIS DOCUMENT MUST BE SUBMITTED DUE AT 2:00PM

It is understood that the right is reserved by the Owner to reject any or all proposals, or waive any informalities in proposal process.

_____
Authorized Signature

_____
Title

(Seal, if a Corporation)
State whether Corporation,
Partnership or Individual

_____
Name of Contracting Firm

_____
Address

_____
Telephone

_____
Date

End of Document

DOCUMENT 00 40 01 - PROPOSAL BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____, as Principal, and _____, as Surety, are held and firmly bound unto the College of the Mainland, Texas City, Texas, hereinafter called the Owner, in the penal sum of _____ Dollars ($_____) lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the accompanying Proposal, dated _____, 2016, for Biology Lab Upgrades and Renovations, the kind and extent of work involved being set forth in detail in the proposed Contract Documents cited herein.

THEREFORE, if the Principal shall not withdraw the accompanying proposal within 45 days after the date set for opening thereof, and shall within ten days after the prescribed forms are presented for signature, enter into a written contract with the Owner in accordance with the Proposal as accepted; and give Bond and good and sufficient surety for the faithful performance and proper fulfillment of the contract including payment of persons supplying labor or materials therefor, or in the event of the withdrawal of the proposal within the period specified, or the failure to enter into a contract and give the bond within the time specified, if the Principal shall pay to the Owner the difference between the aggregate amount for which the Owner may enter into a contract for the same work with another Respondent; if the latter amount be in excess of the former, then the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above bonded parties have executed this instrument under their respective seals this _____ day of _____, 2016, the name and Corporate Seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representatives, pursuant to authority of its governing body.

_____ _____
Business Address Individual Principal

_____ _____
Business Address Individual Principal

ATTEST:

_____ BY:_____
Secretary President

_____ _____
Business Address Corporate Surety

ATTEST:_____ BY:_____

End of Document

DOCUMENT 00 73 00 - SUPPLEMENTARY CONDITIONS

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

Supplement AIA Document A201, 2007 Edition as follows:

ARTICLE 1 - CONTRACT DOCUMENTS

1.1 BASIC DEFINITIONS

Revise the first sentence in Subparagraph 1.1.1 as follows:

1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents consist of the Agreement between Owner and Contractor (hereinafter the Agreement), the Conditions of the Contract (General, Supplementary and other Conditions), Performance Bond, Labor and Material Payment Bond, the Drawings, the Specifications, all Addenda issued prior to execution of the Agreement and all Modifications thereto.

Add the following text to Subparagraph 1.1.3, THE WORK:

1.1.3 It also includes all supplies, skill, supervision, transportation services and other facilities and things necessary, proper or incidental to the carrying out and completion of the terms of the contract and all other items of cost or value needed to produce, construct and fully complete the public work identified by the Contract Documents.

Add the following Subparagraphs:

1.1.9 DESCRIPTION OF PARTIES

The following definitions apply to parties named in the Contract Documents.

1.	Owner:	College of the Mainland 1200 Amburn Road Texas City, Texas 7591 Phone: 409-938-1211
2.	Architect:	PBK Architects, Inc. 11 Greenway Plaza, Suite 2210 Houston, Texas 77046 Phone: (713) 965-0608; Fax: (713) 961-4571
3.	MEP Engineer:	PBK Engineering Division 11 Greenway Plaza, 22nd Floor Houston, Texas 77046-1104 Phone: 713-965-0608; Fax: 713-961-4571

1.1.10 ADDENDA

Addenda are written or graphic instruments issued prior to the execution of the Contract, which modify or interpret the proposal documents, including Drawings and Specifications, by additions, deletions, clarifications or corrections. Addenda will become part of the Contract Documents when the Construction Agreement is executed.

1.1.11 APPROVED, APPROVED EQUAL, APPROVED EQUIVALENT, OR EQUAL

The terms Approved, and Approved Equal, and similar phrases relate to the substitution of materials, equipment or procedure approved in writing by the Architect prior to receipt of proposals.

1.1.12 ABBREVIATIONS

N.I.C. By Others; By Owner; Existing	Not in contract. Indicating work not to be done by this Contractor under this Agreement.

AIA	American Institute of Architects
ACI	American Concrete Institute
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ASA	American Standards Association
ASTM	ASTM International
AWSC	American Welding Society Code
FS	Federal Specification
NEC	National Electrical Code
SPR	Simplified Practice Recommendation
UL	Underwriters Laboratories, Inc.

1.1.13 PROPOSAL DOCUMENTS

Proposal Documents consist of all documents bound into or referenced in the Project Manual, the Drawings, and Addenda related thereto. The Project Manual contains the Proposal Requirements, Sample Forms, Conditions of the Contract, the Specifications, and a list of Drawings, and Schedules, some of which are bound into the Project Manual (Other Drawings and Schedules are bound separately).

1.1.14 MISCELLANEOUS OTHER WORDS

Provide: Whenever the word "provide" is used in the documents, it shall mean the same as "furnish and install".

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

Add the following Subparagraphs:

1.2.4 PRECEDENCE OF THE CONTRACT DOCUMENTS

The most recent issued Document takes precedence over previous issued forms of the same Document. The order of precedence is as follows with the highest authority listed first.

.1 The Agreement
.2 The Addenda
.3 Conditions of the Contract, Drawings, and Specifications shall have equal authority. Should these documents disagree in themselves, the Architect will select the appropriate method for performing the work at no additional increase in the Contract Cost.

1.2.5 RELATION OF SPECIFICATIONS AND DRAWINGS

The Drawings and Specifications are correlative and have equal authority and priority. Should they disagree in themselves, or with each other, base the proposals on the most expensive combination

of quality and quantity of work indicated. The appropriate method of performing the work, in the event of the above mentioned disagreements, will be made by the Architect.

1.2.6 OPTIONAL MATERIALS, BRANDS AND PROCESSES

When more than one is specified for a particular item of work, the choice shall be the Contractor's. The final selection of color and pattern will be made from the range available within the option selected by the Contractor, unless the item is specified to match a specific color or sample furnished. Where particular items are specified only products of those named manufacturers are acceptable. Certain specified construction and equipment details may not be regularly included as part of the named manufacturer's standard catalog equipment but shall be provided by the manufacturer as required for the proper functioning of the equipment. Reasonable minor variations in equipment are expected and will be acceptable; however, indicated and specified performance and material requirements are minimum, and will be required in addition to standard accessories. The Architect reserves the right to determine the equality of equipment and materials that deviate from any of the indicated and specified requirements.

Add Paragraph 1.7 and following Subparagraphs:

1.7 MISCELLANEOUS OTHER DEFINITIONS

1.7.1 ADDENDA, ADDENDUM

Documents issued by the Architect prior to execution of the Owner Contractor Agreement that modify or clarify the Proposal Documents. The addenda become a part of the Contract Documents

1.7.2 ALTERNATE PROPOSAL(S)

A separate amount stated on the Proposal Form which, if accepted by the Owner, will be added to or deducted from the Base Proposal. If accepted, the work that corresponds to the alternate proposal will become part of the Agreement between Owner and Contractor. Alternative proposals shall remain valid for a period of 30 days after receipt of proposals, regardless if an Owner Contractor Agreement has been executed, unless indicated otherwise herein.

1.7.3 BASE PROPOSAL

The Contractor's proposal for the Work, not including any Alternatives.

1.7.4 CONTRACT TIME

The period of time which is established in the Contract Documents for Substantial Completion of the Work. This period of time is not subject to adjustment or extension without the written permission of the Owner.

1.7.5 DATE OF AGREEMENT

The date the Owner formally awards a Contract for Construction of the Work. This date will be inserted on the first page of the Agreement Between Owner and Contractor and shall be referenced in Performance Bond and Payment Bond forms. See also Date of Commencement of the Work.

1.7.6 DATE OF COMMENCEMENT OF THE WORK

The date that either (1) the fully executed Agreement Between Owner and contractor, or (2) a written Notice to Proceed is delivered to the Contractor. This date constitutes day zero ("0") of the stated Contract Time.

1.7.7 DATE OF FINAL COMPLETION

The end of construction. Refer Paragraph 9.10.

1.7.8 DATE OF SUBSTANTIAL COMPLETION

Refer Subparagraph 8.1.3 and Paragraph 9.8. Contractor shall be Substantially Complete by date stated on the Proposal Form.

1.7.9 DAY

The following days are referenced in the documents:

.1 Calendar Days: The days of the Gregorian Calendar. The Contract Time is established in Calendar Days and extensions of time granted for Regular Work Days lost, if any, will be converted to Calendar Days.

.2 Holidays: The days officially recognized by the construction industry in this area as a holiday; normally limited to the observance days of New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and the day after, and Christmas Day.

.3 Regular Work Days: All calendar days except holidays, Saturdays, and Sundays. Requests for extensions of time shall be requested on the basis of Regular Work Days, and those days, if approved; will be converted to calendar days by multiplying by a factor of one and four-tenths (1.4).

.4 Anticipated Weather Days: An allowance of Regular Work Days, established as probable days lost due to weather delays; said allowance to be included in the Contractor's proposed Completion Time on his Proposal Form.

.5 Weather Days: Regular Work Days when rain, flooding, snow, unusually high winds, excessively wet grounds, or similar circumstances prevent progress on major portions of the Work. The Contractor will be entitled to an extension of the Contract Time for the net additional time, if any, which results from deducting the amount of Anticipated Weather Days from the total amount of Weather Days.

.6 Net Weather Days: The difference in working days between Anticipated Weather Days and Weather Days.

1.7.10 NOTICE TO PROCEED

A letter of award or other written notice that may be given by the Owner to the Contractor that directs the Contractor to start the Work. It may also establish the Date of Commencement of the Work.

1.7.11 PUNCH LIST

A comprehensive list prepared by the Contractor prior to Substantial Completion to establish all items to be completed or corrected; this list may be supplemented by the Architect or Owner. Refer to Subparagraph 9.8.2.

ARTICLE 2 - OWNER

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

Delete the text of Subparagraph 2.2.5 in its entirety and substitute the following:

2.2.5 The Contractor will be furnished free of charge, 15 copies of the Drawings and Specifications for the execution of the work. The Contractor shall pay actual reproduction costs of any additional copies required.

2.5 OWNER'S RIGHT TO OCCUPY THE PROJECT

Add the following Subparagraphs:

2.5.1 The Owner shall have the right to occupy or use without prejudice to the right of either party, any completed or largely completed portions of the project, notwithstanding the time for completing the entire work or such portions may not have expired. Such occupancy and use shall not constitute acceptance of any work not in accordance with the Contract Documents.

2.5.2 If prior use delays the completion of the project, the Contractor shall be entitled to extension of time, which claim shall be in writing with supporting data attached.

2.5.3 Refer to Article 11 - Insurance and Bonds regarding property insurance requirements in the event of such occupancy.

ARTICLE 3 - CONTRACTOR

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

Delete text of Subparagraph 3.2.2 and substitute the following:

3.2.2 The Contractor shall carefully study and compare the Agreement, Conditions of the Contract, Drawings, Specifications, Addenda, and Modifications and shall at once report to the Architect any error, inconsistency, or omission he may discover. Contractor shall be liable for any damage to Owner for failure to report any error, inconsistency or omission he may discover or should have discovered, but he shall not be liable to Owner or Architect for any damage resulting from such error, inconsistency or omission which he should not have discovered or which he did discover and at once so reported. Contractor shall do no work without approved Drawings and Specifications.

Add the following Subparagraphs:

3.2.5 The Contractor shall not be entitled to additional compensation for the "rework portion" of any additional work caused by his failure to carefully study and compare the contract documents prior to execution of the work.

3.2.6 The Contractor shall make a reasonable attempt to interpret the Contract Documents before asking the Architect for assistance in interpretation. The Contractor shall not ask the Architect for observation of work prior to the Contractor's field superintendent's personal inspection of the work and his determination that the work complies with the Contract Documents. The Contractor shall arrange meetings prior to commencement of the work of all major subcontractors to allow the subcontractor to demonstrate his understanding of the documents to the Architect and to allow the subcontractor to ask for any interpretation he may require.

3.2.7 If, in the opinion of the Architect, the Contractor does not make a reasonable effort to comply with the above requirements of the Contract Documents and this causes the Architect or his Consultants to expend an unreasonable amount of time in the discharge of the duties imposed on him by the contract Documents, then the Contractor shall bear the cost of compensation for the Architect's additional services made necessary by such failure. The Architect will give the Contractor prior notice of intent to bill for additional services related to above requirements before additional services are performed.

3.2.8 If the Contractor has knowledge that any of the products or systems specified will perform in a manner that will limit the Contractor's ability to satisfactorily perform the work or to honor his Warranty, he shall promptly notify the Architect in writing, providing substantiation for his position. Any necessary changes, including substitution of materials, shall be accomplished by appropriate Modification.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

Add the following Subparagraph:

3.3.4 The Contractor is especially cautioned to coordinate the routing of mechanical and electrical items prior to commencing these operations.

3.5 WARRANTY

Number paragraph below article 3.5 as Subparagraph 3.5.1 and Add the following Subparagraphs:

3.5.2 In the event of failure of materials, products, or workmanship, either during construction or the warranty period (which shall be one (1) year from the Date of Substantial Completion, except where a longer period is specified), the Contractor shall take appropriate measures to assure correction or replacement of the defective items, whether notified by the Owner or Architect. Items of work first performed after Substantial Completion shall have their warranties extended by the period of time between Substantial Completion and the actual performance of the Work.

3.5.3 Refer to warranty requirements in Section 017000 which will be required prior to final payment.

3.5.4 Appropriately 11 months after Substantial Completion, the Contractor shall accompany the Owner and Architect on a thorough walk-thru of the Project and be responsible for correcting of any additional deficiencies observed or reported.

3.6 TAXES

Delete text of Paragraph 3.6, and substitute the following.

The Owner is exempt from the Texas Sales Tax on any purchase of tangible personal property and will issue Certificates of Exemption from the Texas Sales Tax on materials furnished by Contractors on School Construction projects. The Contractor shall give a written statement to the Owner (with a copy to the Architect) as to the proration of costs of skilled crafts, labor and materials for the project prior to awarding of a Construction Contract. The contractors shall obtain Certificates of Resale from their suppliers in order to avoid payment of the State Sales Tax on materials incorporated in School jobs. Failure of the Contractor to obtain Certificates of Resale from their suppliers shall make the Contractor responsible for absorbing the tax.

3.7 PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS

3.7.1 Delete Paragraph 3.7.1 in its entirety and replace with the following:

3.7.1.1 The Contractor shall pay directly for all City and State building permits, impact fees, and other building fees related to the Project. The Contractor and Subcontractors will be responsible for obtaining required trade permits and license fees.

3.7.1.2 The Contractor shall pay directly for all temporary utility charges, tap charges, and water meter charges. The Contractor shall secure and pay for all governing authorities' permit fees.

Delete text of Subparagraph 3.7.3 in its entirety and substitute the following:

3.7.3 It is not the Contractor's responsibility to ascertain that the contract Documents are in accordance with Applicable laws, statutes ordinances, building codes, and rules and regulations. However, if the Contractor observes, or should have observed, that portions of the Contract Documents are to variance therewith, the Contractor shall promptly notify the Architect and Owner in writing and necessary changes shall be accomplished by appropriate Modification.

3.7.3.1 If the Contractor performs Work which he knew or should have known to be contrary to applicable laws, statues, ordinances, building codes, local rules or regulations, without such notice to the Architect and Owner, the Contractor shall assume full responsibility for such Work and shall bear there attributable costs.

3.8 ALLOWANCES

Delete text of Subparagraph 3.8.1, and substitute the following:

3.8.1 The General Contractor shall include in his proposal the allowances stated in the Specifications. These stated allowances represent the cost estimate of the materials and equipment delivered and unloaded at the site. The Contractor's handling costs on site, overhead, profit, and other expenses contemplated for the allowance material and equipment shall be included in allowance only where called for in the various sections of these specifications.

The Contractor shall purchase the allowance materials and equipment as directed by the Architect on the basis of the lowest responsible proposal of at least three (3) competitive proposals. If the actual cost of the materials and equipment delivered and unloaded at the site is more or less than all the allowance estimates, the Contract Sum will be adjusted accordingly by Change Order.

3.9 SUPERINTENDENT

Delete Subparagraph 3.9.1, in its entirety and substitute the following:

3.9.1 Prime Contractor shall employ competent superintendent and necessary assistants who shall be in attendance at the Project site during the progress of the work. The Superintendent shall be satisfactory to the Owner and shall not be changed except with the consent of the Architect, unless the Superintendent leaves the employment of the Contractor. No increase in Contract Time or Contract Sum shall be allowed in the event the Owner or Architects objects to any nominated superintendent.

3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

Add the following Subparagraph:

3.10.4 The Contractor shall submit to the Architect with each monthly Application for Payment, a copy of the progress schedule showing all modifications required to have the schedule reflect appropriate revisions and shall take whatever action is necessary to assure that the project completion schedule is met.

3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

Add the following Subparagraphs:

3.12.11 The Contractor shall submit complete drawings, data and samples to the Architect at least 30 days prior to the date the Contractor needs the reviewed submittals returned. The Contractor shall be prepared to submit color samples on any key items (such as quarry tile, vinyl wall covering, etc.) within 30 days of the award of Contract. Once samples of all key items are received, the Architect will finalize color selections.

3.12.12 The Contractor shall submit the number of copies of product data and samples which the Contractor and his subcontractors need for their use PLUS two (2) additional sets for the Architect, one (1) additional set for the Owner and one (1) additional set for each of the Architect's consultants involved with the particular Section of Work. Where shop drawings are involved, submit one (1) high quality reproducible transparency and one (1) opaque print of the shop drawing for the

Architect plus one (1) additional opaque print for each of the Architect's consultants involved with the particular Section of Work. The reproducible transparency will be marked by the Architect and/or his consultants. After final review and correction of the submittal, the Contractor shall send one (1) corrected set to the Architect and one (1) to each of the Architect's consultants involved with the particular Section of Work.

3.12.13 The Contractor shall provide composite drawings within three (3) months of contract signing showing how all piping, ductwork, lights, conduit, equipment, etc. will fit into the ceiling space allotted, including clearances required by the manufacturer, by Code, or in keeping with good construction practice. Space for all trade elements must be considered on the same drawing. Drawings shall be at 1/4 inch per foot minimum scale and shall include invert elevations and sections required to meet intended purpose.

3.15 CLEANING UP

Add the following Subparagraph:

3.15.3 Prior to the Architect's inspection for Substantial Completion, the Contractor shall clean exterior and interior surfaces exposed to view; remove temporary labels, stains, and foreign substances; polish transparent and glossy surfaces; clean equipment and fixtures to a sanitary condition; clean roofs; clean site; sweep paved areas and rake clean other surfaces; remove trash and surplus materials from the site.

Add following Paragraphs in their entirety:

3.19 REPRODUCIBLE RECORD DRAWINGS

3.19.1 At the completion of the Project, the contractor shall submit one (1) complete set of drawings with all changes made during construction, including concealed mechanical, electrical, and plumbing items. Drafting shall be compatible and the Contractor shall submit these as paper copies and electronic PDF files and working files. The record drawings shall exclude the seal of the Architect and/or Engineer and shall have a statement added to indicate the purpose of the drawings (i.e., "RECORD DRAWING").

3.20 PREVAILING WAGE RATES

3.20.1 No employee used in this construction may be paid less than the minimum wage rate provided herein in Article 16.

3.21 ANTITRUST VIOLATIONS

3.21.1 To permit the Owner to recover damages suffered; in antitrust violations, the Owner/Contractor Agreement shall include the following, "Contractor hereby assigns to Owner any and all claims for overcharges associated with this contract which are under the antitrust laws of the United States, 15 U.S.C.A., Sec. 1 et.seq. (1973)". The Contractor shall include this provision in his agreements with each subcontractor and supplier. Each subcontractor shall include such provisions in agreements with sub-subcontractors and suppliers.

ARTICLE 4 - ARCHITECT

4.2 ADMINISTRATION OF THE CONTRACT

Delete text of following Subparagraphs and substitute the following:

4.2.6 The Architect will have authority to reject Work which does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable for implementation of the intent of the

Contract Documents, the Architect will have authority to require additional inspection or testing of the Work in accordance with Subparagraphs 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 reasonably and 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 an equipment suppliers, their agents or employees, or other persons performing portions of the Work.

ARTICLE 5 - SUBCONTRACTORS

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

Delete text of Subparagraphs 5.2.1, 5.2.2, 5.2.3, and 5.2.4 in their entirety and substitute the following:

5.2.1 As soon as practicable after Award of the Contract but no later than 10 days prior to the submittal date for the Contractor's first Application for Payment, Contractor shall furnish to the Owner and Architect in writing the names of the persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the Work. Where Subcontractors or Sub-subcontractors have been listed in the Specifications or in an Addendum as a Listed Subcontractor the proposed entity shall be one of those firms listed, unless agreement has been reached to accept a proposed Substitute Subcontractor as listed on the Proposal Form. Regarding proposed persons or entities to perform portions of the Work where no Listed Subcontractors have been listed or approved by Addendum, the Architect will promptly reply to the Contractor in writing stating whether or not the Owner or the Architect, after due investigation, has objection to any such proposed person or entity. Failure of the Owner or Architect to reply promptly shall constitute notice of no objection. Failure of the Contractor to submit the subject names in a timely manner will delay processing of the Contractor's Application for Payment.

5.2.2 The Contractor shall not contract with a proposed person or entity to which the Owner or Architect has made a timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made an objection under the provisions of Subparagraph 5.2.1.

5.2.3 If the Owner or Architect has objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no objection. The Contract Sum shall be increased or decreased by the difference in cost occasioned by such change and an appropriate Change Order shall be issued. However, no increase in the Contract Sum shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required in Subparagraph 5.2.1.

5.2.4 Prior to such substitution the Contractor shall notify the Architect of his intent and reasons for such proposed substitutions. The Contractor shall not change a Subcontractor, person or entity previously selected if the Owner or Architect makes objection to such change.

Add Subparagraphs 5.2.5 and 5.2.6 as follows:

5.2.5 The Contractor shall submit the list of proposed Subcontractors on AIA Document G805. The Contractor may obtain blank copies from the Architect.

5.2.6 The Contractor is required to visit the site and completely familiarize himself with the existing conditions prior to the proposal. No additional increase in the Contract amount will be provided when existing or known conditions require a certain amount of work to comply with the intent of the Contract Documents.

ARTICLE 7 - CHANGES IN THE WORK

7.2 CHANGE ORDERS

Add the following Subparagraphs:

7.2.2 The cost or credit to the Owner resulting from a change in the work shall be determined in one or more of the ways listed below. The first method listed shall be used unless the Architect determines that the method is inappropriate, in which case another method shall be selected:

A. By mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation. Where additional work is involved, the lump sum shall represent the estimated cost of labor and materials plus markups to cover overhead and profit:

1. To compensate the contractor or subcontractor actually performing a part of the work for the combined cost of overhead, profit, General Conditions, insurance and bonds, the performing party shall be entitled to a single markup not to exceed 15% of the estimated cost of that part of the work.
2. To compensate the contractor for the combined cost of overhead, profit, General Conditions, insurance and bonds on work performed by subcontractors, the Contractor shall be entitled to a single markup not to exceed 10% of the subcontract amount.
3. When a subcontractor performs the work of a change, the 15% markup for combined overhead, profit, General Conditions, insurance and bonds shall be used only by the sub-subcontractor. The Contractor and Subcontractor would each be entitled to a single markup not to exceed 10% of the cost to them for the Subcontractor and sub-subcontractor, respectively.

B. By unit prices stated in the Contract Documents or subsequently agreed upon. Additional markups for overhead and profit will not be allowed in Unit Price work.

C. By cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee.

7.3 CONSTRUCTION CHANGE DIRECTIVES

Delete text of Subparagraph 7.3.3 in its entirety and substitute the following:

7.3.3 The cost or credit to the Owner resulting from a change in the Work shall be determined in one or more ways listed below. The first method listed shall be used unless the Architect determines that the method is inappropriate, in which case another method shall be selected.

.1 By mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation. Where additional Work is involved, the lump sum shall represent the estimated cost of labor and materials plus markups to cover overhead, profit, General Conditions, insurance and bonds:

To compensate the Contractor or Subcontractor actually performing a part of the Work for the combined cost of overhead, profit, General Conditions, insurance and bonds, the performing party shall be entitled to a single markup not to exceed 15% of the estimated cost of that part of the Work.

To compensate the Contractor for the combined cost of overhead and profit on work performed by Subcontractors, the Contractor shall be entitled to a single markup not to exceed 10% of the subcontract amount.

When a Sub-subcontract performs the Work of a change, the 15% markup for combined overhead and profit shall be used only by the Sub-subcontractor. The Contractor and Subcontractor would each be entitled to a single markup not to exceed 10% of the cost to them from the Subcontractor and Sub-subcontractor respectively.

.2 By unit prices stated in the Contract Documents or subsequently agreed upon. Additional markups for overhead and profit will not be allowed in Unit Price Work.

.3 By cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee.

Add the following Subparagraph:

7.5 CHANGES FUNDED BY ALLOWANCES

7.5.1 Allowances balances may be used to fund changes in the work.

The Contractor will not be allowed an overhead and profit mark-up when changes in the work are funded by one of the Allowances.

ARTICLE 8 - TIME

8.1 DEFINITIONS

Delete Subparagraph 8.1.2 in its entirety and substitute the following:

8.1.2 Unless agreed otherwise, the date inserted on the Agreement form and the Date of Commencement of the Work shall be as follows:

.1 The date inserted on the first page of the Agreement form will be the date the Owner formally awards the Contract. As soon as feasible after receipt of Proposals, the Architect will present Agreement forms to the Contractor for his review and signature; the Contractor will be allowed a maximum of five days from the date the prepared Agreements are presented to 1) obtain the required bond forms and insurance certificates and 2) return the executed Agreement and supporting documents to the Architect for transmittal to the Owner for final review and execution.

.2 The Date of Commencement of the Work is the date that either (1) the fully executed Agreement of (2) a written Notice to Proceed is delivered to the Contractor and constitutes day "0" (zero) of the stated Completion Time.

8.3 DELAYS AND EXTENSIONS OF TIME

Add the following to the end of Paragraph 8.3.1:

Claims for an extension of time due to weather will not be accepted.

8.1.2 Unless agreed otherwise, the date inserted on the Agreement form and the Date of Commencement of the Work shall be as follows:

Add the following Subparagraph:

8.3.4 The following is a requirement of the Contract and will be included in the Agreement Between Owner and Contractor under Time of Completion and the blank spaces will be completed indicating the completion date as stated on the Proposal Form.

The Work to be performed under this Contract shall be commenced on and substantially completed by the date as stated on the Proposal Form, or by such dates thereafter as may be established in any written extensions granted under Article 8 of the General Conditions. The parties hereto agree that time is of the essence of this contract and that the pecuniary damages which would be suffered

by the Owner, if the Contractor does not complete all work called for in the contract documents by the specified date, are in their very nature difficult of ascertainment.

It is therefore expressly agreed as a part of the consideration inducing the Owner to execute this contract that the Owner may deduct from the final payment made to the Contractor a sum equal to $5000.00 per day for each and every calendar day beyond the agreed date which the Contractor shall require for Substantial Completion of the work included in this contract. It is expressly understood that the said sum per day is agreed upon as a fair estimate of the pecuniary damages that will be sustained by the Owner in the event that the work is not completed within the agreed time, or within the legally extended time, if any, otherwise provided for herein. Said sum shall be considered as liquidated damages only and in no sense shall be considered a penalty, said damage being caused by additional compensation to personnel, for loss of interest on money and other miscellaneous increased costs, all of which are difficult of exact ascertainment.

Failure to complete and project close out sixty days after Substantial Completion will result in liquidated damages being assessed in the amount of $1000.00 per calendar day until project close out.

8.3.5 The Contractor shall include in his base bid proposal all overhead and profit necessary to complete the project. No additional overhead or profit will be paid for extensions of time granted for loss of scheduled work days.

ARTICLE 9 - PAYMENTS AND COMPLETION

9.2 SCHEDULE OF VALUES

Renumber Paragraph as 9.2.1 and Add Subparagraph 9.2.2 as follows:

9.2.2 In order to facilitate the review of Applications for Payment, the Schedule of Values shall be submitted on AIA Documents G702 and G703 or other similar forms approved by the Owner, and shall include the following:

.1 General Contractor's costs for Contractor's fee, bonds and insurance, mobilization, etc., shall be listed as individual line items.
.2 Contractor's costs for various construction items shall be detailed. For example, concrete Work shall be subdivided into footings, grade beams, floor slabs, paving, etc. These subdivisions shall appear as individual line items.
.3 On major subcontracts, such as mechanical, electrical and plumbing, the schedule shall indicate line items and amounts in detail (for example; underground, major equipment, fixtures, installation of fixtures, start up, etc.)
.4 Costs for subcontract Work shall be listed without any additional of General Contractor's costs for overhead, profit or supervisions.
.5 Where payment for stored materials may be requested prior to installation, material and labor shall be listed as separate line items.
.6 Sample pages from an approved schedule of values are included following this document.

9.3 APPLICATIONS FOR PAYMENT

Delete Subparagraph 9.3.1 in its entirety and substitute the following:

9.3.1 At least ten (10) days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment for operations completed in accordance with the schedule of values. Prior to this submittal, the Contractor shall contact the Architect's Field Department for on-site review of the proposed application. Upon approval by the Architect's Field Department, the Application for Payment shall be notarized and submitted to the Architect.

Included shall be data required to support the Contractor's right to payment as may be required by the Owner or Architect, such as copies of requisitions from subcontractors and material suppliers, and reflecting retainage, if provided for elsewhere in the contract documents.

Delete Subparagraph 9.3.2 in its entirety and substitute the following:

9.3.2 Payments will be made on account of materials or equipment 1) incorporated in the Work and 2) Suitably stored at the site or 3) suitably stored at some off-site location provided the following conditions are met for off-site storage:

.1 The location must be agreed to, in writing, by the Owner and Surety.
.2 The location must be a bonded warehouse.
.3 Surety must agree, in writing, to each request for payment.
.4 The Contractor must bear the cost of the Owner's and Architect's expenses related to visiting the off-site storage area.

Payments for materials or equipment stored on or off the site shall be conditioned upon submission by the Contractor of bills of sale or such other procedures satisfactory to the Owner to establish the Owner's title to such materials or equipment or otherwise protect the Owner's interest, including applicable insurance (naming the Owner as insured) and transportation to the site for those materials and equipment stored off the site. Under no circumstances will the Owner reimburse the Contractor for down payments, deposits, or other advance payments for materials or equipment.

The Contractor acknowledges that the review of materials stored off site is an additional service of the Architect and shall be charged for that service. The cost for that service will be established by the Architect and is not subject to appeal.

Add the following Subparagraph:

9.3.4 Contractors shall submit application in quadruplicate using AIA Document G702 and G703, Application and Certificate for Payment, 1992 Edition. All blanks in the form must be completed and signatures of Contractor and Notary Public must be original on each form.

9.4 CERTIFICATES FOR PAYMENT

Add the following Subparagraph:

9.4.3 The Architect will affix his signature to the same form described in Paragraph 9.3.4 to signify his certification of payment provided the application is otherwise satisfactory.

9.6 PROGRESS PAYMENTS

Add the following Subparagraph:

9.6.8 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 in the conditions of the Contract as follows:

On or about the 15th day of each month 95% of the proportion of the Contract Sum properly allocable to labor, materials and equipment incorporated in the Work and 95% of the portion of the Contract Sum properly allocable to materials and equipment suitably stored at the site or at some other location agreed upon in writing by the parties, up to the first (1st) day of that month; less the aggregate of previous payments in each case; and upon Substantial Completion of the entire work, a sum sufficient to increase the total payments to 95% of the Contract Sum less such retainages as the Architect shall determine for all incomplete work and unsettled claims.

Upon determination of final completion and upon acceptance of all required contract close out documentation, College of the Mainland will release remaining 5% retainage to Contractor.

9.7 FAILURE OF PAYMENT

Delete the phrase "or awarded by binding dispute resolution".

9.8 SUBSTANTIAL COMPLETION

9.8.1 Add the following:

The following items are a partial list of requirements, as applicable to the Project, which must be completed prior to establishing Substantial Completion.

1. All fire alarm system components must be completed and demonstrated to the Owner.
2. Local fire marshal approval certificate must be delivered to the Owner.
3. All exterior clean-up and landscaping must be complete.
4. All final interior clean-up must be complete.
5. All HVAC air and water balancing must be completed within 10 days after third party report is submitted.
6. All Energy Management Systems must be complete and fully operational and demonstrated to the Owner.
7. All communications equipment, telephone (by third party) system, and P.A. systems must be complete and demonstrated to the Owner.
8. All final lockset cores must be delivered for owner installation in sufficient time to allow all final Owner-directed keying to be completed.
9. All room plaques and exterior signage must be completed.
10. All Owner demonstrations must be completed including kitchen equipment, HVAC equipment, plumbing equipment, and electrical equipment.
11. A final certificate of occupancy (or owner reviewed and approved Temporary Certificate of Occupancy) must be signed by the Contractor and delivered to the Owner.
12. All operation and maintenance manuals are delivered and approved (“D-slant” ring binders in triplicate).

9.10 FINAL COMPLETION AND FINAL PAYMENT

At Subparagraph 9.10.2, modify as follows:

.1 On line 8, delete the phrase "if any".
.2 On line 8, delete the phrase "if required by the Owner".

Add the following to Subparagraph 9.10.2:

Prior to final payment, the Contractor shall submit in triplicate to the Architect the following completed forms:

1. Contractor's Affidavit of Payment of Debts and Claims, AIA Document G706.
2. Contractor's Affidavit of Release of Liens, AIA Document G706A Consent of Surety to Final Payment, AIA Document G707.
3. Notarized General Contractor's Warranty.
4. Notarized Subcontractor's Warranty.
5. Subcontractor's Lien Releases - notarized with signatures and notary seal on same page.
6. Each Offeror (and subcontractor and supplier submitting a proposal to an Offeror) shall submit a notarized affidavit stating that no asbestos, PCB, or lead, except for flashing in roofing, containing building materials were used. (Form AE)

7. Maintenance and inspection manuals. Three (3) sets of each bound in a 3 inch “D-slant” ring binder.
8. Record drawings and record specifications.

Documents identified as affidavit must be notarized. All manuals will contain an index listing the information submitted. The index sections will be divided and identified by tabbing each section as listed in the index.

Upon request, the Architect will furnish the Contractor with blank copies of the forms listed above. Final payment, constituting the entire unpaid balance of the Contract Sum shall be paid by the Owner to the Contractor 60 days after substantial completion of the work unless otherwise stipulated in the Certificate of Completion, the contract fully performed, and Final Certificate of Payment has been issued by the Architect.

Failure to complete and close out project 60 days after substantial completion will result in liquidated damages being assessed of $1000.00 per calendar day until close out occurs.

The Owner may accept certain portions of the work as being complete prior to the acceptance of the entire project. If certain areas are accepted by the Owner as being complete, and if the Contractor has completed all of the requirements for final payment of that portion of work, then the Owner may release retainage for that area/portion of work. Amounts of retainage shall be agreed upon by both Owner and Contractor prior to final acceptance of these areas. No partial retainage release is permitted.

Refer to Section 017000 for additional requirements.

ARTICLE 10 - PROTECTION OF PERSONS AND PROPERTY

10.3 HAZARDOUS MATERIALS

Delete text of Subparagraph 10.3.2 in its entirety and substitute the following:

10.3.2 If requested in writing by the Contractor, the Owner shall obtain the services of a licensed laboratory to verify a presence or absence of the material or substance reported by the Contractor and, in the even such material or substance is found to be present, to verify that is has been rendered harmless. If requested in writing by the Contractor or Architect, 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 proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection.

Add the following Subparagraphs:

10.5 ASBESTOS, LEAD OR PCBs CONTAINING MATERIALS

10.5.1 The contractor and each subcontractor, prior to final payment, shall submit a notarized statement on their letterhead certifying "to the best of their information, knowledge, and belief asbestos, asbestos containing materials, and PCBs have not been used or incorporated into the Work and lead or lead bearing materials have not been incorporated into potable water systems.” For the purpose of definition as used in this statement, the term “potable water systems” includes, but is not limited to, those water systems for drinking fountains, all sinks, showers, bath tubs, residential and commercial kitchen equipment, ice machines, and hose bibbs, as applicable to the project. The Contractor shall also obtain such statements from Subcontractors and all such statements shall be notarized.

10.5.2 The contractor and each subcontractor shall submit copies of the Material Safety Data Sheet (MSDS) for each material.

ARTICLE 11 - INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.1 At Subparagraph 11.1.1, add the following clauses:

11.1.1.9 Liability insurance shall include all major divisions of coverage and be on a comprehensive basis including:

1. Premises operations (including X, C, and U coverages).
2. Independent Contractors' Protective.
3. Products and completed Operations.
4. Personal Injury Liability with Employment Exclusion deleted.
5. Contractual, including specified provisions for Contractor obligation under Paragraph 3.18.
6. Owned, non-owned and hired motor vehicles.
7. Broad Form Property Damage including Completed Operations

11.1.1.10 If the General Liability coverages are provided by a Commercial General Liability Policy on a claims-made basis, the policy date or Retroactive Date shall predate the Contract; the termination date of the policy or applicable extended reporting period shall be no earlier than the termination date of coverage required to be maintained after final payment, certified in accordance with Subparagraph 9.10.2.

11.1.2 At Subparagraph 11.1.2, add the following:

The insurance required by Subparagraph 11.1.1 shall be written for not less than the following limits, or greater if required by law:

INSURANCE MANAGEMENT - INSURANCE AND BONDS

GENERAL

The District shall require that the following insurance requirements be met on public works contracts:

1. No work will be commenced until all requirements of this section have been approved by the District in writing.
2. The insurance shall contain a provision that at least 30 days prior written notice shall be given to the District in the event of cancellation, material change or non-renewal.
3. Insurance shall be underwritten by a company rated not less than B+VII in the "Best's" latest published guide.
4. There shall be a hold harmless agreement in which the contractor assumes liability on the contract and holds the School District harmless.
5. The contractor shall purchase and maintain in force the following kinds of insurance and bonds for operations under construction contracts and as specified in each section.

CASUALTY INSURANCE

1. Worker's Compensation Insurance Coverage

Definitions:

Certificate of coverage ("Certificate") - A copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

Duration of the project - includes the time from the beginning of the work on the project until the contractor's/person's work on the project has been completed and accepted by the governmental entity.

Persons providing services on the project ("subcontractor" in Texas Labor Code 406.096) - includes all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity that furnishes persons to provide services on the project. "Services" shall include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

1. The contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code 401.011 (44) for all employees of the contractor providing services on the project for the duration of the project.

2. The contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.

3. If the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project, the contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing the coverage has been extended.

4. The contractor shall obtain from each person providing services on a project, and provide to the governmental entity:

    a. a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on a project; and
    b. no later than seven (7) days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.

5. The contractor shall retain all required certificates of coverage for the duration of the project and one (1) year thereafter.

6. The contractor shall notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.

7. The contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Commission, informing

all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.

8. The contractor shall contractually require each person with whom it contracts to provide services on a project, to:

   a. provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011 (44) for all of its employees providing services on the project, for the duration of the project;

   b. provide to the contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;

   c. provide the contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

   d. obtain from each other person with whom it contracts, and provide to the contractor:

      1) a certificate of coverage, prior to the other person beginning work on the project; and

      2) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project.

   e. retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

   f. notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provisions of coverage of any person providing services on the project; and

   g. contractually require each person with whom it contracts to perform as required by paragraphs a - g, with the certificates of coverage to be provided to the person for whom they are providing services.

9. By signing this contract or providing or causing to be provided a certificate of coverage, the contractor is representing to the governmental entity that all employees of the contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.

10. The contractor's failure to comply with any of these provisions is a breach of contract by the contractor which entitles the governmental entity to declare the contract void if the contractor does not remedy the breach within ten days after receipt of notice of breach from the governmental entity.

11. The Contractor shall post the following language:

REQUIRED WORKERS' COMPENSATION COVERAGE

"The law requires that each person working on this site or providing services related to this construction project must be covered by workers' compensation insurance. This includes persons providing, hauling, or delivering equipment or materials, or providing labor or transportation or other service related to the project, regardless of the identity of their employer or status as an employee."

"Call the Texas Workers' Compensation Commission at 512 - 440 - 3789 to receive information on the legal requirements for coverage, to verify whether your employer has provided the required coverage, or to report an employer's failure to provide coverage."

Casualty Insurance and Securities-Minimum Requirements

1. Successful contractor must maintain workers' compensation coverage for employees as required by all applicable Federal, State, Maritime, and local laws including Employer's Liability with a limit of at least $100,000.

2. Comprehensive-General Liability Insurance (Occurrence basis only)*****

Bodily Injury and Property Damage:	
Each Occurrence	$1,000,000
Aggregate	$2,000,000
Personal and Advertising Injury:	
Occurrence	$1,000,000
Broad Form Property Damage:	
Each Occurrence	$1,000,000
(Include Complete Operations)	
Aggregate	$2,000,000
(Include X-C-U Coverage)	
Covering Hold Harmless Property Damage:	
Each Occurrence	$1,000,000
Aggregate	$2,000,000
Independent Contractors Bodily Injury/Property Damage:	
Each Occurrence:	$1,000,000
Aggregate	$2,000,000
Products and Completed Operations:	
Bodily Injury: Each Occurrence:	$1,000,000
Property Damage: Each Occurrence:	$1,000,000
Aggregate:	$2,000,000
Fire Damage, Legal Liability	
Any One Fire	$100,000
Medical Expenses	

Any One Person $5,000

AUTOMOBILE LIABILITY INSURANCE

3. Comprehensive Automobile Liability Insurance
Business (Commercial) Automobile Liability Insurance***** covering all owned, non-owned and hired vehicles:

Bodily Injury and Property Damage
Combined Single Limit $1,000,000

UMBRELLA LIABILITY INSURANCE (EXCESS)

Umbrella Liability Insurance - $1,000,000.00

1. The Owner shall be named as an additional insured on the contractor's policy as to the subject job.
2. This policy shall provide coverage over the Workmen's Compensation, Commercial General Liability and Business Automobile Liability. (Covering all owned, non-owned, and hired automobiles).

No deletions/exclusions from standard coverage form allowed without written consent of Alief ISD

OWNERS AND CONTRACTORS PROTECTIVE LIABILITY

Owners and Contractors Protective Liability Insurance

1. Naming the Owner as insured with the following limits: $1,000,000.00 each occurrence, $1,000,000.00 aggregate as primary limits, irrespective of whether occurrence consists of bodily injury, death, property damage or combination thereof.
2. Covering the work to be performed for Owner by the contractor and its subcontractor, if any. It will be necessary that the Contractor and the subcontractor, if any, be designated in the Declarations of the policy.
3. The definition of insured in the policy shall be endorsed to include officers, employees of the College of the Mainland, with respect to the work performed by the contractor.
4. Written with same company as CGL policy.
5. The architects and engineers shall be additional insured but only will have excess coverage. The full policy limits will protect the school district if need and only the excess will protect the architects and engineers.
6. Original policy to be placed on file with the College of the Mainland.

PROPERTY INSURANCE (BUILDER'S RISK)

1. The policy shall be written in the name of the owner, contractor, and subcontractors as their interest may appear.
2. The policy shall be written on an all risk basis for physical loss or damage and include theft, vandalism, malicious mischief.
3. The amount of coverage shall be for the full insurable value of work.
4. The deductible shall not be over $1,000.00 without the approval of the owner. (Deductible losses shall be paid by the contractor).
5. The policy shall include an endorsement allowing owner occupancy, and the insurance shall not be canceled or altered on account of partial occupancy prior to completion.
6. A subrogation clause shall waiver subrogation as to the contractor, subcontractor, sub-subcontractors, the owner and his employees and representatives.
7. The original builders risk policy shall be furnished to the owner prior to start of the job.

BONDS

Bonds are required for public works contracts under the following circumstances:

1. Performance Bond and Labor and Material Payment Bond, each in a personal sum equal to 100% of contract sum if the formal contract is in excess of $25,000.00.
2. A Proposal Bond or Proposal Security in the amount of 10% of any proposal of $25,000.00 or more must be submitted with formal proposals on public works contracts or as otherwise specified in each contract.
3. Copies of the bonds shall be filed with the county clerk and the owner shall receive a file receipt.
4. Performance and payment bonds shall remain in force for one (1) year after completion of the contract.
5. The work will not be started until the bonds and issuing companies have been accepted as satisfactory by the owner.
6. The original bonds will be delivered to the owner with an attached authorized power of attorney.

11.1.3 At Subparagraph 11.1.3, add the following sentence:

Proof of insurance shall be evidenced on an original Certificate of Insurance-Construction, ACORD Form 25-S, with an original signature of the Authorized Representative. Policy exclusions and/or restrictions should be clearly explained on the Certificate or in an attached letter from the issuing Agency. Blank areas on the Certificate should have "not covered" written across the printed areas when coverage is not provided.

Add the following Subparagraph:

11.1.3.1 Proof of insurance shall be evidenced on 1) an original ACORD Certificate of Insurance 25-N (1/95) and 2) an original Supplemental Attachment for ACORD Certificate of Insurance 25-S (1/95), AIA Document G715-1991, indicating the minimum Contractor's Insurance required. The Contractor is urged to carry such additional insurance as he may deem appropriate to provide protection from risks assumed under this contract. The Contractor shall fill in the blank spaces on this form and submit one copy each of the completed Certificate of Insurance forms to the Owner and Architect prior to commencement of the Work. The required insurance must be written by a Company licensed to do business in the State of Texas and be acceptable to the Owner.

Add the following Subparagraph:

11.1.5 Insurance shall be underwritten by a company rated not less that B + X11 in Best's latest published guide and be acceptable to the Owner.

11.2 OWNER'S LIABILITY INSURANCE

Delete Paragraph 11.2 in its entirety and replace with the following:

11.2.1 The Contractor shall be responsible for purchasing and maintaining Owner Protective Liability insurance naming the Owner as insured with the stated limit to be per occurrence as primary limit (combined single limit, irrespective of whether occurrence consists of personal injury, death, property damage, or combination thereof). The policy shall cover the work to be performed for the Owner by the Contractor and all subcontractors. The definition of insured in the policy shall be endorsed to include officers, employees of the Owner, while acting within the scope of employment or function for the Owner with respect to the work performed by the Contractor; the project architect and his consultants as listed in the Proposal Documents shall also be included as additional insured. The policy shall be written with the same company as the Comprehensive General Liability policy.

11.2.2 Refer to Subparagraph 11.1.5 for additional requirements that apply to this Subparagraph also.

11.3 PROPERTY INSURANCE

Delete Paragraphs 11.3.1 through 11.3.10 in their entirety and substitute the following:

11.3.1 The contractor shall purchase and maintain, in a company or companies or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance in the amount of the initial Contract Sum as well as subsequent modifications thereto for the entire Work at the site on a replacement cost basis without voluntary deductibles. Such property insurance shall be maintained until final payment has been made as provided in Subparagraph 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Subparagraph 11.3 to be covered, whichever is earlier. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Work.

11.3.2 Property insurance shall be on an all-risk policy form and shall insure against the perils of fire and extended coverage and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, and collapse, false work, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover loss. This insurance is not intended to cover machinery, tools or equipment owned or rented by the Contractor which are utilized in the performance of the Work but not incorporated into the permanent improvements. The Contractor shall, at the Contractor's own expense, provide insurance coverage for owned or rented machinery, tools or equipment which shall be subject to the provisions of Subparagraph 11.3.7. Coverage for other perils shall not be required unless otherwise provided in the Contract Documents.

11.3.3 The property insurance shall include an endorsement allowing Owner occupancy and the insurance shall not be altered or canceled on account of partial occupancy prior to final completion.

11.3.4 If the property insurance requires minimum deductibles and such deductibles are identified in the Contract Documents, the Contractor shall pay costs not covered because of such deductibles.

11.3.5 This property insurance shall cover portions of the Work stored off the site after written approval of the Owner at the value established in the approval, and also portions of the Work in transit.

11.3.6 Before an exposure to loss may occur, the Contractor shall file with the Owner, a copy of each policy that includes insurance coverages required by this Subparagraph 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 until at least 30 days' prior written notice has been given to the Owner.

11.3.7 A loss insured under Contractor's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insured, as their interests may appear. The Contractor shall pay Subcontractors their just shares of 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 a similar manner.

11.3.8 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 received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach. If after such loss no other special agreement is made, replacement of damaged property shall be covered by appropriate Change Order.

11.3.9 The Owner as fiduciary shall have power to adjust and settle a loss with insurers.

11.4 PERFORMANCE BOND AND PAYMENT BOND

Add the following Subparagraphs:

11.4.3 The Performance Bond Form and Labor and Material Payment Bond Form shall be executed and submitted to the Architect in duplicate prior to commencement of the work. The bonding companies must be acceptable to the Owner.

11.4.4 Each bond shall be of penal sum equal to 100% of the Contract Sum and shall be compatible with the provisions of the governing authority. The Contractor shall file copies of each bond with the county clerk and furnish the Owner with a file receipt. The bonds shall remain in force throughout the warranty period of the contract. The work will not be started until the bonds and issuing companies have been accepted as satisfactory by the Owner. The original bonds will be delivered to the Owner with an attached authorized power of attorney.

11.4.5 Claims must be sent to the Contractor and his Surety in accordance with Article 5160, Revised Civil Statutes. The Owner will furnish in accordance with such Article, a copy of the Payment Bond as provided therein to claimants upon request. All claimants are cautioned that no lien exists on the funds unpaid to the Contractor on such Contract, and that reliance on notices sent to the Owner may result in loss of their rights against the Contractor and/or his Surety.

The Owner is not responsible in any manner to a claimant for collection of unpaid bills, and accepts no such responsibility because of any representation by any agent or employee.

ARTICLE 13 - MISCELLANEOUS PROVISIONS

13.6 INTEREST

Delete Subparagraph in its entirety.

ARTICLE 14 - TERMINATION OR SUSPENSION OF THE CONTRACT

Add the following Subparagraph:

14.2.5 Contractor hereby assigns the Owner any and all claims for overcharges associated with this Contract which arise under the antitrust laws of the United States, 15 U.S.C.A. Section 1 ET.SEQ. (1973).

14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

Delete Subparagraph 14.4.3 in its entirety and Add the following:

14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment from the Owner on the same basis provided in Subparagraph 14.1.3. The Contractor will NOT be entitled payment for overhead and profit on work NOT performed.

Add the following Articles:

ARTICLE 15 - CLAIMS AND DISPUTES

15.1 CLAIMS

Delete the text of Subparagraphs 15.1.1 and 15.1.3 in their entirety and substitute the following:

15.1.1 Definition. A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner, Architect and Contractor arising out of or relating to the Contract.

15.1.3 Continuing Contract Performance. Pending final resolution of a Claim, unless otherwise agreed in writing, the Contractor shall proceed diligently with performance of the Contract.

15.2 INITIAL DECISION

Delete the text of Subparagraph 15.2.1 and 15.2.2 in their entirety and substitute the following:

15.2.1 Decisions of Architect. Claims including those alleging an error or omission by the Architect, shall be referred initially to the Architect for action. If the parties are unable to agree, appeal shall be as stated at ARTICLE 15A.

ARTICLE 15A: Any claim, disputes or matters arising out of this contract between the Architect, Owner and Contractor or any combination of those parties shall be submitted to a court of appropriate jurisdiction.

15.2.2 The Architect will review Claims and taken one or more of the following preliminary actions within ten days of receipt of a Claim: (1) request Additional supporting data from the claimant; (2) submit a schedule to the parties indicating when the Architect expects to take action; (3) reject the Claim in whole or in part, stating reasons for rejection,; (4) recommend approval of the Claim by the other party or (5) suggest a compromise. The Architect shall notify the surety, if any, of the nature and amount of the Claim.

Add the following Subparagraph:

15.2.9 If a Claim has not been resolved after consideration of the foregoing and of further evidence presented by the parties or requested by the Architect, the Architect will notify the parties in writing that the Architect Architect's decision will be made within seven (7) days.

Upon expiration of such time period, the Architect will render to the parties the Architect's written decision relative to the Claim, including and change in the Contract Sum or Contract Time or both. If there is a surety and there appears to be possibility of a Contractor's default, the Architect shall notify the surety and request the surety's assistance in resolving the controversy.

15.4 ARBITRATION

Delete Subparagraphs 15.4.1, 15.4.1.1, 15.4.2, and 15.4.3 in its their entirety and all other references to arbitration.

Add the following Subparagraph:

15.4.1 Any claims, disputes, or matters arising out of this contract between the Contractor and the Owner or the Architect not settled by mediation, shall be submitted to a court of appropriate jurisdiction. It is understood and agreed that, in the event that any dispute, controversy, or conflict arises during the design and construction of the Project or following its completion, the parties hereto will cooperate in good faith, if possible, to resolve the issues without resorting to litigation. Should the parties be unable to reach agreement, an independent mediator may be selected by mutual consent of the parties to assist in a further effort to resolve the dispute. Furthermore, if the parties mutually agree to mediation, each party included in the mediation will bear an equal share of all costs related to the mediation.

"Any claims, disputes or matters arising out of the contract will be submitted to mediation only upon the mutual consent of the parties. In the event that mutual consent is not achieved, the parties are free to pursue any claims, disputes or matters in any manner allowed by law."

ARTICLE 16 - LABOR STANDARDS

16.1 PREVAILING WAGE RATES

16.1.1 Contractor and each Subcontractor shall pay to all laborers, workmen, and mechanics employed in execution of this Contract not less than rates set forth by law and as noted in the following Wage Rate Scale, for each craft or type of workman or mechanic needed to execute Contract.

16.1.2 Determination of prevailing wages shall not be construed to prohibit payment of more than rates named.

End of Document

SECTION 01 11 00

SUMMARY OF WORK

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 DESCRIPTION

A. The Project, Biology Lab Upgrades and Renovations for the College of the Mainland at 1200 Amburn Road, Texas City, Texas 77591.

1.2 SCOPE OF WORK

A. The Work shall consist of new construction and renovations to the existing facility as described in the Contract Documents.

1.3 SALVAGED MATERIALS

A. Owner may salvage all items deemed reusable or necessary to keep from facilities to be demolished prior to the start of demolition.

B. Contractor shall remove and turn additional items over to the Owner, as directed.

C. Contractor shall demolish, remove and salvage all other items of demolished work.

1.4 CONTRACTS AND USE OF SITE

A. Contractor Use of Premises:
   1. Confine operations at site to areas permitted by:
      a. Law
      b. Ordinances
      c. Permits
      d. Contract Documents
   2. Do not unreasonably encumber site with materials or equipment.
   3. Assume full responsibility for protection and safekeeping of products stored on premises.
   4. Obtain and pay for use of additional storage or work areas as needed for operations.
   5. Contractor shall establish secured staging area for work and coordinate and provide for safe passage and exit from building areas during construction, as determined by City and District officials.
   6. Contractor shall coordinate all construction activities with Owner.
   7. Owner reserves the right to perform construction operations with its own forces or to employ separate contractors on portions of the Project. Contractor shall coordinate with this work in terms of providing site access, work space, and storage space, cooperation of work forces, scheduling, and technical requirements.
   8. Coordinate all utility shutdowns with Owner and, as required, with local utility companies, prior to commencement of shutdown.
   9. Contractor's personnel, including subcontractors, and their employees, vendors, cleaning service, repair, and maintenance personnel prior to, and after occupancy will be required to obtain a security clearance and wear a badge at all times while on the premises. Badges will be provided by the District.

B. Owner Occupancy:
   1. Partial Owner Occupancy: The Owner reserves the right to place and install equipment in completed areas of the building, prior to Substantial Completion provided that such

occupancy does not interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.

2. A Certificate of Substantial Completion will be executed in accordance with conditions of the Contract.
3. Contractor shall obtain a Certificate of Occupancy from local building officials prior to Owner occupancy.
4. Prior to partial Owner occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon occupancy the Owner will provide operation and maintenance of mechanical and electrical systems in occupied portions of the building.
5. Prior to partial Owner occupancy, emergency and life safety systems shall be fully operational. Emergency and life safety systems include, but are not limited to, fire sprinkler systems, fire alarm systems, and emergency egress devices. For emergency exiting purposes, the path of travel shall be clearly delineated and functional. If required, temporary barricades shall separate on-going construction from occupied spaces as allowed by the governing agency holding jurisdiction over the Project. Required inspections and tests shall have been successfully completed. Upon occupancy the Owner will provide operation and maintenance of emergency and life safety systems in occupied portions of the building.

C. Owner-Furnished Items:
1. The Owner may provide items to the Contractor for installation in accordance with manufacturer's recommendations and instructions.
2. The Owner will arrange and pay for delivery of Owner-furnished items in accordance with the Contractor's Construction Schedule, and will inspect deliveries for damage.
3. If Owner-furnished items are damaged, defective or missing, through no fault of the Contractor, the Owner will arrange for replacement.
4. The Contractor is responsible for designating the delivery dates of Owner-furnished items in the Contractor's Construction Schedule and for receiving, unloading and handling Owner-furnished items at the site. The Contractor is responsible for protecting Owner-furnished items from damage, including damage from exposure to elements, and to repair or replace items damaged as a result of his operations.

D. Coordination with Owner's Forces or Owner's Contractors:
1. Provide site access, space allocation, scheduling, scheduling coordination, coordination of work forces and coordination of technical requirements with contractors that may be selected and employed by Owner to perform work simultaneously and in conjunction with the Work, which may include, but shall not be limited to the following, as applicable to the Project:
    a. Materials Inspection and Testing Agency
    b. HVAC Testing, Adjusting, Balancing Agency
    c. Energy Management System Contractor
    d. Data and Cabling System Contractor
    e. Telephone System Contractor
    f. Modular Furniture Installer
    g. Lighting and Sound
    h. Surveying

E. 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 resulting loss or damage but only to the extent the Owner would be responsible for any such losses or damages under state and/or federal law.

F. The Architect will neither have control over or charge of, nor be responsible 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, except as noted in the above paragraph.

G. No demolition will be allowed above, below, adjacent to or near any occupied areas of the existing building.

1.5 PROTECTION OF EXISTING PROPERTY

A. Contractor shall provide and maintain adequate protection of all Owner's existing property during duration of Project.

B. Contractor shall verify location of all existing underground pipelines on site with the owner of such pipelines and authorities having jurisdiction and shall provide and maintain adequate protection of all such pipelines during duration of Project.

C. Protection of Trees:
1. Provide wood barricades around trees and shrubs at their drip line in traffic areas to protect them from construction operations until Substantial Completion, or until barricade removal is directed by Architect.

1.6 USE OF ASBESTOS FREE MATERIALS, PRODUCTS AND SYSTEMS

A. The Contractor is reminded to refer to Document AB, Instructions to Offerors for requirements regarding asbestos containing materials (ACM).

PART 2 - PRODUCTS

2.1 MATERIALS

A. Refer to Specification Sections.

PART 3 - EXECUTION

3.1 CONSTRUCTION SCHEDULE

A. The Owner has a critical need for the work to occur during the college's winter break. The anticipated construction start date is November 28th, 2016 and shall be Substantially Complete by January 2nd, 2017.

B. Refer to Section 01 32 16 for other scheduling requirements, and to Document 00 73 00 - Supplementary Conditions for information concerning liquidated damages.

END OF SECTION

SECTION 01 21 00 - ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.
   1. Certain items are specified in the Contract Documents by allowances.
   2. Allowances are established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor.
   3. If necessary, additional requirements will be issued by Change Order.

B. Types of allowances include the following:
   1. Lump sum allowances.
   2. Unit cost allowances.
   3. Quantity allowances.
   4. Contingency allowances.
   5. Testing and inspecting allowances.

C. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

D. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

E. Purchase products and systems selected by Architect from the designated supplier.

1.2 SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

C. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.

D. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.3 COORDINATION

A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.4 LUMP SUM, UNIT COST, AND QUANTITY ALLOWANCES

A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include freight, and delivery to site.

B. Unless otherwise indicated, Contractor's costs for receiving and handling at the site, labor, installation, overhead and profit, and similar costs related to products and materials selected by Architect under an allowance shall be included as part of the Contract Sum and is not part of the allowance.

C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
   1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.5 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. The costs include delivery, installation, insurance, equipment rental, and similar costs.

C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.

D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.6 TESTING AND INSPECTING ALLOWANCES

A. Testing and inspecting allowances include the cost of engaging testing agencies, actual tests and inspections, and reporting results.

B. The allowance does not include incidental labor required to assist the testing agency or costs for retesting if previous tests and inspections result in failure. The cost for incidental labor to assist the testing agency shall be included in the Contract Sum.

C. Costs of services not required by the Contract Documents are not included in the allowance.

D. At Project closeout, credit unused amounts remaining in the testing and inspecting allowance to Owner by Change Order.

1.7 ADJUSTMENT OF ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work in place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
   1. Include installation costs in purchase amount only where indicated as part of the allowance.
   2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
   3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit cost allowances.
   4. Owner reserves the right to establish the quantity of work in place by independent quantity survey, measure, or count.

B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.
   1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
   2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. Allowance No. 1: Owner’s Contingency Allowances: $20,000.00
   1. Include the amount indicated in the Base Proposal as a contingency to cover the cost of hidden, concealed, or otherwise unforeseen conditions which develop during completion of the work. Contractor shall be allowed to recover costs associated with the completion of work under the contingency; no overhead or profit will be allowed.

End of Section

SECTION 01 25 13

PRODUCT SUBSTITUTION PROCEDURES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Specified product compliance, and product quality assurance

B. Specific administrative and procedural requirements for handling requests for substitutions made prior to award of Contract.

C. Requirements for product delivery, storage and handling.

1.2 RELATED REQUIREMENTS

A. Instructions to Offerors: Product options and procedures for submittal of requests for substitutions during the Proposal period.

1.3 DESCRIPTION OF REQUIREMENTS

A. Definitions: Definitions used in this Section are not intended to negate the meaning of other terms used in the Contract Documents, including such terms as “specialties”, “systems”, “structure”, “finishes”, “accessories”, “furnishings”, “special construction”, and similar terms. Such terms are self-explanatory and have recognized meanings in the construction industry.
   1. Products: Shall mean items purchased for incorporation in the Work, regardless of whether they were specifically purchased for the project or taken from the Contractor’s previously purchased stock. The term “product” as used herein includes the terms “material”, “equipment”, “system”, and other terms of similar intent.
      a. Named Products: Are those identified by the use of the manufacturer’s name for a product, including such items as a make or model designation, as recorded in published product literature, of the latest issue as of the date of the Contract Documents.
      b. Specified Products: same as Named Products.
   2. Materials: Shall mean products that must be substantially cut, shaped, worked, mixed, finished, refined, or otherwise fabricated, processed, or installed to form units of work.
   3. Equipment: Is defined as a product with operational parts, regardless of whether motorized or manually operated, and in particular, a product that requires service connections such as wiring or piping.

1.4 PRODUCT QUALITY ASSURANCE

A. Source Limitations: To the fullest extent possible, provide products of the same generic kind, from a single source, for each unit of work.
   1. When it is discovered that specific products are available only from sources that do not or cannot produce an adequate quantity to complete project requirements in a timely manner, consult with the Architect/Engineer for a determination of what product quantities are most important before proceeding. The Architect/Engineer will designate those qualities, such as visual, structural, durability, or compatibility, that are most important. When the Architect/Engineer’s determination has been

made, select products from those sources that produce products that possess the most important qualities, to the fullest extent possible.

B. Compatibility of Options: Compatibility of products is a basic requirement of product selection. When the Contractor is given the option of selecting between two (2) or more products for use on the project, the product selected must be compatible with other products previously selected, even if the products previously selected were also Contractor options. The complete compatibility between the various choices available to the Contractor is not assured by the various requirements of the Contract Documents, but must be provided by the Contractor.

C. Or Equal:
1. Where the phrase “or equal”, “or equivalent”, “or Architects approved equal”, or similar phrasing, occurs in the Proposal Documents, do not assume that materials, equipment, or methods of construction will be approved by the Architect unless the item has been specifically approved for this Work by the Architect.
2. The decision of the Architect shall be final.

D. Where a proposed substitution involves the work of more than one (1) contractor, each contractor involved shall cooperate and coordinate the work with each other contractor involved, so as to provide uniformity and consistency and to assure the compatibility of products.

E. Foreign Product Limitations: “Foreign products” as distinguished from “domestic products” are defined as products that are either manufactured substantially (50 percent or more of value) outside of the United States and its possessions, or produced or supplied by entities known to be substantially owned (more than 50 percent) by persons who are not citizens of nor living within the United States and its possessions.
1. Except under one (1) of the following conditions, select and provide domestic, not foreign, products for inclusion in the Work.
   a. There is no domestic product available that complies with the requirements of the Contract Documents.
   b. Available domestic products that comply with the requirements of the Contract Documents are available only at prices or other procurement terms that are substantially higher (25 percent or more) than for available foreign products that comply with the requirements of the Contract Documents.
   c. At the discretion of the Architect or Owner.
2. Final determination and acceptance will be the responsibility of the Architect.

F. Standards: Refer to Section 01 41 00, Regulatory Requirements for the applicability of industry standards to the products specified for the Project, and for the acronyms used in the text of the Specification Sections.

1.5 SUBSTITUTIONS OF PRODUCTS

A. The products described in the Proposal Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution. The materials and equipment named in, and the procedures covered by these specifications have been selected as a standard because of quality, particular suitability or record of satisfactory performance. It is not intended to preclude the use of equal or better materials or equipment provided that same meets the requirements of the particular project and is approved in an Addendum as a substitution prior to the submission of proposals.

B. No substitution will be considered prior to receipt of proposals unless written request for approval has been received by the Architect at least seven (7) days prior to the date for receipt of proposals. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including drawings, cuts, performance and test data and any other information necessary for an evaluation. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

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

D. The Architect and Owner reserve the right to disapprove the use of any manufacturer who in their judgment is unsuitable for use on the Project and that decision will be final

E. The following are not considered as substitutions:
1. Revisions to the Contract Documents, when requested by the Owner, Architect, or any of their consultants are considered as “changes” not substitutions.
2. Specified Contractor options on products and construction methods included in Contract Documents are choices made available to the Contractor and are not subject to the requirements specified in this Section for substitutions.
3. Except as otherwise provided in the Contract Documents, the Contractor’s determination of and compliance with governing authorities do not constitute “substitutions” and do not constitute a basis for change orders.

F. The following may be considered as a reason for a request for substitution:
1. The request is directly related to an “or approved equal” clause or similar language in the Contract Documents.
2. The specified product or method of construction cannot be provided within the Contract Time in accordance with paragraph below concerning availability of specified items.
3. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
4. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other consideration of merit, after deducting offsetting responsibilities the Owner may be required to bear. These additional responsibilities may include such considerations as additional compensation to the Architect/Engineer for redesign and evaluation services, the increased cost of other work by the Owner or separate contractors, and similar considerations.
5. 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.
6. 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.
7. 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 provides the required warranty.

G. Availability of specified items:
1. Verify prior to submittal of Proposal that all specified items will be available in time for installation during orderly and timely progress of the work.
2. In the event specified items will not be so available, notify the Architect prior to receipt of Proposals. Submit Request for Substitutions in accordance with this section.

3. The request will not be considered if the product or method cannot be provided as a result of the Contractor's failure to pursue the work promptly or coordinate activities properly.
4. Costs of delays because of non-availability of specified items, when such delays could have been avoided by the Contractor, will be back-charged as necessary and shall not be borne by the Owner.

H. A request constitutes a representation that Offeror:
1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
2. Will provide same warranty for Substitution as for specified product, except when inability to provide specified Warranty is reason for request for substitution as described above.
3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.
5. Will reimburse the Owner and pay for all costs, including Architect/Engineer's redesign and evaluation costs resulting from the use of the proposed substitution, or for review or redesign services associated with re-approval by authorities having jurisdiction.

I. **No substitutions will be considered after the Award of Contract.**

1.6 SUBSTITUTION REQUEST SUBMITTAL

A. Requests for Substitutions: Submit three (3) copies of each request for substitution. In each request identify the product or fabrication or installation method to be replaced by the substitution; include related Specifications Section and Drawing numbers, and complete documentation showing compliance with the requirements for substitutions. Include, as appropriate, with each request, the following information:
1. Product data, drawings and descriptions of products, fabrication and installation procedures.
2. Samples, where applicable or requested.
3. A detailed comparison of the significant qualities of the proposed substitution with those of the work originally specified. Significant qualities may include elements such as size, weight, durability, performance and visual effect, where applicable.
4. Coordination information, including a list of changes or modifications needed by other parts of the work and to construction performed by the Owner and separate Contractors that will become necessary to accommodate the proposed substitution.
5. A statement indicating the effect the substitution will have on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
6. Cost information, including a proposal of the net change, if any in the Contract Sum.
7. Certification by the Contractor to the effect that, in the Contractor's opinion, after thorough evaluation, the proposed substitution will result in work that in every significant respect is equal-to or better than the work required by the Contract Documents, and that it will perform adequately in the application indicated. Include the Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.

8. A statement indicating the Contractor will reimburse the Owner and pay for all costs, including Architect/Engineer's re-design and evaluation costs resulting from the use of the proposed substitution.

B. Work-Related Submittals: The Contractor's submittal of, and the Architect/Engineer's acceptance of, Shop Drawings, Product Data, or Samples which are related to work not complying with the Contract Documents, does not constitute an acceptance or valid request for a substitution, nor approval thereof.

1.7 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. General: Deliver, store, and handle products in accordance with manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft. Control to prevent overcrowding of construction spaces or overloading of structure. In particular, coordinate delivery and installation to ensure minimum holding or storage times for items known or recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other sources of loss.
1. Deliver products to the site in the manufacturer's sealed containers or other packaging system, complete with labels intact, and instructions for handling, storage, unpacking, installing, cleaning and protecting.
2. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of product.
3. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
4. Store products at the site or in a bonded and insured off-site storage facility or warehouse in a manner that will facilitate inspection and measurement of quantity or counting of units. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.
5. Store heavy materials away from the project structure or in a manner that will not endanger the supporting construction.

PART 2 - PRODUCTS

2.1 GENERAL PRODUCT COMPLIANCE

A. General: Requirements for individual products are indicated in the Contract Documents; compliance with these requirements is in itself a contract requirement. These requirements may be specified in any one (1) of several different specifying methods, or in any combination of these methods. These methods include the following:
1. Proprietary
2. Descriptive
3. Performance
4. Compliance with Reference Standards

Compliance with codes, compliance with graphic details, allowances, and similar provisions of the Contract Documents also have a bearing on the selection process.

B. Procedures for Selecting Products: The Contractor's options in selecting products are limited by requirements of the Contract Documents and governing regulations. They are not controlled by industry traditions or procedures experienced by the Contractor on previous construction projects. Required procedures include, but are not limited to the following for the various indicated methods of specifying:
1. Proprietary and Semi-Proprietary Specification Requirements:
   a. Single Product Name: Where only a single product or manufacturer is named, provide the product indicated, unless the specification indicates the possible consideration of other products. Advise the

Architect/Engineer before proceeding, when it is discovered that the named product is not a reasonable or feasible solution.

b. Two (2) or More Product Names: Where two (2) or more products or manufacturers are named, provide one (1) of the products named, at the Contractor's option. Exclude products that do not comply with specification requirements. Do not provide or offer to provide an unnamed product, unless the specification indicates the possible consideration of other products. Advise the Architect/Engineer before proceeding where none of the named products comply with specification requirements, or are not feasible for use. Where products or manufacturers are specified by name, accompanied by the term "or approved equal" or similar language, comply with this Section regarding "substitutions" to obtain approval from the Architect/Engineer for the use of an unnamed product.

2. Non-Proprietary Specification Requirements: Where the specifications name products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to the use of these products only, the Contractor may, at his option, use any available product that complies with the Contract requirements.
3. Descriptive Specification Requirements: Where the specifications describe a product or assembly generically, in detail, listing the exact characteristics required, but without use of a brand name, provide products or assemblies that provide the characteristics indicated and otherwise comply with Contract requirements.
4. Performance Specification Requirements: Where the specifications require compliance with indicated performance requirements, provide products that comply with the specific performance requirements indicated, and that are recommended by the manufacturer for the application indicated. The manufacturer's recommendations may be contained in published product literature, or by the manufacturer's individual certification of performance. General overall performance of a product is implied where the product is specified for specific performances.
5. Compliance with Standards, Codes, and Regulations: Where the specifications require only compliance with an imposed standard, code or regulation, the Contractor has the option of selecting a product that complies with specification requirements, including standards, codes, and regulations.
6. Visual Matching: Where matching an established sample is required, the final judgement of whether a product proposed by the Contractor matches the sample satisfactorily will be determined by the Architect. Where there is no product available within the specified product category that matches the sample satisfactorily and also complies with other specified requirements, comply with the provisions of this Section regarding "substitutions" and other Contract Documents for "change orders" for the selection of a matching product in another product category, or for non-compliance with specified requirements.
7. Visual Selection: Except as otherwise indicated, where specified product requirements include the phrase "…as selected from the manufacturer's standard colors, patterns, textures…" or similar phrases, the Contractor has the option of selecting the product and manufacturer, provided the selection complies with other specified requirements. The Architect is subsequently responsible for selecting the color, pattern and texture from the product line selected by the Contractor.
8. Allowances: Refer to individual sections of the specifications and Section 01 21 00, Allowances for an indication of product selections that are controlled by established allowances, and for the procedures required for processing such selections.

C. Producer's Statement of Applicability: Where individual specification sections indicate products that require a "Statement of Applicability" from the manufacturer or other producer, submit a written-certified statement from the producer stating that the producer has reviewed the proposed application of the product on the project. This statement shall state that the producer agrees with or does not object to the Architect/Engineer's specification and the Contractor's selection of the product on the project is suitable and proper.

2.2 SUBSTITUTIONS

A. Condition: The Contractor's request for substitution will be received and considered when extensive revisions to Contract Documents are not required, when the proposed changes are in keeping with the general intent of the Contract Documents, when the request is timely, fully documented and properly submitted, and when one (1) or more of the above conditions are satisfied, all as judged and determined by the Architect/Engineer; otherwise the requests will be returned without action except to record non-compliance with these requirements.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

A. General: Except as otherwise indicated in individual sections of these specifications, comply with the manufacturer's instructions and recommendations for installation of the products in the applications indicated.

B. Anchor each product securely in place, accurately located and aligned with other work.

C. Clean exposed surfaces and protect surfaces as necessary to ensure freedom from damage and deterioration at time of acceptance.

D. Products and assemblies shall be installed complete, in-place, watertight and structurally sound.

3.2 INSTALLATION OF APPROVED SUBSTITUTIONS

A. Coordinate all approved substitutions with adjacent work.

B. Comply with the manufacturer's and/or supplier's instructions and recommendations for installation of the products in the applications indicated.

C. Provide all items required by manufacturer and/or supplier regarding installation, i.e. supplemental supports, anchors, fasteners, painting, etc. whether or not indicated or specified.

END OF SECTION

SECTION 01 26 00

CONTRACT MODIFICATION PROCEDURES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Change procedures.

B. Defect assessment.

1.2 GENERAL

A. Coordinate requirements of this Section with the requirements of the General and Supplementary Conditions of the Contract concerning change procedures.

1.3 CHANGE PROCEDURES

A. Submittals: Submit name of individual authorized to receive change documents, and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

B. Minor Changes: The Architect/Engineer may advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions on Minor Change form or by other similar documents in the form issued by the Architect.

C. Change Proposal Request: The Architect may issue a Change Proposal Request (CPR) or other similar request for proposal in the form issued by the Architect, including a detailed description of proposed change with supplementary or revised Drawings and Specifications, a change in Contract Time for executing the change and the period of time during which the requested price will be considered valid. Contractor will prepare and submit estimate in the form of a Change Proposal so as to not cause delays in the Project.

D. Use of allowances must be approved by issuance of Allowance Expenditure Authorization (AEA) by Architect prior to modification of the schedule of values. The AEA may be comprised of a single executed Change Proposal, an accumulation of executed Change Proposals, or other similar documentation in the form allowed by the Architect in accordance with Document CB, Supplementary Conditions of the Contract.

E. Contractor may propose changes which, in his opinion, will provide value to the Owner, by submitting a request for change to Architect, describing proposed change and its full effect on the Work. Include a statement describing reason for the change, and effect on Contract Sum/Price and Contract Time with full documentation and a statement describing effect on Work by separate or other Contractors. If accepted by Architect and approved by Owner, submit a Change Order in accordance with the requirements of this Section. This request will not be considered a substitution except as defined by Section 01 25 13, Product Substitution Procedures. Owner is not obligated to accept this request.

F. Construction Change Directive: Architect/Engineer may issue directive, on AIA Form G713 Construction Change Directive or other similar document in the form issued by the

Architect, and signed by Owner, instructing Contractor to proceed with change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute change.

G. Document each quotation for change in cost or time with sufficient data to allow evaluation of quotation.

H. Change Order Forms: AIA G701 - Change Order.

I. Execution of Change Orders: The Architect will prepare and sign the Change Order, the contractor shall sign the Change Order indicating acceptance of the change, and then the Owner will execute the Change Order.

J. Correlation Of Contractor Submittals:
1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
2. Promptly revise progress schedules to reflect change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
3. Promptly enter changes in Project Record Documents.

1.4 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements at no additional cost to the Owner.

B. If, in the opinion of the Architect/Engineer or Owner, it is not practical to remove and replace the Work, the Architect will direct appropriate remedy or adjust payment.

C. The defective Work may remain, but sum/price will be adjusted to new sum/price at the discretion of Architect or Owner.

D. Individual specification sections may modify these options or may identify specific formula or percentage sum/price reduction.

E. Authority of Architect/Engineer, or other appropriate agent identified to perform assessment by the Architect/Engineer or Owner, to assess defects and identify payment adjustments, is final.

F. Non-Payment For Rejected Products: In addition to replacement of rejected Work, payment will not be made for rejected products for any of the following:
1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from transporting vehicle.
4. Products placed beyond lines and levels of required Work.
5. Products remaining on hand after completion of the Work.
6. Loading, hauling, and disposing of rejected products.

PART 2 - PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION

SECTION 01 29 00

PAYMENT PROCEDURES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Procedures for submitting Applications for Payment.

1.2 GENERAL

A. Coordinate requirements of this Section with the requirements of the General and Supplementary Conditions of the Contract concerning payment procedures.

1.3 SCHEDULE OF VALUES

A. Submit printed schedule on AIA Form G703 - Continuation Sheet for G702 in accordance with Section 01 29 73, Schedule of Values. Contractor's standard form or electronic media printout will be considered but must be approved by the Owner.

1.4 APPLICATIONS FOR PAYMENT

A. Submit four (4) notarized originals of each application on AIA Form G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet for G702 or other similar form approved by the Owner.

B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.

C. Submit updated construction schedule with each Application for Payment.

D. Payment Period: Submit at intervals stipulated in the Agreement in accordance with Document 00 73 00, Supplementary Conditions of the Contract.

E. Only materials stored on the project site shall be paid for unless the materials are stored in a bonded warehouse.

F. Substantiating Data: When Architect/Engineer requires substantiating information, submit data justifying dollar amounts in question. Items which may be requested by the Architect or Owner to substantiate costs include, but are not limited to the following:
   1. Current Record Documents as specified in Section 01 77 00, Closeout Procedures, for review by Owner which will be returned to Contractor.
   2. Labor time sheets, purchase orders, or similar documentation.
   3. Affidavits attesting to off-site stored products.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF SECTION

SECTION 01 29 73

SCHEDULE OF VALUES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide a detailed breakdown of the agreed Contract Sum showing values allocated to each of the various parts of the work, as specified herein and in other provisions of the Contract Documents.

B. Coordinate requirements of this Section with the requirements of the General and Supplementary Conditions of the Contract concerning Schedule of Values.

1.2 QUALITY ASSURANCE

A. Use required means to assure arithmetical accuracy of the sums described.

B. When so required by the Owner, provide copies of the subcontracts or other data acceptable to the Owner, substantiating the sums described.

1.3 SUBMITTALS

A. Prior to the first Application for Payment, submit a proposed schedule of values to the Owner, as outlined below:
   1. Meet with the Owner and determine additional data, if any, required to be submitted.
   2. Secure the Owner's approval of the schedule of values prior to submitting first Application for Payment.

1.4 SCHEDULE OF VALUES

A. The Schedule of Values shall be broken down into item costs for each specification section as a minimum. After review by the Owner, the Schedule of Values shall be broken down into further items as required. (See following list and refer to the enclosed sample.). In addition, total each Specification Division separately.

B. Schedule of Values - Items in addition to Specification Sections.
   1. Mobilization
   2. Clean Up
   3. Building Permit
   4. Bonds, Insurance
   5. Misc. Mechanical Accessories
   6. Demolition
   7. Rough-In Labor - (Electrical)
   8. Rough-In Material - (Electrical)
   9. Finish Labor - (Electrical)
   10. Finish Material - (Electrical)
   11. Allowances (listed separately)
   12. Record drawings and close-out documents
   13. Submittals listed separately per mechanical, electrical and plumbing
   14. Roof warranty as a line item
   15. Donated items individually itemized at $0.00 (zero dollars).

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 SCHEDULE OF VALUES

A. Refer to following sample.

END OF SECTION

SCHEDULE OF VALUES - SAMPLE

Item No.	Description of Work	Scheduled Value	Work Completed		Stored Materials	Total Completed	%	Balance To Finish	Retainage
			Previous App.	This App.					
	Div. 1 - General Reqs.								
	Site Work General Conditions								
	Suoervision								
	Mobilization								
	Bonds & Insurance								
	Permits								
	Contractor's Fee								
	Close-Out Documents								
	Div. 1 - Total								
	Div. 2 - Existing Conditions								
	Demolition (As applicable)								
	Erosion Control								
	Div. 2 - Total								
	Div. 3 - Concrete								
	Drill Piers								
	Caps & Beams								
	Slab on Grade								
	Cooling Tower Basin								
	Misc Bldg Conc								
	Floor Sealer								
	Rebar Matl								
	Rebar Labor								
	Lt.Wt.Insul Fill - Materials								
	Lt.Wt.Insul Fill - Labor								
	Close-Out Documents								
	Div. 3 - Total								
	Div 4 - Masonry								
	Brickwork - Labor								
	Brickwork - Matls								
	Concrete Masonry - Labor								
	Concrete Masonry - Materials								
	Str. Glazed Tile-Labor								
	Str. Glazed Tile-Materials								
	Close-Out Documents								
	Div. 4 - Total								
	Div 5 - Metals								
	Structural Steel - Labor								
	Structural Steel - Materials								
	Alternating Stairs								
	Misc. Steel - Materials								
	Steel Joists - Materials								
	Lt. Gauge Steel Framing-Labor								
	Lt. Gauge Steel Framing-Matls								
	Metal Decking - Labor								
	Expansion Joint Covers								
	Metal Decking - Matls								
	Close-Out Documents								
	Div. 5 - Total								

SCHEDULE OF VALUES - SAMPLE

Item No.	Description of Work	Scheduled Value	Work Completed		Stored Materials	Total Completed	%	Balance To Finish	Retainage
			Previous App.	This App.					
	Div. 6 - Wood & Plastics								
	Rough Carpentry - Labor								
	Rough Carpentry - Materials								
	Millwork - Labor								
	Millwork - Materials								
	Close-Out Documents								
	Div. 6 - Total								
	Div. 7 - Thermal and Moisture Protection								
	Waterpfng / Dampprfng-Matls								
	Waterpfng / Dampprfng-Labor								
	Building Insulation - Labor								
	Building Insulation - Materials								
	Fireproofing - Labor								
	Fireproofing - Materials								
	Metal Roof - Labor								
	Metal Roof - Materials								
	Metal Roof Guarantee								
	Built-up Roofing-Labor								
	Built-up Roofing-Materials								
	Built-up Roofing Guarantee								
	Roof Accessories								
	Building Sheet Metal - Labor								
	Building Sheet Metal - Matls								
	Bldg. Sheet Metal Guarantee								
	Roof Curbs								
	Roof Hatches								
	Sealants								
	Close-Out Documents								
	Div. 7 - Total								
	Div. 8 - Doors and Frames								
	Finish Carpentry/Door - Labor								
	Finish Hardware - Matls								
	Thresholds & Seals - Matls+B66								
	Hollow Metal Doors & Frames - Matls								
	Plastic Faced Doors-Matls								
	Overhead Doors & Grilles-Labor								
	Overhead Doors & Grilles - Matls								
	Alum. Entrances & Store-fronts - Labor								
	Alum. Entrances & Store-fronts - Matls								
	Alum. Windows - Labor								
	Alum Windows - Matls								
	Glass & Glazing-Labor								
	Glass & Glazing-Matls								
	Close-Out Documents								

SCHEDULE OF VALUES - SAMPLE

Item No.	Description of Work	Scheduled Value	Work Completed		Stored Materials	Total Completed	%	Balance To Finish	Retainage
			Previous App.	This App.					
	Div. 8 - Total								
	Div. 9 - Finishes								
	Lath & Plaster-Labor								
	Lath & Plaster-Matls								
	Gypsum Wallboard Systems - Labor								
	Gypsum Wallboard Systems - Matls								
	Ceramic Tile - Labor								
	Ceramic Tile - Matls								
	Quarry Tile - Labor								
	Quarry Tile - Matls								
	Terrazzo-Labor								
	Terrazzo-Matls								
	Acoustic Clg. - Labor								
	Acoustic Clg. - Matls								
	Acoustic Wall Panels								
	Resilient Flooring - Labor								
	Resilient Flooring - Matls								
	Carpet - Labor								
	Carpet - Matls								
	Athletic Flooring - Materials								
	Athletic Flooring - Labor								
	Floor Sealer								
	Painting - Labor								
	Painting - Mtls								
	Close-Out Documents								
	Div. 9 - Total								
	Div. 10 - Specialties								
	Visual Display Boards & Tackboards - Materials								
	Visual Display Boards & Tackboards - Labor								
	Toilet Partitions - Labor								
	Toilet Partitions - Matls								
	Louvers								
	Aluminum Flag Pole								
	Graphics								
	Lockers								
	Cubicle Curtains & Track								
	Fire Extinguisher Cabinets								
	Demountable Partitions-Labor								
	Demountable Partitions-Matls								
	Shelving								
	Toilet Room Accessories-Matls								
	Toilet Room Accessories-Lbr								
	Close-Out Documents								
	Div. 10 - Total								
	Div. 11 - Equipment								

SCHEDULE OF VALUES - SAMPLE

Item No.	Description of Work	Scheduled Value	Work Completed		Stored Materials	Total Completed	%	Balance To Finish	Retainage
			Previous App.	This App.					
	Stage Curtains Misc. Appliances Food Service Eqpt-Labor Food Service Eqpt-Matls Close-Out Documents								
	Div. 11 - Total								
	Div. 12 - Furnishings Horizontal Blinds Projection Screens Casework - Labor Casework - Matls Science Casework - Labor Science Casework - Matls Close-Out Documents								
	Div. 12 - Total								
	Div. 13 - Specialties Stage Curtains and Draperies Music Instrument Storage Bleachers Press Box Pre-eng. Metal Bldg. Stadium Seating Close-Out Documents								
	Div. 13 - Total								
	Div. 14 - Conveying Systems Platform Lifts Elevators Close-Out Documents								
	Div. 14 - Total								
	Div. 21, 22 - Plumbing Shop Drawings As-Builts/Close-Out/ O&M Manuals Sanitary Underground - Labor Sanitary Underground - Matls Storm Underground - Labor Storm Underground - Matls Domestic Water - Labor Domestic Water - Matls Plumbing Insulation - Matls Plumbing Insulation - Labor Gas Piping - Matls Gas Piping - Labor Grease Trap								

SCHEDULE OF VALUES - SAMPLE

Item No.	Description of Work	Scheduled Value	Work Completed		Stored Materials	Total Completed	%	Balance To Finish	Retainage
			Previous App.	This App.					
	Plumbing Fixtures - Matls								
	Plumbing Fixtures - Labor								
	Coordination Drawings								
	Close-Out Documents								
	Div. 21, 22 Plumbing - Total								
	Div. 23 - Mechanical								
	Shop Drawings								
	As-Builts/Close-Out/ O&M Manuals								
	Chillers - Matls								
	Chillers - Labor								
	Cooling Towers - Matls								
	Cooling Towers - Labor								
	Boilers - Matls								
	Boilers - Labor								
	AHU's - Matls								
	AHU's - Labor								
	Fans - Matls								
	Fans - Labor								
	Grilles - Matls								
	Grilles - Labor								
	Ductwork - Matls								
	Ductwork - Labor								
	Pumps - Mtls								
	Pumps - Labor								
	Water Treatment - Labor								
	Water Treatment - Matls								
	Isolation - Labor								
	Isolation - Matls								
	Pipe Flex - Matls								
	Pipe Flex - Labor								
	Connections								
	Sheet Metal - Matls								
	Sheet Metal - Labor								
	Duct Insulation - Matls								
	Duct Insulation - Labor								
	Pipe Insulation - Matls								
	Pipe Insulation - Labor								
	VAV Boxes - Materials								
	VAV Boxes - Labor								
	Refrigerant Monitor - Matls								
	Refrigerant Monitor - Labor								
	Unit Heaters - Materials								
	Unit Heaters - Labor								
	Startup								
	Controls - Matls								
	Control - Labor								
	Engineer / Submittals								
	Modules / End Devices								
	Low Voltage Wiring								
	Startup								

SCHEDULE OF VALUES - SAMPLE

Item No.	Description of Work	Scheduled Value	Work Completed		Stored Materials	Total Completed	%	Balance To Finish	Retainage
			Previous App.	This App.					
	Close-Out Documents								
	Fire Sprinkler								
	Engineer / Submittals								
	Piping - Materials								
	Piping - Labor								
	Equipment - Materials								
	Equipment - Labor								
	Trimout - Materials								
	Trimout - Labor								
	Pipe, Valves, Fittings - Labor								
	Pipe, Valves, Fittings - Matls								
	Misc. - Matls								
	Insulation - Matls								
	Insulation - Labor								
	Sanitary Above Slab-Labor								
	Sanitary Above Slab-Matls								
	Storm Above Slab - Labor								
	Storm Above Slab - Matls								
	Gas - Labor								
	Gas - Matls								
	Fixtures - Labor								
	Fixtures - Matls								
	Permits								
	Coordination Drawings								
	Close-Out Documents								
	Div. 23 Mechanical - Total								
	Div. 26 - Electrical								
	Mobilization+B220								
	Shop Drawings								
	As-Builts/Close-Out/ O&M Manuals								
	Underground								
	Conduit - Labor								
	Conduit - Matl								
	Wire - Labor								
	Wire - Matls								
	Feeder Wire - Labor								
	Feeder Wire - Matls								
	Switches/Recpt.								
	Switchgear - Labor								
	Switchgear - Matls								
	Temporary - Materials								
	Temporary - Labor								
	Gas Generator - Materials								
	Gas Generator - Labor								
	Fixtures - Labor								
	Fixtures - Matls								
	Communications - Labor								
	Communications - Matls								
	Fire Alarm - Labor								
	Fire Alarm - Matls								

SCHEDULE OF VALUES - SAMPLE

Item No.	Description of Work	Scheduled Value	Work Completed		Stored Materials	Total Completed	%	Balance To Finish	Retainage
			Previous App.	This App.					
	Security - Labor								
	Security - Matls								
	Low Voltage Ltng Sys-Matls								
	Low Voltage Ltng Sys-Labor								
	Voice System - Materials								
	Voice System - Labor								
	Video System - Materials								
	Video System - Labor								
	Data System - Materials								
	Data System - Labor								
	Master Clock - Materials								
	Master Clock - Labor+B277								
	Coordination Drawings								
	Close-Out Documents								
	Div. 26 - Total								
	Divs. 31, 32 and 33 - Earthwork, Exterior Improvments and Utilities								
	Site Clearing & Grubbing								
	Building Pad - Materials								
	Building Pad - Labor								
	Paving Subgrade								
	Signage / Striping								
	Bike Racks								
	Landscaping - Materials								
	Landscaping - Labor								
	Hydro Mulch - Materials								
	Hydro Mulch - Labor								
	Irrigation - Materials								
	Irrigation - Labor								
	Earthwork								
	Finish Grading								
	Stabilization - Materials								
	Stabilization - Labor								
	Site Drainage - Materials								
	Site Drainage - Labor								
	Chain Link Fence-Materials								
	Chain Link Fence-Labor								
	Paving - Labor								
	Paving - Materials								
	Sidewalks								
	Close-Out Documents								
	Div. 31, 32 and 33 - Total								
	General Conditions								
	Mobilization								
	Temp. Facilities								
	Final Cleaning								
	Record Documents/Close-out/ O&M Manuals								
	Supervision								
	Permits								
	Bonds								

SCHEDULE OF VALUES - SAMPLE

Item No.	Description of Work	Scheduled Value	Work Completed		Stored Materials	Total Completed	%	Balance To Finish	Retainage
			Previous App.	This App.					
	Insurance Allowances Alternates (list) Change Orders A. PR# B. PR# C. PR#								

END OF SECTION

SECTION 01 31 13

PROJECT COORDINATION

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 REQUIREMENTS

A. General: notify the Architect whenever there is need of clarification or interpretation of the Contract Documents prior to commencement of work.

B. Commencement of work without Architect's prior notification means Contractor's acceptance of responsibility.

C. Commencement of work without Architect's prior notification implies Contractor's understanding of conditions, assemblies, methods, or procedures.

D. The project superintendent shall notify the Owner on an ongoing basis of ongoing work.

1.2 PRE-INSTALLATION CONFERENCE

A. General: Notify the Architect 48 hours in advance of certain stages of construction, and, as required by the Architect, organize a pre-installation meeting with each trade individually prior to commencement of their portion of the Work. At a minimum, representatives of the Architect, the General Contractor's project superintendent, and the Sub-contractor's Foreman and Project Manager shall be present at each meeting. The Engineer shall be notified as applicable.

B. As indicated in each specific section of this Project Manual, or as required by the Architect, these stages generally include, but are not necessarily limited to the following:
1. Division 2 – Selective Demolition
2. Division 6 - Finish Carpentry and Millwork
3. Division 8 – Door Repair.
4. 08 71 00 - Installation of finish hardware
5. 09 65 19 - Installation of resilient flooring and base.
6. 09 90 00 - Painting and staining (each coat).
7. Division 12 - Installation of laboratory casework.
8. Divisions 22, 23 and 26 - Completion of roughing-in of plumbing, heating, air conditioning and electrical work (prior to concealment).
9. Division 22 - Installation of plumbing fixtures.
10. Division 26 - Installation of all electrical fixtures.
11. Divisions 22, 23 and 26 - Any and all testing specified for equipment, mechanical, electrical and plumbing systems.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 PRE-CONSTRUCTION CONFERENCE

A. The Contractor shall contact Architect at least ten (10) days prior to commencing construction in order for Architect to schedule a pre-construction meeting with Contractor, Architect, and Owner. This meeting must occur prior to commencement of any construction.

3.2 CONFERENCES AND MEETINGS

A. Refer to Section 01 31 19, Project Meetings for requirements pertaining to Pre-construction Conference, Progress Meetings, and Pre-installation Conferences.

END OF SECTION

SECTION 01 31 19

PROJECT MEETINGS

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDE

A. The Architect's:
1. Scheduling of each meeting (pre-construction meeting, periodic project meetings, and specialty called meetings throughout the progress of the Work).
2. Preparation of agenda for meetings.
3. Presiding at minutes, including all significant proceedings and decisions.
4. Recording, reproducing, and distributing copies of meeting minutes within two (2) working days, excluding weekends and holidays, after each meeting to:
   a. All participants in the meeting.
   b. All parties affected by decisions made at the meeting.
5. Providing status report of allowance funds.

B. The Contractor's:
1. Making physical arrangement for meetings.
2. Participation in all meetings and conferences.
3. Scheduling attendance of Job Superintendent, Project Coordinator, and other parties affecting or affected by decisions made at meetings and conferences as their interests require.
4. Scheduling Pre-installation conferences.
5. Scheduling Pre-Closeout Meeting
6. Providing updated schedules.
7. Providing status reports/logs of CPRs, MCs, and shop drawings/submittals.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 PRE-CONSTRUCTION CONFERENCE

A. Contractor shall contact Architect at least ten (10) days prior to commencing construction in order for Architect to schedule a pre-construction meeting with Contractor, Architect, and Owner. This meeting must occur prior to commencement of any construction.

B. Architect will:
1. Administer pre-construction conference for the establishment of communication methods, procedures and Owner requirements.
2. Administer site mobilization conference for clarification of Owner and Contractor.

C. Location: At Project site as designated by the Architect.

D. Attendance:
1. Contractor or Contractor's Representative
2. Job Superintendent
3. Project Coordinator (Manager)
4. Owner or Owner's Representative

5. Major subcontractors
6. Major suppliers
7. Architect's Representative
8. Architect's Field Representative
9. Consultants as needed
10. Others as appropriate

D. Meeting Agenda, may include, but is not limited to:
1. Discussion on major subcontracts and suppliers and projected construction schedules.
2. Critical work sequencing.
3. Major equipment deliveries and priorities. Discussion of long lead time items.
4. Project coordination and designation of responsible personnel.
5. Procedures and processing of field decisions, proposal requests, submittals, minor changes, change orders and applications for payment.
6. Method of distribution of Contract Documents.
7. Procedures for maintaining Record Documents.
8. Use of premises, office work and storage areas, on-site parking, and Owner's requirements.
9. Construction facilities and temporary utilities.
10. Housekeeping procedures.

3.2 PROGRESS MEETINGS

A. Architect will:
1. Schedule project meetings throughout progress of the work at weekly intervals, and specially called meetings.
2. Set agenda and administer said meetings.
3. Preside at meetings.
4. Record meeting minutes, including all significant proceedings and decisions.
5. Reproduce and distribute copies of meeting minutes within two (2) working days, excluding weekends and holidays, after each meeting to:
   a. All participants in the meeting.
   b. All parties affected by decisions made at the meeting.

B. Contractor shall:
1. Make physical arrangements for meetings.

C. Attendance:
1. Contractor or Contractor's Representative
2. Job Superintendent
3. Project Coordinator (Manager)
4. Owner or Owner's Representative
5. Major subcontractors
6. Major suppliers
7. Architect's Field Representative
8. Consultants as needed
9. Others as appropriate

D. Meeting Agenda, may include, but is not limited to:
1. Review and approval of minutes of previous meeting.
2. Review of Work progress since previous meeting.
3. Field observations, problems, and conflicts.
4. Review of off-site fabrication and delivery schedules.
5. Corrective measures and procedures to regain projected schedule.
6. Revisions to Construction Schedule.

7. Plan progress and schedule during succeeding work period.
8. Coordination of schedules.
9. Review submittal schedules and expedite as required.
10. Maintenance of quality standards.
11. Allowance balances.
12. Review of proposed changes and substitutions for:
    a. Effect on Construction Schedule and on completion date.
    b. Effect on other contracts of the Project.
13. Status of Allowance Expenditure Authorizations (AEAs).
14. Status of Change Proposal Requests (CPRs).
15. Status of Minor Changes (MCs).
16. Status of submittals, review of submittal log.
17. Other items and critical issues affecting Work.

3.3 PRE-INSTALLATION CONFERENCES

A. In accordance with the requirements of Section 01 11 00, Notification of Architect Requirements, the Contractor will convene pre-installation conferences when required by individual specification Sections or as required by the Architect, prior to the Contractor commencing Work of the Section.

B. Attendance, optional:
1. General Contractor or Contractor's Representative
2. Project Coordinator (Manager)
3. Owner or Owner's Representative
4. Architect's Project Manager (Project Executive)

C. Attendance, required:
1. Project Superintendent
2. Architect's Field Representative
3. Sub-contractor's Project Manager
4. Sub-contractor's Foreman
5. Engineer's Representative, as needed.
6. Manufacturer's Representative, as needed.
7. Governing Agency Official, as required
8. Inspection Agency Representative, as required.
9. Others affecting or affected by Work.

D. Meeting Agenda, may include, but is not limited to:
1. Review of conditions of installation.
2. Preparation and installation procedures.
3. Coordination with related work
4. Review of the contract document requirements.
5. Review of code enforcement or testing requirements.
6. Questions related to work required.

3.4 PRE-CLOSEOUT MEETING

A. In accordance with the requirements of Section 01 77 00, Closeout Procedures, the Contractor will convene a pre-closeout meeting when he considers the Work or designated portion of the Work is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the work for its intended use.

B. Attendance, required:
1. Owner or Owner's Representative
2. Project Coordinator (Manager)

3. General Contractor or Contractor's Representative
4. Project Superintendent
5. Architect's Project Manager (Project Executive)
6. Architect's Field Representative
7. Engineer's Representative, as needed.

C. Meeting Agenda, may include, but is not limited to:
1. Review of the contract document requirements for Substantial Completion and Project Closeout
2. Review of Work which remains to be completed or corrected.
3. Closeout Document review schedule and log
4. Review of closeout procedures including, but not limited to Record Drawings, Warrantees, Operation and Maintenance Manuals, and Owner Demonstrations and Start-up.
5. Review of code enforcement or testing requirements.
6. Questions related to work required.

END OF SECTION

SECTION 01 32 16

CONSTRUCTION PROGRESS SCHEDULE

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SUBMITTALS

A. Schedules:
   1. Preliminary Analysis: Within 10 (ten) days after receipt of Award of Contract, submit a preliminary construction schedule for review by Owner and Architect.
   2. Construction Schedule: Within 14 (fourteen) days after receipt of Notice to Proceed, submit one (1) electronic file and four (4) prints of the approved construction schedule.
   3. Upon approval by the Architect and Owner, Contractor shall print out a color copy (large format) of the schedule and display on the wall of the contractor's office. A marking device shall be provided to track the overall schedule at a glance.

1.2 RELIANCE UPON SCHEDULE

A. The construction schedule as approved by the Architect will be an integral part of the contract and will establish conditions for various activities and phases of constructions.

1.3 CONSTRUCTION SCHEDULE

A. Diagram: Graphically show the order of all activities necessary to complete the work and the sequence in which each activity is to be accomplished.

B. Activities shown on the diagram shall include but not necessarily be limited to:
   1. Project mobilization
   2. Submittals and approvals of shop drawings and samples
   3. Phasing of construction
   4. Procurement of equipment and critical materials
   5. Fabrication and installation of special material and equipment
   6. Final clean-up
   7. Final inspection and testing

C. The construction schedule shall be updated and submitted with each Application for Payment.

1.4 CONSTRUCTION SCHEDULE LIMITATIONS

A. Work performed under this Contract shall be done in accordance with the following paragraphs:
   1. Upon Notice to Proceed, shop drawings and mobilization may begin with an anticipated date of November 28th, 2016 for demolition and/or construction to begin..
   2. The Owner has a critical need for the work to occur during the college's winter break and be Substantially Complete by January 2, 2017.
   3. Under the Base Proposal only, the successful Offeror will be 1) entitled to certain extensions of time and 2) subject to liquidated damages for work not completed beyond the agreed date which the Contractor shall require for Substantial Completion of the work included in this contract. Refer to Supplementary Conditions for additional requirements and liquidated damages.

4. Failure to complete and close-out project after substantial completion may result in liquidated damages. Refer to Supplementary Conditions for additional requirements and liquidated damages.
5. Certificate of Substantial Completion will be issued for any of the above mentioned areas of work which are complete prior to the completion of the entire project.
6. The Owner may at his discretion approve changes recommended by the successful Offeror to the above-mentioned schedule provided that the Owner's use of newly completed areas are not disrupted.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SUBMITTAL PROCEDURES

A. Transmit to the Architect, Engineer, and Owner (Electronic version only) each item indicated in individual specification sections with approved form identifying:
   1. Date of submission and dates of any previous submissions.
   2. Project title and number
   3. Contract identification
   4. Names of Contractor, Supplier, Manufacturer
   5. Pertinent drawing sheet and detail number, and specification section number, as appropriate
   6. Deviations from Contract Documents.

B. Contractor shall be responsible for initial review prior to submittal to Architect/Engineer to verify adequacy and conformance to contract requirements. Lack of review by Contractor may be grounds for rejection.

C. Apply Contractor's stamp, signed, to each item submitted, certifying that review and verification of products, field dimensions, adjacent construction work and coordination of information is in accordance with the requirements of the work and contract documents.

D. Transmit each item in accordance with approved schedule, and in such sequence as to cause no delay in the work or in the work of any other Contractor. Allow minimum of ten (10) days for adequate Architect/Engineer review of each submittal. Time may vary according to scope and complexity of item under review. Allow adequate time in schedule for revisions and resubmittal as deemed necessary.

E. Submit one (1) opaque print or copy of the submittal to the Architect plus one (1) electronic original. Transmit the printed copy of consultant and engineering submittals directly to respective consultants with a transmittal and the electronic original to the Architect. The Architect and Consultant will make up the printed copy and return to the Contractor upon completion of review. It will be the Contractors responsibility to scan and distribute the necessary quantity of copies of the reviewed submittal to all concerned parties.

F. Submit each item according to individual specification sections and identified by Division, Section, and individual submittal number. Maintain log according to each Division.

G. Revise and resubmit submittal as required; identify all changes made since previous submittal.
   1. Make any corrections or changes in the submittals required by the Architect/Engineer and resubmit until approved.
   2. Submit new submittal as required for initial submittal.

1.2 PROPOSED PRODUCTS LIST

A. Within 30 days after date of Notice to Proceed, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.3 PRODUCT DATA

A. Submit to Architect for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Submit the number of copies of product data and samples which the Contractor and his subcontractors need for their use PLUS two (2) additional sets for the Architect, one (1) additional set for the Owner and one (1) additional set for each of the Architect's consultants involved with the particular Section of Work.

C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project

1.4 ELECTRONIC SUBMITTALS

A. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
   1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
   2. Name file with submittal number or other unique identifier, including revision identifier.
   3. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
   4. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
   5. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner**,** containing the following information:
      a. Project name.
      b. Date.
      c. Name and address of Architect.
      d. Name of Construction Manager.
      e. Name of Contractor.
      f. Name of firm or entity that prepared submittal.
      g. Names of subcontractor, manufacturer, and supplier.
      h. Category and type of submittal.
      i. Submittal purpose and description.
      j. Specification Section number and title.
      k. Specification paragraph number or drawing designation and generic name for each of multiple items.
      l. Drawing number and detail references, as appropriate.
      m. Location(s) where product is to be installed, as appropriate.
      n. Related physical samples submitted directly.
      o. Indication of full or partial submittal.
      p. Transmittal number.
      q. Submittal and transmittal distribution record.
      r. Other necessary identification.
      s. Remarks.

B. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
   1. Note date and content of previous submittal.
   2. Note date and content of revision in label or title block and clearly indicate extent of revision.

C. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's and Contractor's action stamp.

1.5 MSDS SHEETS

A. The Texas Asbestos Health Protection Rules (Title 25. Health Services, Part I. Texas Department of Health Chapter 295 - Occupational Health, Subchapter C - Texas Asbestos Health Protection) were approved and became effective on October 20, 1992, and amended March 27, 2003. The Rules established the procedures and means to implement the provisions of Senate Bill 1341 and House Bill 79.

B. Pursuant to the above referenced Rules, submit MSDS Sheets showing that materials used in the Project, contain 1.0 percent or less asbestos. This requirement pertains to every material in every Section of the Specifications, as applicable to the Project, whether written therein, or not. Submit MSDS Sheets for materials, including, but not limited to the following, as applicable to the Project.
   1. Surfacing Materials:
      a. acoustical plaster;
      b. decorative plaster/stucco;
      c. textured paint/coating;
      d. spray applied insulation;
      e. blown-in insulation
      f. fire proofing insulation;
      g. joint compound; and
      h. spackling compounds
   2. Thermal System Insulation:
      a. taping compounds (thermal)
      b. HVAC duct insulation;
      c. boiler insulation;
      d. breaching insulation;
      e. pipe insulation; and
      f. thermal paper products
   3. Miscellaneous Material:
      a. cement wallboard/siding;
      b. asphalt/vinyl floor tile
      c. vinyl sheet flooring/vinyl wall coverings;
      d. floor backing;
      e. construction mastic;
      f. ceiling tiles/lay-in ceiling panels;
      g. packing materials;
      h. high temperature gaskets;
      i. laboratory hoods/table tops
      j. fire blankets/curtains;
      k. elevator equipment panels;
      l. elevator brake shoes;
      m. ductwork flexible fabric connections;
      n. cooling towers;
      o. heating and electrical ducts;

p. electrical panel partitions;
q. electrical cloth/electrical wiring insulation;
r. chalkboards;
s. roofing shingles/tiles;
t. roofing felt;
u. base flashing;
v. fire doors;
w. caulking/putties;
x. adhesives/mastics; and
y. wallboard

1.6 SHOP DRAWINGS

A. Submit to Architect/Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

C. All dimensions indicated on the drawings are based on the specific models and manufacturers of products, equipment, fixtures and miscellaneous items specified. If the Contractor uses an approved product by another listed manufacturer which is different than the specific model and manufacturer listed in these specifications, then the Contractor shall be solely responsible for the coordination of any dimensional changes required, including structural, relocation of walls, equipment, fixtures, ceilings and miscellaneous items. When dimensional changes are required in these situations, the Contractor shall submit a proposed modification drawing to the Architect for approval prior to proceeding with the work. All causes and effects of the dimensional change shall be indicated on the Contractor’s drawing submittal.

1.7 SAMPLES

A. Submit for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Submit for aesthetic, color, or finish selection. Submit full range of manufacture's standard colors, textures, and patterns for Architect's selection.

C. Submit samples to illustrate functional characteristics of the Product, with integral parts and attachment devices. Coordinate submittal of different categories for interfacing work.

D. Submit the number specified in respective Specification Section; minimum of two (2), of which one (1) will be retained by Architect.

E. Reviewed samples which may be used in the Work are indicated in individual specification sections.

F. Samples will not be used for testing purposes unless specifically stated in specification section.

G. Within 60 days after date of Notice to Proceed, submit list of manufacturers proposed for use along with all samples and color selections. Submittal to contain all project required selections for the Architect and Owner to approve, including but not limited to the following: paint, laminates, carpet, porcelain tile, vinyl tile, etc. Partial color selection submittals will not be accepted.

1.8 DESIGN DATA

A. When required, submit for Architect/Engineer's knowledge as contract administrator or for Owner.

B. Submit design data for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.10 CERTIFICATES

A. When specified in individual specification sections, submit certification by manufacturer, installation/application subcontractor, or Contractor to Architect, in quantities specified.

B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect and Owner.

D. Submit required certificates in duplicate.

1.11 GUARANTEES

A. When specified in individual specification sections, submit warranties by manufacturer, installation/application subcontractor, fabricator, or Contractor to Architect, in quantities specified.

B. Submit warranties in accordance with Section 01 77 00, Closeout Procedures.

1.12 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Architect for delivery to Owner in quantities specified.

B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

C. Submit required instructions in duplicate.

1.13 MANUFACTURER'S FIELD REPORTS

A. Submit reports for Architect/Engineer's benefit as contract administrator or for Owner.

B. Submit report in quantity specified or required within ten (10) days of observation to Architect for information. Architect will determine whether corrective action is required.

C. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.14 ERECTION DRAWINGS

A. When required, submit drawings for Architect/Engineer's benefit or for Owner.

B. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

C. Data indicating inappropriate or unacceptable Work may be subject to action by Architect/Engineer or Owner. Architect will determine whether corrective action is required.

1.15 CONSTRUCTION PHOTOGRAPHS

A. Provide photographs monthly of site and construction throughout progress of Work produced by an experienced photographer, acceptable to Architect/Engineer.

B. Photographs: digital; sent to Architect via email, or provide on non-rewritable compact disk. Along with Application for Payment, include one (1) reproducible copy of contact sheet of all photographs taken during that period indicating Work completed and identified as stated below.

C. Photograph project conditions five (5) days maximum prior to submitting indicating relative progress of the Work. Do not photograph conditions previously photographed if no work has proceeded. As able, take photographs from same position indicating same view in successive installments.

D. Take photographs as evidence of existing project conditions as follows:
1. Site: Take four (4) site aerial photographs at project corners
2. Interior views: Take four (4) minimum interior photographs of each space under construction from differing directions or as required.
3. Exterior views: Take two (2) photographs of each elevation.
4. Details: Take as required to document concealed conditions, including, but not limited to, underground construction, utility penetrations and installation, steel erection, concrete and masonry reinforcing, waterproofing and flashing, and roofing installation.
5. Cavity wall: Provide photographic evidence that cavity wall was maintained clean and free of debris and excess mortar.

E. Identify each photograph with name of Project, room or view, and date.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 35 16

ALTERATION PROJECT PROCEDURES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. This Section contains general provisions and requirements pertaining to all remodeling, removal and relocation of Work in the existing building and becomes a part of each Section and Division performing remodeling, removal and relocation Work for this Project with the same force and effect as if written in full therein.

B. Take all necessary precautions to keep trespassers out of the Work areas. Secure Work areas from entry when Work is not in progress.

C. Perform all alterations, remodeling, demolition, removal and relocation of Work in strict accordance with Owner's instructions and applicable Federal, State and local health and safety standards, codes and ordinances. Where conflicts occur, the more restrictive requirement shall govern.

1.2 RELATED WORK

A. Section 02 41 19 - Selective Demolition

1.3 EXISTING CONDITIONS

A. Obvious existing conditions, installations and obstructions affecting the Work shall be taken into consideration as necessary Work to be done, the same as though they were completely shown or described.

B. Items of existing construction indicated to remain upon completion of the Contract, but which require removal to complete the Work, shall be carefully removed and replaced as required. The replaced Work shall match its condition at the start of the Work unless otherwise required.

C. Visit the site to determine by inspection all existing conditions, including access to the site, the nature of structures, objects and materials to be encountered, and all other facts concerning or affecting the Work. Information on the Drawings showing existing conditions does not constitute a guarantee that other items may not be found or encountered.

D. Utilities: Do not interrupt existing utilities serving occupied or used facilities, except when authorized by the Architect in writing two (2) weeks in advance. Provide temporary services during interruptions to existing utilities.

PART 2 - PRODUCTS

2.1 SALVAGED MATERIALS

A. The Owner reserves the right of first refusal on all salvage items. Remove remaining items from the site as Work progresses. Storage or sale of items on site is not permitted. Burning or burying of removed materials on site is not permitted.

B. Store salvaged items in a dry, secure place on site.

C. Salvaged items not required for use in repair of existing Work shall remain the property of the Owner.

D. Do not incorporate salvaged or used material in new construction except with permission of the Architect.

2.2 PRODUCTS FOR PATCHING, EXTENDING AND MATCHING

A. Contract Documents do not define products or standards of workmanship present in existing construction. Determine products by inspection and by use of the existing. Provide same or similar quality products or types of construction as that in existing structure when needed to patch or extend existing Work.

B. If reasonably matching products are not obtainable, improve appearance by minor relocating of some existing products and grouping new ones in some pattern arranged by the Architect. Do not replace products scheduled for retaining because matching ones are not obtainable, except as directed by Change Order.

PART 3 - EXECUTION

3.1 PROTECTION OF WORK TO REMAIN

A. Protect existing Work from damage. Use barricades, tarpaulins, temporary walls, plywood, planking, masking, or other suitable means and methods as approved by the Architect.

B. If Work to remain in place is damaged, restore to original condition at no additional cost to the Owner.

C. Concealed Conditions: If conditions cause changes in the Work from requirements of the Contract Documents, the Contract Sum will be adjusted in accordance with the General Conditions.

3.2 EXAMINATION

A. Verify that areas are ready for alteration and remodeling.

B. Discrepancies: Verify dimensions and elevations indicated in layout of existing work.
   1. Prior to commencing work, carefully compare and check Contract Documents for discrepancies in locations or elevations of work to be executed.
   2. Refer discrepancies among Drawings and existing conditions to Architect for adjustment before work affected is performed.

3.3 PREPARATION

A. Construct temporary fire-rated partitions to separate existing occupied areas from construction and alteration areas. Comply with provisions of Division 01 Section “Temporary Facilities and Controls.”

B. Cut, move, or remove items as necessary for access to alteration and renovation Work.
   1. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, deteriorated masonry and concrete, and other deteriorated materials. Replace materials as specified for finished Work.
   2. Remove debris and abandoned items from area and from concealed spaces.

C. Cutting and Removal: Perform cutting and removal work to remove minimum necessary, and in manner to avoid damage to adjacent work. Cut finish surfaces such as masonry, tile, plaster, or metals by methods to terminate surfaces in straight line at natural point of division.

D. Prepare surface and remove surface finishes as necessary to provide for proper installation of new materials and finishes.

E. Close openings in exterior surfaces to protect existing Work from weather and extremes of temperature and humidity. Insulate ductwork and piping to prevent condensation in exposed areas.

F. Provide temporary barriers and closures to control operations to prevent spread of dust to occupied portions of building.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

B. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
2. Vertical Openings: Close openings of 25 sq. ft. or less with plywood or similar materials.
3. Horizontal Openings: Close openings in floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
4. Install tarpaulins securely using fire-retardant-treated wood framing and other materials.
5. Where temporary wood or plywood enclosure exceeds 100 sq. ft. in area, use fire-retardant-treated material for framing and main sheathing.

C. Temporary Partitions: Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.
1. Construct non-fire-rated dustproof partitions of not less than nominal 4-inch studs, 1/2-inch gypsum wallboard with joints taped on occupied side, and 1/2-inch fire-retardant plywood on construction side.
2. Insulate partitions to provide noise protection to occupied areas.
3. Seal joints and perimeter.
4. Equip partitions with dustproof doors and security locks.
5. Protect air-handling equipment.
6. Weatherstrip openings.

D. Temporary Fire-Rated Partitions: Erect and maintain dustproof fire-rated partitions and temporary enclosures to limit dust and dirt migration and to separate occupied areas from construction, fumes, and noise. Fire-rated partitions shall be provided to separate existing occupied areas from construction areas in accordance with NFPA 241.
1. Construct fire-rated dustproof partitions of not less than nominal 4-inch studs, 1/2-inch or 5/8-inch Type X gypsum wallboard on both sides, with joints taped.
2. Extend partitions up to underside of existing structure to the greatest extent possible.
3. Insulate partitions to provide noise protection to occupied areas.

4. Seal joints and perimeter with fire-resistant joint sealant.
5. Equip partitions with dustproof doors and security locks.
   a. Protect openings in 1-hour fire-rated partitions with 45-minute hollow metal or solid core wood doors.
6. Protect air-handling equipment.
7. Weatherstrip openings.

E. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
1. Provide fire extinguishers, installed on walls on mounting brackets, visible and accessible from space being served, with sign mounted above.
   a. Field Offices: Class A stored-pressure water-type extinguishers.
   b. Other Locations: Class ABC dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for exposures.
   c. Locate fire extinguishers where convenient and effective for their intended purpose; provide 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 firefighting. Prohibit smoking in hazardous fire-exposure areas.
4. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
5. Permanent Fire Protection: At earliest feasible date in each area of Project, complete installation of permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
6. Develop and supervise an overall fire-prevention and first-aid fire-protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.5 MOISTURE AND MOLD CONTROL

A. Requirements in this article reflect recommendations of the Associated General Contractors of America.

B. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction. Remove and replace materials with mold.

C. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
1. Protect porous materials from water damage.
2. Protect stored and installed material from flowing or standing water.
3. Keep porous and organic materials from coming into prolonged contact with concrete.
4. Remove standing water from decks.
5. Keep deck openings covered or dammed.

D. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.

2. Keep interior spaces reasonably clean and protected from water damage.
3. Periodically collect and remove waste containing cellulose or other organic matter.
4. Discard or replace water-damaged material.
5. Do not install material that is wet.
6. Discard, replace or clean stored or installed material that begins to grow mold.
7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.

E. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
2. Use permanent HVAC system to control humidity.
3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.

F. Wet and Water-Damaged Materials:
1. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 24 hours are considered defective.
2. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record daily readings over a forty-eight hour period. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
3. Remove materials that can not be completely restored to their manufactured moisture level within 48 hours.

3.6 PROCEDURES

A. Refinishing At Removed Work: Cut below surface of substrate materials and patch over area of removal with finish materials so removal is not apparent.

B. Remove and replace existing ceilings, and cut, patch, or replace existing walls, partitions and floors as may be necessary for access to valves, piping, conduit and tubing by mechanical and electrical trades as directed and approved by the Architect, and performed by the appropriate subcontractor for the Work involved, or by other properly qualified subcontractors.

C. Patch and extend existing Work using skilled mechanics who are capable of matching existing quality and workmanship. Quality of patched or extended Work shall be not less than that specified for new Work.

D. Cutting:
1. Concrete and Masonry: Saw cut where feasible.
2. Plaster: Cut back to sound plaster on straight lines, and back-bevel edges of remaining plaster. Trim and prepare existing lath for tying of new lath.
3. Woodwork: Cut back to a joint or panel line. Undamaged removed materials may be reused.
4. Resilient Tiles: Remove in whole units to natural breaking points or straight joint lines with no damaged or defective existing tiles remaining where joining new construction.
5. Salvaged Materials: Carefully remove to avoid damage, thoroughly clean and reinstall as indicated, or as directed.

6. Doors: Remove in such a manner as to facilitate filling in of openings or installation of new Work, as required by Drawings.
7. Structural Elements: Remove only as shown on the Structural Drawings. If not specifically shown, but removal is required, perform such removal or alteration only upon written approval of the Architect. Do not damage or alter any structural element of the existing building.

E. Patching:
1. Match existing Work where possible; if unavailable, use salvage material for patching and provide totally new material in areas where salvage has been removed; consult with the Architect concerning locations for salvaging materials.
2. Repairs or continuations of existing Work shall be relatively imperceptible in the finished Work when viewed under finished lighting conditions from a distance of six (6) feet.
3. Patching, Repairing and Finishing of Existing Work: Perform in compliance with the applicable requirements of the Specification Section covering the Work to be performed and the requirement of this Section.

F. Erect scaffolding as necessary to gain access to the various parts of the Work. Provide structurally sound, rigidly braced and properly constructed scaffolding, shoring and bracing as necessary to positively protect the affected elements and building, and to support the activities or workmen and loads. Design and construction of scaffolds and supports shall be in accordance with applicable safety regulations. Material used shall be adequate to support anticipated loads with a properly calculated margin of safety.

G. Noise Producing Equipment: Minimize use of noise producing equipment. Limit excessive noise to periods of vacancy or provide sound control. Arrange schedules in advance with the Architect.

3.7 EXISTING FURNITURE AND EQUIPMENT

A. Owner Salvaged Items: Personal items in areas subject to remodeling will be removed before construction in those areas commences.

B. Furniture Items: Before remodeling commences, Owner will remove all furniture and equipment from each space, store items as necessary. Owner will replace these items to the same locations after each remodeling phase is complete. Contractor to coordinate activities with Owner.

3.8 PAINTING

A. Preparation: Prepare patched areas as required for new Work. Wash existing painted surfaces with neutral soap or detergent, thoroughly rinse, and sand when dry.

B. Painting and Finishing: Conform to the applicable provisions of the Painting Section. Prepare bare areas and patches in existing painted surfaces with specified primer and intermediate coats, sanded smooth and flush with adjoining surfaces.

3.9 DISPOSAL OF DEBRIS

A. Remove material, debris and rubbish resulting from Work of this Section from the building and site as it accumulates. Keep all areas of Work in “broom clean” condition as the Work progresses.

B. At completion of renovation and remodeling Work in each area, provide final cleaning and return space to a condition suitable for use by the Owner.

END OF SECTION

SECTION 01 41 00

REGULATORY REQUIREMENTS

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Quality Assurance.

B. References Standards.

C. Definitions.

D. Abbreviations.

E. Format and Specification Context Explanations.

F. Drawing Symbols.

G. General Requirements.

1.2 QUALITY ASSURANCE

A. General:
1. For products or workmanship specified by a standard of an association, trade, or Federal standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable code authorities having jurisdiction.
2. The contractual relationship of the parties to the Contract should not be altered from the Contract Documents by mention or inference otherwise in any reference standard.
3. Obtain copies of standards when required by Contract Documents.
4. Maintain copy of standards at jobsite during submittals, planning, and progress of the specific work for which the standards pertain, until the date of Substantial Completion.
5. In the absence of specific instructions in the specifications, materials, products, equipment and their installation shall conform to the applicable codes, regulations and standards specified therein. When a conflict exists between the applicable code, regulation and standard and that specified, the more stringent code regulation or standard shall prevail, except as authorized by applicable authorities having jurisdiction.

B. Specifications and Drawings: The Drawings and Specifications are correlative and have equal authority and priority. Base disagreements in themselves or in each other on the most expensive combination of quantity and quality of work indicated. In the event of such disagreement bring it to the attention of the Architect, who will determine the appropriate method to perform the work.

C. Industry Standards: Where compliance with two (2) or more industry standards or sets of requirements are specified, and overlapping of those different standards or requirements establishes different or conflicting minimums or levels of quality, the most stringent requirement is intended and will be enforced, unless specifically detailed language written into Contract Documents clearly indicates that a less stringent requirement is to be fulfilled.

Refer apparently equal-but-different requirements, and uncertainties as to which level of quality is more stringent, to the Architect for a decision before proceeding.

D. Contractor's Option: Except for overlapping or conflicting requirements, where more than one (1) set of requirements are specified for a particular unit of work, option is intended to be Contractor's regardless of whether or not it is specifically indicated as such.

E. Minimum Quality/Quantity: In every instance, the quality level or quantity shown or specified is intended to be the minimum for the work to be performed or provided. Except as otherwise specifically indicated, the actual work may either comply exactly with the minimum (within specified tolerances), or may exceed that minimum within reasonable limits. In complying with requirements, indicated numeric values are either minimums or maximums as noted or as appropriate for context of requirements. Refer instances of uncertainty to Architect for decision before proceeding.

F. Specialists' Assignments: In certain instances, specification text requires (or implies) that specific work is to be assigned to specialists, who are engaged for performance of work. Such assignments shall be recognized as special requirements over which the Contractor has no choice or option. These requirements should not be interpreted so as to conflict with applicable regulations, union jurisdiction settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of work is recognized as "expert" for the indicated construction processes or operations. Nevertheless, the final responsibility for fulfillment of the entire set of requirements remains with the Contractor.

1.3 REFERENCE STANDARDS

A. Dates of codes, regulations and standards specified shall be the latest date of issue of that code, regulation or standard prior to the date of issue of this Project Manual or Document, except as modified or otherwise directed by the applicable codes and their supplements and amendments adopted by the code authorities having jurisdiction.
   1. Date of Issue - The "date of issue" as it appears in the statement above, means the date which appears on the cover of the Project Manual or Document corresponding to the date of issue of the Contract Documents.
   2. Code Authorities: The "code authorities" as it appears in the statement above, means the authorities responsible for code enforcement.

1.4 DEFINITIONS

A. General Explanation: A substantial amount of specification language consists of definitions for terms found in other Contract Documents, including those in the AIA A201 General Conditions of the Contract for Construction, Supplementary Conditions, the Drawings, and the Specifications. Drawings must be recognized as being diagrammatic in nature and not completely descriptive of requirements indicated thereon. Certain terms used in the Contract Documents are defined in the General Conditions, Supplementary Conditions, and in this Section. Definitions and explanations contained in this Section are not necessarily either complete or exclusive, but are general for this Work to the extent that they are not stated more explicitly in another element of the Contract Documents. In the event of a conflict in definitions or explanations within the Contract Documents or whenever there is need of clarification or interpretation of definitions within or between the Contract Documents, notify the Architect immediately and proceed as directed. Except in cases where definitions are determined by code authorities having jurisdiction, the Architect's interpretation of all definitions will take precedence.

B. General Requirements: The provisions or requirements of Division 1 - Sections apply to entire Work of Contract and, where indicated, to other elements which are included in the Project.

C. Special Conditions: Wherever the term “Special Conditions”, appears in the Contract Documents, it refers collectively to all requirements of the Owner in addition to the sections in Division 1, General Requirements, and to Articles contained in the General Conditions and Supplementary Conditions.

D. Architect: Wherever the term “Architect” or any derivative thereof appears in the Contract Documents, it means PBK, 11 Greenway Plaza, 22nd Floor, Houston, Texas 77046, (713) 965-0608, or their authorized representative(s).

E. Bid, Competitive Sealed Proposal (CSP), Response, Offer, etc.: Wherever the term "Bid", "Competitive Sealed Proposal (CSP)", "Response", "Offer", "Proposal", or any derivative thereof, or similar term appears in the Contract Documents, they mean one and the same, and shall mean Competitive Sealed Proposal, which by definition allows the Owner to accept the “best value” for the school district based on factors other than cost in selecting the Contractor.

F. Contractor, General Contractor, Construction Manager, etc: Wherever the term "Contractor", "General Contractor", "Construction Manager" or any derivative thereof, or similar term appear in the Contract Documents, they mean one and the same.

G. Subcontractor, Sub-subcontractor, Bidder, etc.: Wherever the term "Subcontractor", Sub-subcontractor", "Bidder", "Bidder/Vendor", "Vendor", "Installer", "Integrator", "Respondent", "Offeror", or any derivative thereof, or similar term appears in the Contract Documents, they mean one and the same, and shall refer to the entity (person or firm) licensed and meeting all applicable regulations of the State of Texas and Department of Labor to perform the Work, or their authorized representative(s).
   1. Responsibilities: To avoid any misunderstanding or lack of interpretation, the responsibility for performing the Work is totally that of the entity defined above, and the resolutions proposed in his shop drawings and related documentation shall be demonstrated throughout the Work and specified warranty period.
   2. In the event of a controversy involving the Contract Documents or interpretation of Project requirements, the decision of the Architect will take precedence.

H. District, School District, Owner, etc.: Wherever the term “District”, “School District”, “Owner”, “COM”, or similar such term appears in the Contract Documents, it means the College of the Mainland, 1200 Amburn Road, Texas City, Texas 77591, (409) 938-1211 or its authorized representative(s).

I. Consultants: Wherever the term "Consultant", or any derivative thereof appears in the Contract Documents, it means the following to whom that portion of the work applies.
   1. Architect's Consultants:
      a. MEP Engineer: PBK Engineers, *MEP Group,* Texas 77064 (713) 965-0608, or their authorized representative(s).

J. Indicated: Wherever the term "indicated", or any derivative thereof appears in the Contract Documents, it means a cross-reference to graphic representations, notes, or schedules on Drawings, to other paragraphs or schedules in the Specifications, and to similar means of recording requirements in the Contract Documents. Where terms such as “shown”, “noted”, “scheduled”, and “specified” are used in lieu of “indicated”, it is for the purpose of helping reader locate cross-reference, and no limitation of location is intended except as specifically noted.

K. Directed, Requested, Etc: Where not otherwise explained, terms such as "directed", "requested", "authorized", "selected", "approved", "required", "accepted", and "permitted" or any derivative thereof appears in the Contract Documents, it means as "directed by the Architect", "requested by the Architect", and similar phrases with actions taken by the Architect. However, no meaning or otherwise shall be interpreted to extend the Architect's responsibility into Contractor's area of construction supervision.

L. Approve: Wherever the term "Approve", or any derivative thereof appears in the Contract Documents, it means only the Architect, or an individual designated by him as his representative, can approve or disapprove contract actions. Even if the specifications indicate that an individual other than the Architect, such as the "Engineer" or "Consultant" will approve or disapprove an action, it is understood that only the Architect has this authority unless the individual is so designated by him in writing. Even when an individual is so designated, the Contractor may appeal the action to the Architect and the Architect's decision will be final. In no case will "approval" by the Architect be interpreted as a release of the Contractor from responsibility to fulfill requirements of the Contract Documents.

M. Furnish: Wherever the term "Furnish", or any derivative thereof appears in the Contract Documents, it means supply or deliver to Project site, ready for unloading, unpacking, assembly, erection, placing, installing, anchoring, applying, curing, finishing, protecting, cleaning and similar operations, as applicable in each instance.

N. Install: Wherever the term "Install", or any derivative thereof appears in the Contract Documents, it means performing the operations at the Project site, of unloading, unpacking, assembly, erection, placing, installing, anchoring, applying, curing, finishing, protecting, cleaning and similar operations, as applicable in each instance.

O. Provide: Wherever the term "Provide", or any derivative thereof appears in the Contract Documents, it means furnish and install at the Project site, complete and ready for intended use, as applicable in each instance.

P. Project, Site: Wherever the term "Project", "Site", or similar such term appears in the Contract Documents, it means the space available to the Contractor for performance of the Work, either exclusively or in conjunction with others performing work as part of the Project. The extent of project or site is shown on the Drawings, and may or may not be identical with description of land upon which Project is to be built.

Q. Installer: Wherever the term "Installer", or any derivative thereof appears in the Contract Documents, it means the entity (person or firm) engaged by the Contractor or its subcontractor or sub-subcontractor for performance of a particular unit of work at the Project, including installation, erection, application and similar required operations. It is a general requirement that such entities (Installers) be expert in operations they are engaged to perform.

R. Specialist: Wherever the term "Specialist", or any derivative thereof appears in the Contract Documents, it means an individual or firm of established reputation (or if newly organized, whose personnel have previously established a reputation in the same field), which is regularly engaged in, and which maintains a regular force of workmen skilled in either (as applicable) manufacturing or fabricating items required by the Contract, installing items required by the Contract, or otherwise performing work required by the Contract. Where the Contract Specification requires installation by a specialist, that term shall also be deemed to mean either the manufacturer of the item or firm who will perform the work under the manufacturer's direct supervision.

S. Testing Laboratory: Wherever the term “Testing Laboratory”, or any derivative thereof appears in the Contract Documents, it means an independent entity engaged to perform specific inspections or tests of the work, either at the Project site or elsewhere; and to report and (if required) interpret results of those inspections or tests.

1.5 FORMAT AND SPECIFICATION CONTEXT EXPLANATIONS

A. Underscoring: Is used strictly to assist reader of specification text in scanning text for key words (for quick recall). No emphasis on or relative importance is intended where underscoring is used.

B. Capitalization: Except for manufacturer, product, or trademark names, capitalization is used strictly to assist reader of specification text in scanning text for key words (for quick recall). No emphasis on or relative importance is intended where capitalization is used.

C. Imperative language: Is used generally in specifications. Except as otherwise indicated, requirements expressed imperatively are to be performed by Contractor. For clarity of reading at certain locations, contrasting subjective language is used to describe responsibilities which must be fulfilled indirectly by the Contractor, or when so noted, by others.

D. Section Numbering: Is used to facilitate cross-reference in Contract Documents. Sections are placed in Project Manual in numeric sequence; however, numbering sequence is not complete, and listing of sections at beginning of Project Manual must be consulted to determine numbers and names of specification sections in Contract Documents.

E. Page Numbering: Pages are numbered independently for each section. The section number is shown preceded by the project number and followed by the page number at the bottom of each page, to facilitate the location of text. The project number is given to identify the project, for which specification was written, should the section become separated from the Project Manual.

F. Specifying Methods: The techniques or methods of specifying to record requirements varies throughout text, and may include “prescriptive, “open-generic descriptive”, “compliance with standards”, “performance”, or a combination of these. The method used for specifying one unit of work has no bearing on requirements for another unit of work.

G. Abbreviations: The language of Specifications and other Contract Documents is of the abbreviated type in certain instances, and implies words and meanings which will be appropriately interpreted. Actual work abbreviations of a self-explanatory nature have been included in texts. Specific abbreviations have been established, principally for lengthy technical terminology and primarily in conjunction with coordination of specification requirements with notations on drawings and in schedules. These are frequently defined in section at first instance of use. Trade association names and titles of general standards are frequently abbreviated. Singular words will be interpreted as plural and plural words will be interpreted as singular where applicable and where full context of the Contract Documents so indicates. A list of typical abbreviations, includes, but is not limited to the following trade associations and organizations. Refer to Drawings and other Contract Documents for other abbreviations.

AA	Aluminum Association
AAMA	Architectural Aluminum Manufacturer's Assn.
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ACIL	American Council of Independent Laboratories
AGA	American Gas Association
AGC	Associated General Contractors of America

AHA	American Hardboard Association
AHGA	American Hotdip Galvanizers Association
AI	Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron & Steel Institute
AITC	American Institute of Timber Construction
ANSI	American National Standards Institute
APA	American Plywood Association
ARI	Air Conditioning & Refrigeration Institute
ASA	Acoustical Society of America
ASA	American Subcontractors Association
ASAHC	American Society of Architectural Hardware Consultants
ASC	Adhesive & Sealant Council, Inc.
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigeration, and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASPE	American Society of Professional Engineers
ASPI	American Wood Preserver's Institute
ASTM	ASTM International
AWI	Architectural Woodwork Institute
AWS	American Welding Society
BIA	Brick Institute of America
BRI	Building Research Institute
CRA	California Redwood Association
CLFMI	Chain Link Fence Manufacturers Institute
CRSI	Concrete Reinforcing Steel Institute
CSI	Construction Specifications Institute
DHI	Door and Hardware Institute
EPA	Environmental Protection Agency
FTI	Facing Tile Institute
FGMA	Flat Glass Marketing Association
GA	Gypsum Association
HPMA	Hardwood Plywood Manufacturers Association
IBC	International Building Code
ICBO	International Conference of Building Officials
ICC	International Code Council
IEEE	Institute of Electrical and Electronic Engineers
JSMA	Joint Sealer Manufacturers Association
MFMA	Maple Flooring Manufacturers Association
ML/SFA	Metal Lath/Steel Framing Association
NAAMM	National Association of Architectural Metal Manufacturers
NAMM	National Association of Mirror Manufacturers
NBLP	National Bureau of Lathing & Plastering
NCPI	National Clay Pipe Institute
NCMA	National Concrete Masonry Association
NEMA	National Electrical Manufacturers Assn.
NESC	National Environmental Systems Contractors
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NHLA	National Hardwood Lumber Association
NOMMA	National Ornamental Metal Manufacturers Assn
NPVLA	National Paint, Varnish and Lacquer Assn.
NRMCA	National Ready Mixed Concrete Assn.
NRCA	National Roofing Contractors Association

NSPE	National Society of Professional Engineers
NWMA	National Woodwork Manufacturers Assn., Inc.
OSHA	Occupational Safety and Health Administration
PDCA	Painting and Decorating Contractors of America
PI	Perlite Institute, Inc.
PCA	Portland Cement Association
RFCI	Resilient Floor Covering Institute
RVFC	Rubber and Vinyl Floor Council
SBCCI	Southern Building Code Congress International, Inc.
SFPA	Southern Forest Products Association
SHLMA	Southern Hardwood Lumber Manufacturing Assn.
SDI	Steel Deck Institute
SDI	Steel Door Institute
SJI	Steel Joist Institute
SSPC	Steel Structures Painting Council
TCA	Tile Council of America, Inc.
UBC	Uniform Building Code
UL	Underwriter's Laboratories, Inc.
VBI	Venetian Blind Institute
VFI	Vinyl Fabrics Institute
WCLIB	West Coast Lumber Inspection Bureau
WRCLA	Western Red Cedar Lumber Association
WWPA	Western Wood Products Association

1.6 DRAWING SYMBOLS

A. General: Except as otherwise indicated, graphic symbols used on drawings are those symbols recognized in the construction industry for purposes indicated. Where not otherwise noted, symbols defined by “Architectural Graphic Standards”, published by the American Institute of Architects (AIA) and John Wiley & Sons, Inc., latest edition. Refer instances of uncertainty to Architect for clarification before proceeding.

B. Mechanical/Electrical Drawings: Graphic symbols used in Mechanical/Electrical Drawings are generally aligned with symbols recommended by American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE). Where appropriate, those symbols are supplemented by more specific symbols as recommended by other recognized technical organizations, including, but not limited to American Society of Mechanical Engineers (ASME), American Society of Professional Engineers (ASPE), Institute of Electrical and Electronic Engineers (IEEE) and similar organizations. Refer instances of uncertainty to Architect for clarification before proceeding.

1.7 GENERAL REQUIREMENTS

A. Color, Texture, or Pattern Requirements:
1. When color, texture, or pattern is specified, the item, product, or material shall be furnished in the specified color, texture, or pattern, as applicable.
2. When more than one (1) approved manufacturer is named in the Specifications, Contractor may select any of the approved manufacturers and submit the full range of colors, textures, and patterns (standard and special) available of that manufacturer for the Architect’s review and selection.
3. When the term “match existing”, or any derivative thereof appears in the Contract Documents, it means that the sample must match the Owner’s existing work in every respect as to color, texture, and pattern, as applicable.
4. When the term “match Architect’s approved sample”, or any derivative thereof appears in the Contract Documents, it means that the Architect has selected a

sample which must be matched in every respect as to color, texture, and pattern, as applicable.

5. When an item or product is specified of a manufacturer for which only one (1) color, texture, or pattern is available, and a color, texture, or pattern other than that one is specified, Contractor shall bring it to the attention of the Architect for a decision prior to proceeding with the work. Do not proceed with the work until Architect has approved the color, texture, and pattern, as applicable.
6. When an item or product is specified of a manufacturer for which no color, texture, or pattern is specified, and colors, textures, and patterns are available, Contractor shall bring it to the attention of the Architect and submit the full range of colors, textures, and patterns (standard and special) available of that manufacturer for the Architect's review and selection. Do not proceed with the work until Architect has selected and approved the color, texture, and pattern, as applicable.
7. When due to the nature of the item, product, or material, i.e. face brick, tile pavers, natural stone, etc, Contractor shall submit sample or samples which exhibits the full range of characteristics (colors, i.e. lights and darks, as well as textures, and patterns) for which the item, product, or material is available. The Architect will select the color, texture, and pattern, as applicable, from those available and request a sample panel exhibiting the approved characteristics. The approved color range, texture, and pattern, as applicable will then become the standard for which all work on the project will be judged. Architect will be final judge as to having performed work in conformance with approved characteristics.
8. Under no circumstances are colors, textures, patterns, or any other characteristics for which an item, product, or material are available to be selected by anyone other than the Architect or his authorized representative.
9. Non-conforming work shall be removed from the site and replaced with new conforming work at no additional expense to Owner.

B. Continuity of Building Envelope, Full Height Partitions, and Fire Rated Construction:
   1. Continuity of Building Envelope:
      a. All materials such as exterior sheathing, membrane flashings, vapor barriers, insulations, dampproofing, waterproofing, roofing, flashings, etc. and all penetrations, holes, gaps, joints, and openings through such materials shall be sealed to ensure continuity of building envelope, whether indicated or not.
      b. Refer instances of uncertainty to Architect for clarification before proceeding with work.
   2. Full Height Partitions:
      a. All full height partitions shall be from floor to bottom of deck structure and shall be made to fit around steel joists, beams, etc., whether indicated or not.
      b. Seal joints at top of partitions, in flutes of steel deck, and around structural elements with a compressible filler and/or sealant to accommodate movement due to expansion, contraction, and deflection, whether indicated or not. Treat seals in joints of fire rated partitions as specified below for fire rated construction, whether indicated or not.
      c. Refer instances of uncertainty to Architect for clarification before proceeding with work.
   3. Fire Rated Construction:
      a. All seals in fire rated construction, whether at top, bottom, or penetrations through fire rated construction, shall be made with firestopping and fire safing materials to maintain fire rating integrity of construction and satisfy authorities having jurisdiction, whether indicated or not.
      b. Refer instances of uncertainty to Architect for clarification before proceeding with work.

C. Plumbing Line Protection:
   1. Placing or washing materials, including, but not limited to the following, down any plumbing line or fixture is strictly forbidden.
      a. Concrete, cement, sludge, mortar, grout, plaster, or any other cementitious material
      b. Paint, paint thinner, turpentine, kerosene, gasoline, oil, or any other petroleum or hazardous products.
   2. Cleaning painting equipment, including brushes in new or existing plumbing fixtures is strictly prohibited.
   3. If requested, Contractor shall certify that all affected plumbing lines and fixtures are clean , free flowing and running. Plumbing lines and fixtures damaged as a result of any of the above shall be repaired or replaced at no expense to Owner. Contractor shall bear responsibility and all costs of fines, penalties, and legal fees attributed to violations as levied by authorities having jurisdiction.

D. Hanging Items from Deck and Structure: Ducts, pipes, conduits, equipment, and other items indicated to be supported from the structure shall be accomplished using approved hangwires, hangers, or devices of type, size and material recommended to suit the application and installed in accordance with recommendations of the hanger or device manufacturer, Architect and/or Structural Engineer, or code authorities having jurisdiction, whichever is the more stringent requirement. Nothing shall be hung from the deck and structure unless directed to do so by the Architect and/or Structural Engineer. Powder activated devices in metal deck are not permitted. Beam clamps on joists are not acceptable. All attachments to joists must be made through the bottom chord—no attachment will be allowed on the horizontal leg of joist angles.

E. Ducts, Pipes, Conduits, and Wires: Shall be concealed in walls, chases, and enclosed areas out of view, unless specifically indicated as exposed or where exposure is required for proper function of item, such as air registers, air returns, louvers, grilles, vents, thermostats, electrical receptacles, telephone/data terminals and jacks, light switches, etc. Refer instances of uncertainty to Architect for clarification before proceeding.

F. Fasteners:
   1. Unless specifically indicated or directed otherwise, all fasteners in work exposed to view, shall be concealed in the finished work.
   2. No fasteners shall show through or telegraph through exposed face of finished work and all finished surfaces shall be free of all evidence of the existence of fasteners.
   3. Fasteners shall be spaced to accurately and rigidly secure work in place.
   4. If not shown or otherwise required or recommended by manufacturer, standard, or code authorities having jurisdiction, fastener spacing shall not exceed 12 inches on center.
   5. Non-conforming work shall be removed from the site and replaced with new conforming work at no additional expense to Owner.

G. Exposed Metal Work:
   1. Unless specifically indicated or directed otherwise, all exposed metal work shall be flat with all surfaces free of distortions, oil canning, waves, dents, scratches, weld marks, and other surface defects detrimental to good appearance or function.
   2. All steel exposed to exterior weather or moisture, either exposed or concealed in work, shall be hot-dip galvanized, phosphate treated for paint retention and shop prime painted.
   3. Non-conforming work shall be removed from the site and replaced with new conforming work at no additional expense to Owner.

H. Continuous Date and Time Code Operated Devices:

1. Devices used in the construction of this Project which use continuous date and time codes in their operation, whether software or hardware, and whether upgradable or not, including, but not limited to air handling, lighting, alarm, communication, security, and instrumentation systems, elevators, escalators and other conveying systems. In addition, such devices shall remain compliant for 100 years or the life of the device, whichever comes first.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 45 00

QUALITY CONTROL

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Quality Assurance: Requirements for material and product quality and control of installation.

B. Tolerances

C. References and Standards

D. Mock-ups

E. Testing Laboratory Services

F. Inspection Services

G. Manufacturers' field services

1.2 RELATED SECTIONS

A. Section 01 33 00 - Submittal Procedures

B. Section 01 41 00 – Regulatory Requirements

C. The Work of this Section shall be included as a part of all Sections of Work, whether referenced therein or not.

1.3 DESCRIPTION OF REQUIREMENTS

A. Unless specifically noted otherwise, perform all Work shown, mentioned, or reasonably inferred and comply with all work restrictions.

B. Many of the requirements specified elsewhere are included herein for reference and convenience. Where a conflict occurs between the Contract Documents, either within themselves or each other, the more stringent requirement or the most expensive combination of materials and workmanship shall prevail.

C. Contractor shall:
1. perform Work in accordance with the General Conditions, as specified herein, and with the quality control requirements of each Specification Section;
2. perform Work in the highest quality workmanship, unless specified otherwise;
3. join materials with a uniform and accurate fit so they meet with neat straight lines, free of smears, overlaps or irregularities, as applicable to the work;
4. install all exposed materials appropriately level, plumb, and at accurate angles as shown and flush with adjoining materials;
5. attach materials with sufficient strength, and with number and spacing of fasteners and attachments that will not fail until materials joined are broken or permanently deformed;
6. use concealed fasteners, unless shown or directed otherwise.

1.4 QUALITY ASSURANCE AND CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturer’s instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Perform Work by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.5 TOLERANCES

A. Monitor fabrication and installation tolerance control of Products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

C. Adjust Products to appropriate dimensions; position before securing Products in place.

1.6 REFERENCES AND STANDARDS

A. For Products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current on date of Owner-Contractor Agreement except where specific date is established by code.

C. Obtain copies of standards where required by product specification sections.

D. When specified reference standards conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

E. Neither contractual relationships, duties, responsibilities of parties in Contract nor those of Architect/Engineer shall be altered from Contract Documents by mention or inference otherwise in reference documents.

F. Refer to Section 01 41 00, Codes, Regulations and Standards, for additional information concerning applicable reference and standards requirements.

1.7 MOCK-UP REQUIREMENTS

A. Tests will be performed under provisions identified in this section and identified in respective product specification sections.

B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

C. Accepted mock-ups shall be the comparison standard for remaining Work.

D. Where mock-up has been accepted by Architect/Engineer and is specified in product specification sections to be removed; remove mock-up and clear area when directed to do so by Architect.

E. Mock-up may be approved in phases as portions are completed.

F. Project Mock-up Requirements: Provide an actual sample panel with the following properties:
   1. Size: Minimum 6 feet wide by 8 feet tall. Size may vary according to specific project requirements. Brace and support as required to withstand structural windloads.
   2. Materials: actual exterior finishes including, but not limited to face brick, cast stone, and plaster, actual building materials and assemblies indicating brick patterns on masonry and stud back-up as occurs with dampproofing and flashing as detailed, actual portion of aluminum storefront indicating jam, sill and head attachment and flashing details, and where appropriate, provide mock-up of special finish details, insets and reliefs, reveals, expansion and control joints, brick ledges, brick head and sills, pipe penetrations and waterproofing materials. Provide roof edge flashing and gutter section (as applicable) in pre-finished color as selected by Architect to cap the mock-up panel. Include a sealant joint at least 24 inches long. One (1) panel is required per construction type.
   3. Drawing: Actual mock-up drawing will be submitted by the Architect after submittals have been approved.

1.8 TESTING SERVICES

A. Owner will appoint, employ, and pay for specified services of an independent firm to perform testing.

B. The independent firm will perform tests and other services specified in individual specification sections and as required by the Architect/Engineer, Owner, or authority having jurisdiction.

C. Testing and source quality control may occur on or off the project site. Perform off-site testing as required by the Architect/Engineer or the Owner.

D. Reports will be submitted by the independent firm to the Owner, Architect/Engineer, and Contractor, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.

E. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
   1. Notify Architect/Engineer and independent firm 48 hours prior to expected time for operations requiring services, or as specified in individual specification sections.
   2. Make arrangements with independent firm and pay for additional samples and tests required.

F. Testing does not relieve Contractor to perform Work to contract requirements.

G. Re-testing required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Architect/Engineer. Payment for re-testing will be charged to the Contractor by deducting testing charges from the Contract Sum/Price.

1.9 INSPECTION SERVICES

A. Owner will appoint, employ, and pay for specified services of an independent firm to perform inspection.

B. The independent firm will perform inspections and other services specified in individual specification sections and as required by the Architect/Engineer, Owner, or authority having jurisdiction.

C. Inspecting may occur on or off the project site. Perform off-site inspecting as required by the Architect/Engineer or the Owner.

D. Reports will be submitted by the independent firm to the Owner, Architect/Engineer, and Contractor, indicating inspection observations and indicating compliance or non-compliance with Contract Documents.

E. Cooperate with independent firm; furnish safe access and assistance by incidental labor as requested.
   1. Notify Architect/Engineer and independent firm 48 hours prior to expected time for operations requiring services, or as specified in individual specification sections.

F. Inspecting does not relieve Contractor to perform Work to contract requirements.

1.10 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as required, and to initiate instructions when necessary.

B. Submit qualifications of observer to Architect/Engineer within ten (10) days after receipt of Notice to Proceed, in advance of required observations. Observer subject to approval of Architect/Engineer and Owner.

C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

D. Refer to Section 01 33 00, Submittal Procedures, for additional information concerning submittal procedures and requirements for Manufacturers Field Reports.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 EXAMINATION

E. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.

F. Verify existing substrate is capable of structural support or attachment of new Work being applied or attached.

G. Examine and verify specific conditions described in individual specification sections.

H. Verify utility services are available, of correct characteristics, and in correct locations.

3.2 PREPARATION

I. Clean substrate surfaces prior to applying next material or substance.

J. Seal cracks or openings of substrate prior to applying next material or substance.

K. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

A. Specific administrative and procedural minimum actions are specified in this Section, as extensions of provisions in other Contract Documents. These requirements have been included for special purposes as indicated. Nothing in this Section is intended to limit types and amounts of temporary work required, and no omission from this Section will be recognized as an indication that such temporary activity is not required for successful completion of the Work and compliance with requirements of the Contract Documents. Provisions of this Section are applicable to, but are not limited to the temporary power, temporary water, temporary heat, field office, mobile telephone, sanitary facilities, storage facilities, signs, barriers, security, construction fence, cleaning, first aid facilities, fire protection, construction aids, parking facilities, storm water control and pollution prevention plan, as further expanded in this Section.

1.2 JOB CONDITIONS

A. General: Establish and initiate use of each temporary facility at time first reasonably required for proper performance of the Work. Terminate use and remove facilities at earliest reasonable time, when no longer required or when permanent facilities have, with authorized use, replaced their need.

B. Conditions of Use:
   1. Install, operate, maintain and protect temporary facilities in a manner and at locations which will be safe, non-hazardous, sanitary, and protective of persons and property, and free of deleterious effects.
   2. Be responsible for overloading or excess use of or damage resulting from the overloading or excess use of existing utilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials, not specifically described herein, but required for proper completion of Work of this Section, may be new or used as selected by the Contractor, but shall be of design, type, size, and strength recommended to suit intended purpose.

B. Items required to protect the tenants, workmen, and public from danger, shall be sufficiently designed to protect them. Where required, exclude the public from all hazards.

PART 3 - EXECUTION

3.1 UTILITIES

A. Temporary Power: Provide temporary power and all wiring, lamps, distribution of power, and equipment required for construction, inspection and testing of Work.

B. Temporary Water: Provide temporary water and all hoses and equipment required for construction, inspection and testing of Work.

C. Temporary Climate Control: Provide temporary climate control (heating, cooling and humidity control) required for construction of Work.
   1. Provide heat to prevent freezing and to avoid damage to materials in storage, during and after installation, and during curing and drying of materials and finishes. Provide and maintain such dependable source of supply of heat, cooling, and humidity control as necessary until the Work is accepted. No open fire heaters will be permitted. No mold, mildew, rust, or sagging materials due to humidity will be allowed. Contractor shall remediate any and all evidence of mold, mildew, or rust per applicable state standards and requirements.

3.3 MOBILE TELEPHONE

A. Furnish and maintain a mobile telephone for his superintendent's use for the duration of the Project.

3.4 SANITARY FACILITIES

A. Furnish and maintain temporary sanitary facilities. Comply with regulations of State Department of Health and other authorities having jurisdiction. The Contractor may not use the Owner's facilities.

3.5 STORAGE FACILITIES

A. Provide and maintain adequate weathertight lockable storage facilities, raised above the ground, with sides and top enclosed.

B. Replace materials improperly stored and damaged by weathered conditions.

C. Remove storage facilities when materials can be stored within the structure in a weathertight condition.

D. Provide for temporary freeze protection as needed.

3.6 SIGNS

B. Signs permitted at the site:
   1. Warning signs.
   2. Directional signs.
   3. Identification signs at field offices.
   4. Emergency medical services sign.
   5. Signs required by Authorities Having Jurisdiction
   6. Storm Water Pollution Prevention Plan sign (SWPPP)

C. Contractor shall allow no other signs to be displayed at the project site, unless authorized by the Owner.

3.7 BARRIERS

A. Provide temporary barricades on all portions of the site adjacent to the construction and accessible to the public.

B. Provide approved barriers around trees and plants designated to remain. Protect against vehicular traffic, stored materials, dumping, chemically injurious materials, water puddling and continuous running water.

3.8 SECURITY

A. Determine if and when watchmen are necessary for protection of the Work, and provide such services when necessary. Neither the provision of watchmen nor the failure to provide watchmen shall relieve the Contractor of responsibility in event of injury to persons or damage to property.

3.9 CLEANING

A. Trash removal: Clear the building and site of trash at least once a week. When rapid accumulation occurs, make more frequent removals. Remove highly combustible trash such as paper and cardboard daily. Dumpsters will not be allowed to overflow and should be emptied on a regular basis.

B. Disposition of Debris: Remove debris from site and make legal disposition. Locations for disposal shall be of the Contractor's choice within the above restriction. Neither debris nor material may be buried or burned at the site. Take necessary precautions to prevent accidental burning of materials by avoiding large accumulations of combustible materials.

C. Final Cleaning: Thoroughly clean the Work, including the removal of smudges, marks, stains, fingerprints, soil, dirt, paint spots, dust, lint, discolorations, and other foreign materials.

3.10 TEMPORARY FIRST AID FACILITIES

A. Provide first aid equipment and supplies, with qualified personnel continuously available to render first aid at the site.

B. Provide a sign, posted at the field office telephone, listing the telephone numbers for emergency medical services: Physicians, ambulance services and hospitals.

3.11 TEMPORARY FIRE PROTECTION

A. Provide a fire protection and prevention program for employees and personnel at the site; and provide and maintain fire extinguishing equipment ready for instant use at all areas of the Project and at specific areas of critical fire hazard.

B. Equipment:
1. Hand extinguishers of the types and sizes recommended by the National Board of Fire Underwriters to control fires from particular hazards.
2. Barrels of water with buckets designated for fire-control purposes.
3. Water hoses connected to an adequate water pressure and supply system.
4. Construction period use of permanent fire protection system.

C. Enforce fire-safety discipline:
1. Store volatile materials in an isolated, protected location.
2. Avoid accumulations of flammable debris and waste in or about the Project.
3. Prohibit smoking in the vicinity of hazardous conditions.
4. Closely supervise and provide fire watches as required by authorities having jurisdiction during and after welding and torch-cutting operations in the vicinity of combustible materials and volatile conditions.
5. Supervise locations and operations of portable heating units and fuel.

D. Contractor shall maintain fire-extinguishing equipment in working condition, with current inspection certificate attached to each extinguisher.

3.12 CONSTRUCTION AIDS

A. Provide construction aids and equipment required to assure safety for personnel and to facilitate the execution of the Work; Scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes and other equipment.

B. Maintain all equipment in a first-class, safe condition.

3.13 PARKING FACILITIES

A. Coordinate location of parking for personnel and employees at the facility to avoid interference with traffic, walks, work and storage areas, or with materials-handling equipment.

END OF SECTION

SECTION 01 71 23

FIELD ENGINEERING

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Measures to ensure adequate quality control and quality assurance for all Work in accordance with Conditions of the Contract, as specified herein, and with the quality control and quality assurance requirements of each Specification Section, and authorities having jurisdiction.

1.2 RELATED SECTIONS

A. All Sections of Work requiring layout, survey, reference points and their verification and protection, and quality control and assurance monitoring requirements.

1.3 DEFINITIONS

A. Survey and Field Engineering: Wherever the terms “Survey”, “Field Engineering” or any derivative thereof, or similar term appears within this Section, they mean one and the same, and shall mean the survey or field engineering work performed by the Field Engineer as defined below and is separate from that of the survey work provided by the Owner.

B. Field Engineer: Wherever the term “Field Engineer” or any derivative thereof, or similar term appears in the Contract Documents, it shall refer to the General Contractor’s employee(s) that are expert in, routinely engaged in, and have at least five (5) years experience in, the practice of construction project field engineering, building and project layout, construction measurements and monitoring, etc.

C. “Construction Surveyor”: Wherever the term “Construction Surveyor”, or any derivative thereof, or similar term appears in the Contract Documents, the entity (person or firm) licensed as a Registered Professional Land Surveyor or Professional Engineer of the discipline required for specific service on the Project in the State in which the Project occurs, with five (5) years minimum experience, and meeting all applicable regulations of the State in which the Project occurs and Department of Labor, and other authorities having jurisdiction to perform the Work. To avoid any misunderstanding or lack of interpretation, the entity responsible for performing the Work of this Section shall be employed by the General Contractor, and the responsibility, including methods and means, is totally that of the General Contractor.

D. Quality Control and Quality Assurance: Wherever the terms “Quality Control”, “Quality Assurance” or any derivative thereof, or similar term appears in the Contract Documents, they mean one and the same, and shall mean an aggregate of activities of the General Contractor, such as design analysis and statistical sampling with inspection for defects, designed to ensure adequate quality in materials and workmanship whether factory manufactured or jobsite produced.

1.4 QUALITY CONTROL AND QUALITY ASSURANCE

A. Employ a Construction Surveyor complying with the definition above and acceptable to the Owner and Architect, to perform all Construction Surveying. Provide full responsibility for the Construction Surveyor and accuracy of the performance of all items of Work shown on Drawings, specified herein, or in other Specification Sections.

1.5 SUBMITTALS FOR REVIEW

A. Submit name, address, telephone number, fax number, and registration number of the proposed Construction Surveyor prior to starting Work of this Section.

B. Submit evidence of Construction Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate, if different from Construction Manager's.

C. Upon request by Architect, submit documentation verifying accuracy of all Survey Work, including a certificate sealed and signed by the Construction Surveyor, that the elevations and locations of the Work are in conformance with Contract Documents and such information has been incorporated into the Project Record Documents.

D. Submit Project Record Documents under provisions of Section 01 77 00, Closeout Procedures.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify locations of survey control points prior to starting work.

B. Promptly notify Architect of discrepancies discovered.

3.2 SURVEY REFERENCE POINTS

A. Locate and protect survey control and reference points.

B. Control datum for survey is that established by the Owner provided survey and as indicated on Drawings.

C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

E. Replace dislocated survey control points based on original Owner's survey control. Make no changes without prior written permission of Architect.

3.3 FIELD ENGINEERING AND CONSTRUCTION SURVEYOR REQUIREMENTS

A. Establish a minimum of two (2) permanent benchmarks on site, referenced to established control points. Record locations, with horizontal and vertical data, on Project Record Documents.

B. Field Engineer shall establish elevations, lines and levels. Locate, lay out, and monitor by instrumentation and similar appropriate means Work, including, but not be limited to:
   1. elevations, and layout of property lines and easements;
   2. site drainage, including storm water control and pollution prevention measures, slopes, swales, and invert elevations;

3. limits of clearing and grubbing, including identification of trees and planting to be removed and methods for protection of those to remain;
4. excavations, fill and topsoil placement, and all (rough and finish) grades;
5. trenching and trench safety;
6. utility locations;
7. concrete and asphaltic concrete paving, curbs, ramps, and other site improvements, as applicable;
8. grid or axis for structures, batter board locations;
9. elevation, grade controls, and layout of building foundation and grade beams, column locations, base plates, embedded items, depressions, formwork, and openings in concrete, including all interior finish grades;
10. elevations of structural steel, including, steel joists/trusses, steel decks, and associated miscellaneous metals;
11. elevations and layout of masonry, including concrete masonry units (CMU), face brick, cast stone, and other elements built-in masonry.
12. elevations and slopes of roofing, including those for lightweight insulating concrete deck system, if applicable.
13. elevations and layout of work as required to ensure proper operation, clearances, and tolerances, including conveying systems, plumbing and mechanical work; and
14. monitoring of movement and protection of existing or adjacent structures, as applicable.

C. Throughout course of Work, verify existing conditions and layouts by same means as originally used to ensure conformance with design requirements and details. Notify Architect immediately, if discrepancies are found.

D. Provide one (1) copy each of reduced Field Engineer's notes to the Architect, Owner, Construction Surveyor, and affected Consultant within four (4) working days of completion of each portion of the Field Engineering Work.

E. Field Engineer's notes shall be clear and complete. The Field Engineer shall be available at no expense to the Owner, Architect, or Consultants for note interpretation, if required.

F. Field Engineer shall perform surveys to determine quantities of unit cost work, including control surveys to establish measurement reference lines. Notify Architect prior to starting work.

G. Provide Construction Surveying services. Utilize recognized engineering survey practices.

H. Construction Surveyor shall verify and record/document their findings, on a drawn survey at a scale matching that of the original Contract Documents, for the following:
1. All property lines and corners
2. All building corners
3. All paving corners
4. Finish floor of all/each buildings
5. Invert elevations, flow lines for all site drainage structures and improvements

I. Payment for earthwork quantities shall be for materials in place, compacted, and determined by neat line method.

J. Provide the Owner a reproducible hard copy and digital/electronic file copy of all the Construction Surveyor's work.

3.4 PROJECT RECORD DOCUMENTS

A. Maintain a complete and accurate log of control and Field Engineer work as it progresses.

B. Upon completion of Work, including, but not limited to earthwork, formwork, foundation, structural steel erection, and major site improvements, prepare Project Record Documents illustrating dimensions, locations, angles, and elevations of construction and site work.

C. Submit Project Record Documents as specified in Paragraph 1.5.

END OF SECTION

SECTION 01 73 29

CUTTING AND PATCHING

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

A. Definition: "Cutting and Patching" includes cutting into existing construction to provide for the installation or performance of other work and subsequent fitting and patching required to restore surfaces to their original undamaged condition, including original fire rating of fire rated construction.
   1. Cutting and patching is performed for coordination of the work for access or inspection, to obtain samples for testing, as indicated or required, to remove/replace defective work or work not conforming to the contract documents, to permit alterations to be performed, or for other similar purposes.
   2. Cutting and patching performed during the manufacture of products or during the initial fabrication, erection, or installation processes is not considered to be "cutting and patching" under this definition. Drilling of holes to install fasteners and similar operations are also not considered to be "cutting and patching".

B. Refer to other Sections of these Specifications for specific cutting and patching requirements and limitations applicable to individual units of work.
   1. Unless otherwise specified, requirements of this Section also apply to mechanical and electrical work.

1.2 QUALITY ASSURANCE

A. Visual requirements - Do not cut and patch work exposed on the building's exterior or in its occupied spaces, in a manner that would, in the Architect's opinion, result in lessening the building's aesthetic qualities. Do not cut and patch work in a manner that would result in substantial visual evidence of cut and patchwork. Remove and repair or replace work judged by the Architect to be cut and patched in a visually unsatisfactory manner

1.3 RELATED WORK

A. All Sections of Work requiring cutting and patching, including electrical requirements.

1.4 SUBMITTALS

A. Procedural Proposal for Cutting and Patching - Where prior approval of cutting and patching is required, submit proposed procedures for this work well in advance of the time work will be performed and request approval to proceed. Include the following information, as applicable, in the submittal.
   1. Describe nature of the work and how it is to be performed, indicating why cutting and patching cannot be avoided. Describe anticipated results of the work in terms of changes to existing work, including structural, operational, and visual changes as well as other significant elements.
   2. List products to be used and firms including their qualifications that will perform the work. Also, provide cost proposals when applicable.
   3. Give dates when work is expected to be performed.

4. List utilities that will be disturbed or otherwise be affected by work, including those that will be relocated and those that will be disconnected or out-of service temporarily. Indicate how long utility service will be disrupted.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General - Except as otherwise indicated or as directed by Architect, use materials for cutting and patching that are identical to materials being cut and patched. If identical materials are not available, or cannot be used, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials for cutting and patching that will result in equal or better performance characteristics.
   1. The use of trade name and supplier's name and address is to indicate a possible source of the material or product. Product of the same type from other sources shall not be excluded provided they possess like physical and functional characteristics, except where specified as no substitutions allowed or where a material or product is specified as the basis of specification and no other approved manufacturers are listed.
   2. Use materials, products, and devices to maintain integrity of fire rating of existing fire rated construction which comply with the requirements of authorities having jurisdiction.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Before starting work, examine the surfaces to be cut and patched and the conditions under which the work is to be performed. If unsafe or otherwise unsatisfactory conditions are encountered, take corrective action before proceeding with the work.
   1. Before the start of cutting work, meet at the work site with all parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict between the various trades. Coordinate layout of the work and resolve potential conflicts before proceeding with the work.
   2. After uncovering work, examine conditions affecting installation of product or performance of work.
   3. Report unsatisfactory or questionable conditions to Architect in writing; do not proceed with work until Architect has provided further instructions.

3.2 PREPARATION

A. Provide temporary support to prevent failure of the work to be cut.

B. Protect other work during cutting and patching to prevent damage. Provide protection from adverse weather conditions of that part of the Project that may be exposed during cutting and patching operations.

C. Take precautions not to cut existing pipe, conduit, ducts, or wires serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

3.3 PERFORMANCE

A. General - Employ only skilled workmen to perform the cutting and patching work. Except as otherwise indicated or as approved by Architect, proceed with cutting and patching at the earliest feasible time and complete the work without delay.

B. Cut the work using methods that are least likely to damage work to be retained or adjoining work. Where possible, review proposed cutting and patching procedures with the original installer and comply with original installer's recommendations.
   1. In general, where cutting is required, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut through concrete and masonry using a cutting machine such as a Carborundum saw or core drill to insure a neat hole. Cut holes and slots neatly to size required with minimum disturbance of adjacent work. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces. Temporarily cover openings when not in use.
   2. Comply with requirements of other applicable sections where cutting and patching requires excavating and backfilling.
   3. By-pass utility services such as pipe and conduit, before cutting, where such utility services are shown or required to be removed, relocated, or abandoned. Cut-off conduit and pipe in walls or partitions to be removed. After by-passing and cutting, cap, valve, or plug and seal tight remaining portion of conduit and pipe to prevent entrance of moisture, vermin, or other foreign matter.

C. Patching - Patch with seams which are durable and as invisible as possible. Comply with specified tolerance, if any, for the work.
   1. Where feasible, inspect and test patched areas to demonstrate integrity of work.
   2. Restore exposed finishes of patched areas and where necessary extend finish restoration into retained adjoining work in a manner which will eliminate evidence of patching and refinishing.
   3. Where removal of walls or partitions extends one finished area into another finished area, patch and repair floor, wall, and ceiling surfaces in the new space to provide an even surface of uniform color and appearance. If necessary to achieve uniform color and appearance, remove existing floor and wall coverings or materials, and ceiling finish materials and replace with new materials.
   4. Where patch occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing patch, after patched area has received prime and base coats.
   5. Patch, repair, or re-hang existing ceilings as necessary to provide an even plane surface of uniform appearance.
   6. Fit work airtight to pipes, sleeves, ducts, conduit and other penetrations through non-fire-rated floors and walls, and through finished surfaces.

D. Fire Rated Construction - Where cutting and patching is necessary in existing fire rated construction, use sealant and other fire resistive materials, products, and devices as required and acceptable by the authorities having jurisdiction to repair, patch, and otherwise restore original fire rating and integrity of construction.

3.4 CLEANING

A. Thoroughly clean area and spaces where work is performed or used as access to work. Remove completely: paint, mortar, cement, oils, putty, sealant, and items of similar nature. Thoroughly clean piping, conduit, and similar features before painting or other finishes are applied. Restore damaged pipe covering to its original undamaged condition.

END OF SECTION

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for the following:
   1. Salvaging nonhazardous demolition and construction waste.
   2. Recycling nonhazardous demolition and construction waste.
   3. Disposing of nonhazardous demolition and construction waste.

B. Related Sections include the following:
   1. Division 01 Section “Temporary Facilities and Controls” for environmental-protection measures during construction.
   2. Division 02 Section “Selective Structure Demolition” for disposition of waste resulting from partial demolition of buildings, structures, and site improvements.

1.2 DEFINITIONS

A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.3 PERFORMANCE REQUIREMENTS

A. Salvage/Recycle Requirements: Owner's goal is to salvage and recycle as much nonhazardous demolition and construction waste as possible including the following materials:
   1. Demolition Waste:
      a. Asphaltic concrete paving.
      b. Concrete.
      c. Concrete reinforcing steel.
      d. Brick.
      e. Concrete masonry units.
      f. Wood studs.
      g. Wood joists.
      h. Plywood and oriented strand board.
      i. Wood paneling.

j. Wood trim.
k. Structural and miscellaneous steel.
l. Rough hardware.
m. Roofing.
n. Insulation.
o. Doors and frames.
p. Door hardware.
q. Windows.
r. Glazing.
s. Metal studs.
t. Gypsum board.
u. Acoustical tile and panels.
v. Carpet.
w. Carpet pad.
x. Demountable partitions.
y. Equipment.
z. Cabinets.
aa. Plumbing fixtures.
bb. Piping.
cc. Supports and hangers.
dd. Valves.
ee. Sprinklers.
ff. Mechanical equipment.
gg. Refrigerants.
hh. Electrical conduit.
ii. Copper wiring.
jj. Lighting fixtures.
kk. Lamps.
ll. Ballasts.
mm. Electrical devices.
nn. Switchgear and panelboards.
oo. Transformers.

2. Construction Waste:
   a. Site-clearing waste.
   b. Masonry and CMU.
   c. Lumber.
   d. Wood sheet materials.
   e. Wood trim.
   f. Metals.
   g. Roofing.
   h. Insulation.
   i. Carpet and pad.
   j. Gypsum board.
   k. Piping.
   l. Electrical conduit.
3. Packaging: Regardless of salvage/recycle goal indicated above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
   a. Paper.
   b. Cardboard.
   c. Boxes.
   d. Plastic sheet and film.
   e. Polystyrene packaging.
   f. Wood crates.
   g. Plastic pails.

1.4 SUBMITTALS

A. Waste Reduction Calculations: Before request for Substantial Completion, submit three copies of calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

B. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

C. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

D. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

E. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

F. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.5 QUALITY ASSURANCE

A. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

B. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
   1. Comply with Division 01 Section “Temporary Facilities and Controls” for operation, termination, and removal requirements.

B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.

C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
   1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.

2. Comply with Division 01 Section “Temporary Facilities and Controls” for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Reuse in the Work:
   1. Clean salvaged items.
   2. Pack or crate items after cleaning. Identify contents of containers.
   3. Store items in a secure area until installation.
   4. Protect items from damage during transport and storage.
   5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

B. Salvaged Items for Sale and Donation: Not permitted on Project site.

C. Salvaged Items for Owner's Use:
   1. Clean salvaged items.
   2. Pack or crate items after cleaning. Identify contents of containers.
   3. Store items in a secure area until delivery to Owner.
   4. Transport items to Owner's storage area designated by Owner.
   5. Protect items from damage during transport and storage.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.

C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.
   1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
      a. Inspect containers and bins for contamination and remove contaminated materials if found.
   2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
   3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
   4. Store components off the ground and protect from the weather.
   5. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

3.4 RECYCLING DEMOLITION WASTE

A. Asphaltic Concrete Paving: Break up and transport paving to asphalt-recycling facility.

B. Concrete: Remove reinforcement and other metals from concrete and sort with other metals. Break up concrete and transport paving to recycling facility.

C. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.

D. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.

E. Metals: Separate metals by type.
1. Structural Steel: Stack members according to size, type of member, and length.
2. Remove and dispose of bolts, nuts, washers, and other rough hardware.

F. Asphalt Shingle Roofing: Separate organic and glass-fiber asphalt shingles and felts. Remove and dispose of nails, staples, and accessories.

G. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.

H. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.
1. Separate suspension system, trim, and other metals from panels and tile and sort with other metals.

I. Carpet and Pad: Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.
1. Store clean, dry carpet and pad in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.

J. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.

K. Plumbing Fixtures: Separate by type and size.

L. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.

M. Lighting Fixtures: Separate lamps by type and protect from breakage.

N. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.

O. Conduit: Reduce conduit to straight lengths and store by type and size.

3.5 RECYCLING CONSTRUCTION WASTE

A. Packaging:
1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Site-Clearing Wastes: Chip brush, branches, and trees at landfill facility.

C. Wood Materials:
1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

D. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location.
   1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

3.6 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
   1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
   2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION

SECTION 01 77 00

CLOSEOUT PROCEDURES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 PRE-CLOSEOUT MEETING

A. Pre-Closeout Meeting: Schedule and convene Pre-Closeout Meeting with Owner and Architect in accordance with Section 01 31 19, Project Meetings.

1.2 SUBSTANTIAL COMPLETION

A. The items listed in Document 00 73 00, Supplementary Conditions and the following items shall be completed before Substantial Completion will be granted:
   1. Contractor's Completion List (Punch List): Submit a thorough list of items to be completed or corrected, along with a written request for Substantial Completion and for review of the Work or portion of the Work. The Architect/Engineer's Project Representative, at their discretion, may attend and assist in the preparation of the Contractor's Punch List.
   2. Architect's Supplemental Punch List: The Architect/Engineer, along with the Owner at the Owner's discretion, will inspect the Work utilizing the Contractor's prepared Punch List, noting completed items and incomplete items, and will prepare a supplemental list of items that have been omitted or incomplete items that were not previously noted.
   3. Operations and Maintenance Manuals: Submit as described in paragraph 1.3.
   4. Final Cleaning: Provide final cleaning and adequate protection of installed construction as decribed in paragraph 1.6 and 1.7.
   5. Starting of systems: Start up equipment and systems as described in paragraph 1.8.
   6. Testing and balancing: Testing and balancing of systems must be performed and completed by Owner's forces, and the report submitted and accepted by Architect/Engineer and Owner, as described in the Contract Documents. Make adjustments to equipment as required to achieve acceptance.
   7. Demonstrations: If required by individual specification sections or by Owner, provide demonstrations and instructions for use of equipment as described in paragraph 1.9.
   8. All fire alarm system components must be completed and demonstrated to the Owner.
   9. Local fire marshal approval certificate must be delivered to the Owner.
   10. All exterior clean-up and landscaping must be complete.
   11. All HVAC air and water balancing must be complete.
   12. All Energy Management Systems must be complete and fully operational and demonstrated to the Owner.
   13. All communications equipment, telephone system, and P.A. systems must be complete and demonstrated to the Owner.
   14. All final lockset cores must be installed and all final Owner directed keying completed.
   15. All room plaques and exterior signage must be completed.
   16. All Owner demonstrations must be completed including kitchen equipment, HVAC equipment, plumbing equipment, and electrical equipment.
   17. A final certificate of occupancy must be signed by the Contractor and delivered to the Owner.

B. Date of Substantial Completion: Complete or correct items identified on Punch List and confirm that all items have been corrected prior to Architects re-inspection. Architect/Engineer, along with the Owner, will re-inspect the corrected work to establish the Date of Substantial Completion. Incomplete items remaining will be appended to the Certificate of Substantial Completion (AIA G704). The Date of Substantial Completion represents day one (1) of the closeout period, and represents the date of commencement of the Contractors correctional period and all warranty periods as described and required by the Contract Documents, except as amended in the Certificate of Substantial Completion and elsewhere in the Contract Documents.

C. Certificate of Substantial Completion: When the Work or designated portion thereof is substantially complete, Architect will prepare the Certificate of Substantial Completion to be executed by the Owner and Contractor. Items on the appended Punch List shall be completed or corrected within the time limits established in the Certificate.

1.3 OPERATIONS AND MAINTENANCE MANUAL

A. As a requirement for Substantial Completion, the final Operation and Maintenance Manual shall be submitted to, and reviewed and accepted by the Architect prior to issuance of the Certificate.

B. Prepare 3-ring D-slant binder cover and spline with printed title "OPERATIONS AND MAINTENANCE MANUAL", title of project, and subject matter of binder when multiple binders are required.

C. Submit one (1) copy of preliminary Operations and Maintenance Manuals to respective consultants (Civil, MEP, Structural, etc.) for review of conformance with contract requirements prior to submitting final to Architect. Allow time for proper review.

D. Internally subdivide binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.

E. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

F. Contents: Prepare Table of Contents for each volume, with each product or system description identified, typed on white paper, in three parts as follows:
   1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers.
   2. Part 2: Operation and Maintenance, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
      a. Significant design criteria.
      b. List of equipment.
      c. Parts list for each component.
      d. Equipment start-up instructions
      e. Operating instructions.
      f. Maintenance instructions for equipment and systems.
      g. Maintenance instructions for finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
   3. Part 3: Project documents and certificates, including the following:
      a. Product data.
      b. Air and water balance reports.
      c. Photocopies of warranties, certificates and bonds. Submit originals with Closeout Documents as specified below.

G. Submit one (1) final original and two (2) copies to Architect.

H. Contractor shall provide a DVD, in PDF Format of the O&M binders after approval by the Architect, Consultants and Owner: closeout manual, MSDS binder, O&M Manuals, specifications and approved submittals. Documents shall be hyper-linked to the Table of Contents.

1.4 PROJECT CLOSEOUT

A. Final Payment will not be authorized by the Architect until the Architect finds the Work acceptable under the Contract Documents, subject to the completion and acceptance of the following requirements and other applicable Contract requirements:
   1. Close-out Documents: Provide bound closeout documents as described in paragraph 1.5. Refer to Document CB, Supplementary Conditions, Paragraph 9.10 for additional information.
   2. Record Documents: Submit as described in paragraph 1.10.
   3. Extra materials: Provide extra stock, materials, and products as described in paragraph 1.11 when required by individual specification sections.
   4. Locks: Make final changeover of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of changeover in security provisions.
   5. Temporary Facilities: Discontinue and remove temporary facilities from the site, along with mockups, construction aids, and similar elements.
   6. Warranties, Certificates and Bonds: Execute and assemble transferable warranty documents, certificates, and bonds from subcontractors, suppliers, and manufacturers as described in paragraph 1.12.
   7. Final Inspection and Acceptance by Architect is achieved as described in paragraph 1.13.

1.5 CLOSEOUT DOCUMENTS

A. Coordinate the following items with the requirements of Document CB, Supplementary Conditions of the Contract.

B. Prepare 3-ring D-slant binder cover and spline with printed title "CLOSEOUT DOCUMENTS", title of project, and subject matter of binder when multiple binders are required. Submit one (1) original and two (2) copies.

C. Internally subdivide binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.

D. The close-out documents shall be neatly organized and easily useable as determined by the Architect and Owner. Separate Close-out Documents binders from Operations and Maintenance Manuals. Documents identified as "affidavit" shall be notarized.

E. Contractor shall provide a DVD, in PDF Format of the Closeout Document binders after approval by the Architect, Consultants and Owner: closeout manual, MSDS binder, O&M Manuals, specifications and approved submittals. Documents shall be hyper-linked to the Table of Contents.

F. Contents: Prepare Table of Contents for each volume, with each item description identified, typed on white paper, in five (5) parts as follows:
   1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers. All General Contractor's vendors/suppliers and subcontractors that provided

materials or performed any work related to this project must be listed on this form. Submit Final List of Subcontractors on Document AG.

2. Part 2: Closeout Documents and Affidavits, include the following:
   a. AIA G707 - Consent of Surety to Final Payment;
   b. AIA G706 - Contractor's Affidavit of Payment of Debts and Claims;
   c. AIA G706A - Contractor's Affidavit of Release of Liens;
   d. Subcontractor's Release of Lien: Include contractor's, subcontractor's and direct material and equipment supplier's separate final releases. Submit on attached Close-out Form "A" - Affidavit of Subcontractor's Release of Lien.
3. Part 3: Project documents and certificates, including the following:
   a. Copy of Certificate of Substantial Completion (AIA G704);
   b. Copy of All Permits;
   c. Copy of Final Utility Bill or letter of transfer;
   d. Copy of Certificate of Occupancy;
   e. Certification of Project Compliance: Submit on attached Close-out Form "B". Owner and Architect will initiate form and forward to Contractor for signature once Substantial Completion is established;
   f. Hazardous Material Certificate: Submit on attached **Close-out Form "C"**. Affidavits from Contractor, Subcontractors and General Contractor's vendors or suppliers stating that no hazardous materials/products have been used or installed in this project.
4. Part 4: Warranties, compile sequentially based on specification sections:
   a. General Contractor's Warranty: Submit on company letterhead as described below. This Warranty shall state all sections of Work performed by General Contractor's own forces, and warranty period for each section of Work;
   b. Subcontractor's Warranty: notarized, and submitted on attached Close-out Form "D". This Warranty shall state all sections of Work performed by the subcontractor and warranty period;
5. Part 5: Receipts:
   a. Extra Stock: Provide original receipts for delivery of "Extra Stock" items as described below, (if applicable). Receipts must be signed by an authorized Owner's representative;
   b. Keys: Provide original receipts for delivery of "Keys", (if applicable). Receipts must be signed by an authorized Owner's representative.

G. In addition to the three (3) required close-out binders listed above, provide Architect with one (1) separate binder for their records containing the following:
   1. Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers;
   2. all MSDS sheets for the project;
   3. all warranties from Contractor, subcontractors, direct suppliers, and manufacturers.

H. Failure to complete and close-out project after substantial completion may result in liquidated damages being assessed to the Contractor. Refer to Conditions of the Contract for additional requirements and liquidated damages.

1.6 FINAL CLEANING

A. Execute final cleaning prior to final project inspection and acceptance.

B. Clean interior and exterior glass, and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces, mop hard floor surfaces.

C. Remove smudges, marks, stains, fingerprints, soil, dirt, spots, dust, lint, and other foreign materials from finished and exposed surfaces

D. Clean equipment and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned.

E. Clean and replace filters of operating equipment as required by Contract Documents

F. Clean debris from roofs, gutters, downspouts, and drainage systems.

G. Clean site; sweep paved areas, rake clean landscaped surfaces.

H. Remove waste and surplus materials, rubbish, and temporary construction facilities from site.

1.7 PROTECTING INSTALLED CONSTRUCTION

A. Protect installed Work and provide special protection where specified in individual specification sections until Work is accepted by Architect and Owner.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

F. Prohibit traffic from landscaped areas.

1.8 STARTING OF SYSTEMS

A. Coordinate schedule for start-up of various equipment and systems.

B. Notify Architect/Engineer and Owner 48 hours prior to start-up of each item.

C. Verify each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.

D. Verify tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.

E. Verify wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of Contractors' personnel, and installer in accordance with manufacturers' instructions.

G. When specified in individual specification sections or required by manufacturer, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

H. When specified in individual specification sections or required by Owner or Architect/Engineer, submit a written report in accordance with Section 01300, Submittal Procedures, that equipment or system has been properly installed and is functioning correctly.

1.9 DEMONSTRATION AND INSTRUCTIONS

A. Demonstrate operation and maintenance of products to Owner's personnel a minimum of 48 hours prior to date of Final Completion in accordance with Owner's requirements.

B. Demonstrate Project equipment instructed by qualified manufacturer's representative who is knowledgeable about the Project and equipment.

C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six (6) months.

D. Utilize maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel to explain all aspects of operation and maintenance.

E. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment.

F. Prepare and insert additional data in maintenance manuals when need for additional data becomes apparent during instruction.

G. Review and verify proper star-up and operation of equipment prior to scheduling demonstrations with Owner.

H. All demonstrations are to be documented by video and submitted to the Owner in DVD format along with the close out documents. General contractor is responsible for all video and compilation onto DVD with linked menus.

1.10 PROJECT RECORD DOCUMENTS

A. Record Documents, as described in Section 01 78 39, shall be submitted at Project Closeout. Final Payment will not be authorized by the Architect until final review and acceptance by Architect and Engineers is achieved in accordance with the Owners requirements.

B. At the Contractors request, and with associated fee, Architect may provide electronic versions of the construction drawing and specification files for Contractors use, subject to the terms and conditions of Architects standard electronic document transfer agreement.

C. Submit to respective consultants (Civil, Structural, MEP, etc.) for review. Consultant will mark-up corrections and return to Contractor for final revisions. Make final revisions prior to submitting to Architect.
   1. Format: One (1) set of film positive reproducibles and two (2) sets black lines of approved reproducibles.
   2. Provide the Owner with one (1) set of Record Drawings on a non-rewritable CD in AutoCAD® latest release.
   3. Provide the Owner with one (1) set of Record Drawings on a on a non-rewritable CD in PDF format.
   4. Label electronic CAD files and PDF files in the same manner as the sheets (example, A1.01A - First Floor Area 'A', etc.)

1.11 EXTRA STOCK, MATERIALS AND MAINTENANCE PRODUCTS

A. Furnish extra stock, maintenance, and extra products in quantities specified in individual specification sections.

B. Deliver to Project site and place in location as directed by Owner; obtain signed receipt from Owner's authorized representative prior to final application for payment. Delivery of materials to, or obtaining receipt from anyone other than Owner's authorized representative may constitute breach of this requirement and may require delivery of additional materials at no cost to the Owner if original materials are misplaced.

C. Include signed receipts for delivery of extra stock and materials, including keys, with Closeout Documents.

1.12 WARRANTIES, CERTIFICATES AND BONDS

A. Definitions:
   1. Standard Product Warranties: preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
   2. Special Warranties: written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide coverage of specific defects, or both.

B. In accordance with the general warranty obligations under Paragraph 3.5 of the General Conditions as amended by the Supplementary Conditions, the General Contractor's warranty shall be for a period of one (1) year following the date of Substantial Completion, hereinafter called the one-year warranty period. The Contractors one-year general warranty shall include all labor, material and delivery costs required to correct defective material and installation. This warranty shall not limit the Owner's rights with respect to latent defects, gross mistakes, or fraud.

C. The Contractor's one-year warranty shall run concurrently with the one (1) year period for correction of Work required under Paragraph 12.2 of the General Conditions.

D. No service charges or call out charges are allowed to investigate warranty claims.

E. In addition to the Contractors one-year warranty, Special Warranties as described in individual specifications sections, shall extend the warranty period for the period specified without limitation in respect to other obligations which the Contractor has under the Contract Documents.

F. 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 the suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

G. Warranty Requirements:
   1. When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.
   2. When Work covered by a warranty has failed and been corrected by replacement or reconstruction, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

3. 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 defective Work regardless of whether the Owner ahs benefited from use of the Work through a portion of its anticipated useful service life.
4. 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.
5. 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 designated portion of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

H. Compile copies of each required warranty properly executed by the Contractor and the subcontractor, supplier, or manufacturer. Verify documents are in proper form, contain full information, and are notarized. Co-execute warranties, certificates and bonds when required and include signed warrantees with Closeout Documents submitted to the Architect.

I. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1.13 FINAL COMPLETION AND FINAL PAYMENT

A. Final Notice and Inspection:
1. When all items on the Punch List have been corrected, final cleaning has been completed, and installed work has been protected, submit written notice to the Architect that the Work is ready for final inspection and acceptance.
2. Upon receipt of written notice that the Work is ready for final inspection and acceptance, the Architect and Engineer will make final inspection.

B. Final Change Order: When the Project Closeout items described above are successfully completed and the Work is found acceptable to Architect/Engineer and Owner, a Final Change Order will be executed. This Change Order will include any Allowance adjustments as required by the Contract Documents.

C. Final Application for Payment: When all of the above items are successfully complete, submit to the Architect a final Application for Payment and request for release of retainage.

D. Release of Retainage: Release of retainage will not be authorized by the Architect until Contractor completes all requirements for close-out to the satisfaction of the Owner and Architect as described herein.

1.14 TERMINAL INSPECTION

A. Immediately prior to expiration of the one (1) year period for correction of the Work, the Contractor shall make an inspection of the work in the company of the Architect and the Owner. The Architect and the Owner shall be given not less than ten (10) days notice prior to the anticipated date of terminal inspection.

B. Where any portion of the work has proven to be defective and requires replacement, repair or adjustment, the Contractor shall immediately provide materials and labor necessary to remedy such defective work and shall execute such work without delay until completed to the satisfaction of the Architect and the Owner, even if the date of

completion of the corrective work may extend beyond the expiration date of the correction period.

C. The Contractor shall not be responsible for correction of work which has been damaged because of neglect or abuse by the Owner nor the replacement of parts necessitated by normal wear in use.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

CLOSE OUT FORM "A"

SUBCONTRACTOR'S AFFIDAVIT OF RELEASE OF LIEN

STATE OF _____

COUNTY OF _____

KNOW ALL MEN BY THESE PRESENTS:

_____, being first duly sworn, deposes and says:

1. That he / she is the _____ of _____, the subcontractor who supplied, installed, and /or erected the work described below, and that, he /she is duly authorized to make this Affidavit and Subcontractor Release:

   Project: Biology Lab Upgrades and Renovations
   Owner: College of the Mainland Architect: PBK

   Work Performed: _____ Specification Section(s): _____

2. That all work required under the subject subcontractor of the subject construction project has been performed in accordance with the terms thereof, that all material men, sub-subcontractors, mechanics, and laborers have been paid and satisfied in full and that there are no outstanding claims of any character arising out of the performance of said subcontractor which have not been paid and satisfied in full.

3. That to the best of his / her knowledge and belief, there are no unsatisfied claims for damages resulting from injury or death to any employees, sub-subcontractors, or the public at large arising out of the performance of said subcontract, or any suits or claims for any other damages of any kind, nature, or description which might constitute a lien upon the property of the Owner.

4. That he / she has received full payment of all sums due him / her for materials furnished and services rendered by the undersigned in connection with the performance of said subcontract and has and does hereby release the Owner and the Architect and his consultants and the Contractor from any and all claims of any character arising out of or in any way connected with performance of said subcontract.

ATTEST (If Corporation)

_____
Name of Subcontractor

_____ _____
Secretary (By) (Title)

JURAT

STATE OF _____

COUNTY OF _____

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

_____
(Seal) (Notary Public Signature)

CLOSE OUT FORM "B"

CERTIFICATION OF PROJECT COMPLIANCE

Completion of this form is required under the provisions of §61.1036(c)(3)(F) TAC for all public school district construction projects. Instructions for completion of this form can be found on page 2.

1. PROJECT INFORMATION

Facility: Biology Lab Upgrades and Renovation

Address: 1200 Amburn Road

City: Texas City, Texas

OWNER: College of the Mainland

ARCHITECT/ENGINEER: PBK

CONTRACTOR/CM:

CONTRACT DATE:

DATE DISTRICT AUTHORIZED PROJECT:

BRIEF DESCRIPTION OF PROJECT:

2. CERTIFICATION OF DESIGN AND CONSTRUCTION

The intent of this document is to assure that the college has provided to the architect/engineer the required information and the architect/engineer has reviewed the College Facilities Standards as required by the State of Texas, and used his/her reasonable professional judgment and care in the architectural/engineering design and that the contractor has constructed the project in a quality manner in general conformance with the design requirements and that the school district certifies to project completion.

3. The Owner certifies that the educational program and the educational specifications of this facility along with the identified building code to be used have been provided to the architect/engineer.

DISTRICT: **BY:** **DATE:**

4. The Architect/Engineer certifies the above information was received from the school district, and that the building(s) were designed in accordance with the applicable building codes. Further, the facility has been designed to meet or exceed the design criteria relating to space (minimum square footage), educational adequacy, and construction quality as contained in the School Facilities Standards as adopted by the Commissioner of Education, June 9, 2003, and as provided by the district.

ARCHITECT/ENGINEER: **BY:** **DATE:**

5. The Contractor/CM certifies that this project has been constructed in general conformance with the construction documents as prepared by the architect/engineer listed above.

CONTRACTOR/CM: **BY:** **DATE:**

6. The Owner certifies completion of the project (as defined by the architect/engineer and contractor).

OWNER: **BY:** **DATE:**

INSTRUCTIONS FOR COMPLETION OF "CERTIFICATION OF PROJECT COMPLIANCE" FORM

Section 1. Identify the following:
- – name and address of the facility
- – name of the college
- – the Architect/Engineer and Contractor
- – the date of execution of the construction contract
- – the date that the school district authorized the superintendent to hire an architect/engineer
- – scope of the project.

Section 2. This section outlines the intent of the document. No action required.

Section 3. This section is to be executed by the school district upon transmittal of the information (as listed) to the architect/engineer and is to remain in the custody of the school district throughout the entire project.

Section 4. This section is to be executed by the architect/engineer upon completion of the plans and specifications and in conjunction with the completion of the plan review for code compliance (ref. 19 TAC §61.1033 or §61.1036, School Facilities Standards) and returned to the school district's files.

Section 5. This section is to be executed by the contractor upon substantial completion of the project and retained in the school district's files.

Section 6. This section is to be executed by the school district upon acceptance and occupancy of the project.

NOTE: DO NOT SUBMIT THIS DOCUMENT TO THE TEXAS EDUCATION AGENCY. The college will retain this document in their files indefinitely until review and/or submittal is required by representatives of the Texas Education Agency.

CLOSE-OUT FORM "C"

SUBCONTRACTOR HAZARDOUS MATERIAL CERTIFICATE

THE STATE OF _____

COUNTY OF _____

PROJECT: Biology Lab Upgrades and Renovations

OWNER: College of the Mainland

ARCHITECT: PBK

SPECIFICATION SECTION(S):

KNOW ALL MEN BY THESE PRESENTS:

_____, being first duly sworn, deposes and says that he / she is the _____ of _____,the subcontractor / supplier who constructed or provided the section(s) of work referenced above, and that he / she is duly authorized to certify to the best of his / her information, knowledge, and belief no asbestos, lead or PCB containing products have been incorporated into the project.

ATTEST (If Corporation)

_____
Name of Subcontractor / Supplier

_____ _____
Secretary (By) (Title)

JURAT

THE STATE OF _____

COUNTY OF _____

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

_____
(Seal) (Notary Public Signature)

CLOSE-OUT FORM "D"

SUBCONTRACTOR WARRANTY

STATE OF _____

COUNTY OF _____

KNOW ALL MEN BY THESE PRESENTS:

_____, being first duly sworn, deposes and says:

1. That he / she is the Subcontractor (or the _____of_____ the subcontractor) who supplied, installed, and / or erected the work described below, and that, he / she is duly authorized to make this Subcontractor Warranty:

   Project: Biology Lab Upgrades and Renovations
   Owner: College of the Mainland Architect: PBK

   Work Performed: _____Specification Section(s): _____

2. The undersigned Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract are of good quality and new except where otherwise required or permitted by the Contract Documents, that the Work is free from defects not inherent in the quality required or permitted, and that the Work conforms with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Subcontractor's warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Subcontractor, improper or insufficient maintenance, improper operation, or normal wear and tear under normal usage.

3. In the event of failure of materials, products, or workmanship, during the specified warranty periods, the Subcontractor shall take appropriate measures to assure correction or replacement of the defective items, whether notified by the Contractor, Owner or Architect.

4. The Subcontractor warrants the work performed for a period of _____ months from the date of Substantial Completion, except as follows:_____

   _____

ATTEST (If Corporation) _____
Name of Subcontractor

_____
Secretary (By) (Title)

JURAT

STATE OF _____

COUNTY OF _____

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

_____
(Seal) (Notary Public Signature)

SECTION 01 78 39

PROJECT RECORD DOCUMENTS

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Architects/Engineers written responses to Minor Change directives, Change Proposal Requests, and other supplemental instructions.
   5. Change Orders and other modifications to the Contract.
   6. Reviewed Shop Drawings, Product Data, and Samples.
   7. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner. Architect will review documents for general conformance but will not be responsible for completeness or accuracy of the recorded information.

C. Do not use record documents for construction purposes. Store record documents separate from documents used for construction. Protect record documents from deterioration and loss in a secure, weather-tight location in accordance with Section 01 50 00, Temporary Facilities.

D. Record information concurrent with construction progress, not less than weekly. Provide access to record documents for Architect’s reference during normal working hours.

E. Give particular attention to information on concealed products and installations that would be difficult to identify or measure and record later.

F. Mark record sets in red erasable colored pencil; use other colors to distinguish between changes for different categories of the Work at the same location.
   1. Mark important additional information which was either shown schematically or omitted from original Documents.
   2. Note construction change directive numbers, alternate numbers, Change Order numbers and similar identification.
   3. Where feasible, the individual or entity who obtained record data, whether the individuals or entity is the installer, subcontractor, or similar entity, is required to prepare the mark-up on record documents.
      a. Accurately record information in an understandable drawing technique.
      b. Record data as soon as possible after it has been obtained. In the case of concealed installations, record and check the mark-up prior to concealment.

G. Accurately record information in an understandable drawing technique.

H. Record data as soon as possible after it has been obtained. In the case of concealed installations, record and check the mark-up prior to concealment.
   1. Sign or initial and date each mark-up.

I. Upon completion of the Work, submit Project Record Documents to Architect for the Owner's records in accordance with Section 01 77 00, Closeout Procedures.

1.2 RECORD SPECIFICATIONS

A. Record Specifications: Maintain one complete copy of the Project Manual including addenda and modifications issued. Legibly mark and record at each product section a description of actual products installed and variations in actual Work performed in comparison with products specified. Include the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.
   3. Changes made by addenda and modifications.
   4. Related record drawing information and Product Data.
   5. Other information necessary to provide a record of selections made and to document coordination with record Product Data submittals and maintenance manuals.

B. Format: Submit record Specifications as bookmarked, searchable, annotated PDF electronic file.

1.3 RECORD DRAWINGS

A. Record Drawings: Maintain one complete blackline copy of the Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies from the Work as originally shown.
   1. Legibly mark each item to record actual construction including, but not limited to the following:
      a. Measured depths of foundations in relation to project finish floor datum.
      b. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
      c. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
      d. Field changes of dimension and detail.
      e. Details not on original Contract drawings.
      f. Revisions to details shown on the drawings.
      g. Dimensional changes to the drawings.
      h. Actual equipment locations.
      i. Duct size and routing.
      j. Changes made by Change Order; include change order number.

B. Mark completely and accurately record prints of Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions. Where Shop Drawings are marked to reflect changes in the Work, record a cross-reference at the corresponding location on the Contract Drawings.

C. Preparation of Transparencies: Prepare a full set of corrected reproducible Contract Drawings and Shop Drawings.
   1. Incorporate changes and additional information previously marked on print sets. Erase, redraw, and add details and notations where applicable. Identify and date each Drawing; include the printed designation "PROJECT RECORD DRAWINGS" in a prominent location on each Drawing.
   2. Remove Architects and Engineer's seal from drawings and specifications prior to issuance to Architect for approval.
   3. Refer instances of uncertainty to the Architect for resolution.

4. Final Record Drawing mark ups, revisions, and authorized changes are to be incorporated into AutoCAD working files as prescribed in 01 77 00.

1.4 RECORD PRODUCT DATA

A. Maintain one copy of each Product data submittal for record document purposes. Mark Product Data to indicate the actual product installation. Include significant changes in the product delivered to the site, and changes in manufacture's instructions and recommendations for installation.

1.5 RECORD SAMPLE SUBMITTAL

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 Specifications, and record Drawings where applicable.

B. Format: Submit record Product Data as bookmarked, searchable, annotated PDF electronic file.
   1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

1.6 MISCELLANEOUS RECORD DOCUMENTS

A. Refer to other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Immediately prior to Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use and reference. Categories of requirements resulting in miscellaneous records, include, but are not limited to the following:
   1. Ambient and substrate condition tests.
   2. Changes requested by Owner's consultants.
   3. Inspections and certifications by governing authorities.
   4. Inspection and testing by Owner's inspection agency.
   5. Fire resistance and flame spread test results.

1.7 CERTIFICATION

A. By submittal of Project Record Documents, Contractor certifies, that to the best of his knowledge, informational and belief the documents are a true and complete representation of the actual construction of the Work of this Project.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 02 41 19 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes: Requirements including but not limited to:
   1. Demolition and removal of selected portions of building or structure.
   2. Salvage of existing items to be reused or recycled.
   3. Accessories necessary for demolition and deconstruction.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and dispose offsite unless indicated as salvaged or reinstallation.

B. Remove and Salvage: Detach items from existing construction with care to prevent damage, and deliver to Owner ready for reuse.

C. Remove and Reinstall: Detach items from existing construction with care to prevent damage, clean and refurbish, prepare for reuse, store as necessary, and reinstall where indicated.

D. Existing to Remain: Leave existing items that are not scheduled for salvage or reuse, as is; do not remove.

E. Deconstruct: To remove by disassembling or detaching an item from a surface, using methods and equipment to successfully prevent damage to the item and surfaces; and dispose of items unless indicated as salvaged or for reinstallation.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and the contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner. Salvage to prevent damage and promptly return to Owner.

1.5 SUBMITTALS

A. Qualification Data: Submit copies of qualifications for refrigerant recovery technician.

B. Engineering Survey: Submit engineering survey of condition of building.

C. Proposed Protection Measures: Submit report, including Drawings, indicating proposed measures for protecting individuals and property, for environmental protection, dust control and noise control. Indicate proposed locations, types, and construction of barriers.

D. Schedule of Selective Demolition Activities:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Use of elevator and stairs.
5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

E. Inventory: Submit a list of items for removal and salvage and deliver to Owner prior to start of demolition.

F. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces that could be construed as damage caused by demolition operations. Comply with Section 013230. Submit prior to commencement of the work.

G. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.6 QUALITY ASSURANCE

A. Regulatory Requirements:
1. Demolition Standards: Comply with ASSE A10.6 and NFPA 241.
2. Comply with EPA regulations prior to commencement of the work. Comply with hauling and disposal regulations of authorities having jurisdiction.
3. Comply with applicable federal, state, and local codes for demolition work, dust and noise control, safety of structure, and debris removal.
4. Obtain required permits from authorities having jurisdiction.

B. Refrigerant Recovery Technician Qualifications: Certified by an EPA approved certification program.

C. Predemolition Conference: Conduct conference at the site.
1. Inspect and discuss condition of construction to be selectively demolished.
2. Review structural load limitations of existing structure.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.

1.7 FIELD CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted. Provide minimum of 72 hours' notice to Owner of demolition activities that will affect Owner's operations including but not limited to:
1. Interruption of power.
2. Interruption of utility services.
3. Excessive noise.

B. Condition of Structure: Conditions existing at time of inspection will be maintained by Owner as far as practical. Owner assumes no responsibility for actual condition of items or structures to be demolished.
1. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

2. Before commencing selective demolition, Owner will remove the following items:

C. Hazardous Materials: It is not anticipated that hazardous materials will be encountered in the Work.
1. Hazardous materials will be removed by Owner before start of the Work.
2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

D. Historic Areas: Demolition and hauling equipment and other materials shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by at least 12 inches (300 mm).

E. Storage or sale of removed items or materials on site is not permitted.

F. Traffic: Conduct operations and debris removal to ensure minimum interference with roads, streets, drives, fire lanes, walks, accessible paths, and adjacent occupied or used facilities.
1. Do not close, block, or obstruct streets, drives, walks, or occupied or used facilities without written permission from authorities having jurisdiction. Provide alternate routes around obstructed traffic ways.

G. Explosives: Explosives are not permitted at the site.

H. Flame Cutting: Do not use cutting torches for removal until flammable materials are removed. At concealed spaces, verify conditions prior to flame cutting operations. Maintain portable fire suppression devices during flame cutting operations.

I. Environmental Controls: Use water sprinkling, temporary enclosures, or other acceptable methods to limit dust and dirt migration. Comply with governing regulations pertaining to environmental protection. Do not use water when it may create hazardous or objectionable conditions.

J. Utility Services: Maintain existing utilities and protect 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, acceptable to Owner and governing authorities.

K. Protections: Provide temporary barriers to protect Owner's personnel and public from injury from work.
1. Take protective measures to provide free and safe passage to occupied portions of building.
2. Provide protection to ensure safe passage of the Owner’s personnel and the public around demolition areas and to and from occupied portions of adjacent areas, buildings, and structures.
3. Provide 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 existing work which becomes exposed during demolition operations.
    a. Protect existing improvements, appurtenances, and conditions to remain.
    b. Protect adjacent floors with coverings.
    c. Protect walls, openings, roofs, and adjacent exterior construction to remain and exposed to building demolition operations.

5. Construct temporary insulated dustproof partitions to separate areas from noisy or extensive dirt or dust operations are performed. Equip partitions with dustproof doors and security locks.
6. Provide temporary weather protection when exposing exterior conditions to prevent water leakage or damage to structure or interior areas of existing building.

L. Damages: Promptly repair damages caused to adjacent facilities by demolition work.

1.8 COORDINATION

A. Arrange selective demolition schedule to avoid interference with Owner's and the school's operations.

1.9 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties. Notify warrantor prior to proceeding.

B. Notify warrantor on completion of selective demolition, and obtain documentation verifying existing system has been inspected and warranty remains in effect. Submit supporting documentation at closeout.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Repair Materials: Use repair materials identical to existing materials.
1. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
2. Use materials whose installed performance equals or surpasses that of existing materials.

B. Comply with material and installation requirements specified in individual Specification Sections.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that affected utilities have been disconnected and capped before commencing selective demolition operations.

B. Review Project Record Documents of existing construction or existing condition and hazardous material information provided by Owner. Owner does not warrant existing conditions are same as those indicated in Project Record Documents.

C. Perform an engineering survey of condition of building to determine whether removing an element might result in structural deficiency or unplanned collapse of a portion of structure or adjacent structures during selective building demolition operations.
1. Perform surveys as the work progresses to detect hazards resulting from selective demolition activities.

D. Verify that hazardous materials have been remediated before proceeding with building demolition operations.

E. Survey of Existing Conditions: Record existing conditions with measured drawings or preconstruction photographs or video and templates.
   1. Comply with requirements specified in Division 01.
   2. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
   3. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2 PREPARATION

A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

B. Pest Control: Employ certified, licensed exterminator to treat building and to control rodents and vermin before and during selective demolition operations.

C. Site Access and Temporary Controls: Conduct selective demolition and debris removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities. Comply with requirements for access and protection.

D. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
   1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
   2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
   3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
   4. Cover and protect furniture, furnishings, and equipment that have not been removed.
   5. Comply with requirements for temporary enclosures, dust control, heating, and cooling.

E. Furnishings and Equipment: Cover and protect furniture, equipment, and fixtures from spoilage or damage as necessary.

F. Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.
   1. Construct dustproof partitions of not less than nominal 4 inch (100mm) studs, 5/8 inch (16mm) gypsum wallboard with joints taped on occupied side, and 1/2 inch (13mm) fire retardant plywood on the demolition side.
   2. Insulate partition to provide noise protection to occupied areas.
   3. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
   4. Protect air handling equipment.
   5. Weatherstrip openings to prevent the spread of dust.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect against damage.

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
2. Arrange to shut off utilities with utility companies.
3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
4. Disconnect, demolish, and remove fire suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
   a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
   b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
   c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
   d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
   e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.

3.4 POLLUTION CONTROLS

A. Dust Control: Use water mist, temporary enclosures, and suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations.
   1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
   2. Wet mop floors to eliminate trackable dirt and wipe down walls and doors of demolition enclosure. Vacuum carpeted areas.

3.5 PROTECTION

A. Temporary Protection: Provide temporary barricades and protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
   1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
      a. Provide temporary barricades and protection required to prevent injury and damage to adjacent buildings and facilities to remain.

   2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
   3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
      a. Protect existing work which becomes exposed during demolition operations.
      b. Protect adjacent entrances from damage due to demolition activities.
      c. Protect existing improvements, appurtenances, and conditions to remain.
      d. Protect floors with covering.

   4. Cover and protect furniture, furnishings, and equipment that have not been removed.
   5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000.
      a. Protect air handling equipment.
      b. Weatherstrip openings.

   6. Damage: Promptly repair damages to adjacent components cause by demolition activities.

B. Remove temporary barricades and protections where hazards no longer exist.

3.6 SELECTIVE DEMOLITION

A. Demolish and remove existing construction to the extent necessary for new work. Use methods required to complete the work within limitations of governing regulations and as follows:
   1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
   2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
   3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame cutting operations. Maintain portable fire suppression devices during flame cutting operations.
   4. Maintain fire watch during and for at least 24 hours after flame cutting operations.
   5. Maintain adequate ventilation when using cutting torches.
   6. Remove decayed, vermin infested, and dangerous or unsuitable materials and promptly dispose of offsite.
   7. Locate selective demolition equipment and remove debris and materials to avoid imposing excessive loads on supporting walls, floors, or framing.
   8. Dispose of demolished items and materials promptly.

B. Site Access and Temporary Controls: Conduct selective demolition and debris removal operations to ensure minimum interference with roads, streets, walks, walkways, and adjacent occupied and used facilities.

C. Removed and Salvaged Items: Remove items indicated for salvage. Clean and pack or crate items after cleaning. Identify contents of containers. Store items in secure area until delivery to Owner.
   1. Transport items to Owner's storage area designated by Owner. Protect items from damage during transport and storage.

D. Removed and Reinstalled Items: Clean and repair items to functional condition adequate for intended reuse.
   1. Pack or crate items after cleaning and repairing. Identify contents of containers.
   2. Protect items from damage during transport and storage.
   3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Owner, items may be removed to a suitable, protected storage location during selective demolition, cleaned, and reinstalled in original locations after selective demolition operations are complete.

F. Patching and Repair: Repair damage to adjacent construction caused by selective demolition operations promptly.

3.7 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI *Recommended Work Practices for the Removal of Resilient Floor Coverings*. Do not use methods requiring solvent-based adhesive strippers**.**

B. Partitions: Completely remove indicated interior partitions and interior finishes indicated. Leave adjacent work scheduled to remain sound and ready for patching or for new finishes.

C. Doors and Frames: Remove doors, frames, and hardware where indicated. Remove from site.
   1. Remove doors, frames, and hardware where indicated. Clean, store, and protect for reinstallation or return hardware to Owner as directed.

D. Mechanical, Electrical, and Structural Elements: If unanticipated mechanical, electrical, or structural elements conflicting with intended function or design are encountered, investigate and measure both nature and extent of the conflict.
   1. Submit written report to Architect in accurate detail. Pending receipt of directive, rearrange selective demolition schedule as necessary to continue overall job progress without undue delay.

3.8 PATCHING AND REPAIRS

A. Promptly repair damage to adjacent construction caused by selective demolition operations.

B. Patching: Comply with Section 01 73 29.

C. Repairs: When necessary to repair to existing surfaces, patch to produce surfaces suitable for new materials.
   1. Fill holes and depressions in existing masonry walls to remain with masonry patching material applied according to manufacturer's written recommendations.

D. Finishes: Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

E. Floors and Walls: Where walls or partitions are demolished, extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
   1. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
   2. Where patching occurs in a painted surface, apply primer and intermediate paint coats over patch and apply final paint coat over entire unbroken surface containing patch. Provide additional coats until patch blends with adjacent surfaces.
   3. Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

3.9 DISPOSAL OF DEMOLISHED MATERIALS

A. Legally remove demolition waste materials from site and dispose in an EPA approved construction and demolition waste landfill acceptable to authorities having jurisdiction recycle or reuse components.
   1. Do not allow demolished materials to accumulate on site.
   2. Remove and transport debris to prevent spillage on adjacent surfaces and areas.
   3. Remove debris from elevated portions of building by chute, hoist, or devices that conveys debris to grade level in a controlled descent.
   4. Comply with requirements specified in Section 01 74 00.

B. Burning: Do not burn demolished materials.

3.10 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 02 41 19

SECTION 06 10 53 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes: Requirements including but not limited to:
   1. Framing with dimension lumber.
   2. Wood furring and grounds.
   3. Wood sleepers.
   4. Accessories necessary for a complete installation.
   5. Plywood backing panels.
   6. Accessories necessary for a complete installation.

1.3 DEFINITIONS

A. Boards or Strips: Lumber of less than 2 inches nominal (38 mm actual) size in least dimension.

B. Dimension Lumber: Lumber of 2 inches nominal (38 mm actual) or greater size but less than 5 inches nominal (114 mm actual) size in least dimension.

1.4 SUBMITTALS

A. Product Data: Submit each type of process and factory fabricated product. Indicate component and materials and dimensions and include construction and application details.
   1. Wood Treatment: Submit data for wood preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
      a. Include data for fire retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by qualified independent testing agency.
      b. For fire retardant treatments, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5664.
      c. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to site.

B. Laboratory and Testing Reports:
   1. Laboratory Test Reports: Submit report for installation adhesives indicating compliance with requirements for low emitting materials.
   2. Post installed anchors.
   3. Metal framing anchors.

1.5 QUALITY ASSURANCE

A. Regulatory Requirements:

1. Building Code: Comply with applicable requirements of IBC Chapter 23 for miscellaneous wood.
2. Fire Retardant Treated Lumber and Plywood by Pressure Process: Provide 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.

B. Source Limitations: Obtain each type of engineered wood product from single source from a single manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded 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.
4. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.

B. 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.
2. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.
3. Kiln dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.
4. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece.
5. Application: Treat items indicated on Drawings, and the following:
    a. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
    b. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.

C. Fire Retardant Treatment: Where indicates as fire retardant treated, provide materials acceptable to authorities having jurisdiction, and with fire test response characteristics specified as determined by testing identical products per ASTM E 84 by a qualified testing agency.
1. Treatment shall not promote corrosion of metal fasteners.

2. Exterior Type: Comply with specified requirements 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.
3. Interior Type A: Provide treated materials with 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.
4. Design Value Adjustment Factors: Test treated lumber according to ASTM D 5664, and calculate design value adjustment factors according to ASTM D 6841.
    a. For enclosed roof framing, framing in attic spaces, and where high temperature fire retardant treatment is indicated, provide material with adjustment factors of minimum 0.85 modulus of elasticity and 0.75 for extreme fiber in bending for climatological zone.
5. Kiln dry lumber after treatment to a maximum moisture content of 19 percent.
6. Identify fire retardant treated wood with appropriate classification marking of qualified testing agency.
    a. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece.
7. For exposed items indicated to receive a stained or natural finish, verify chemical formulations shall not bleed through, contain colorants, or adversely affect finishes.
8. Application: Treat items indicated on Drawings, and the following:
    a. Framing for raised platforms.
    b. Concealed blocking.
    c. Roof framing and blocking.
    d. Wood cants, nailers, curbs, equipment support bases, blocking, and similar members in connection with roofing.
    e. Plywood backing panels.

D. Dimension Lumber Framing:
1. Non Load Bearing Interior Partitions: Construction or No. 2 grade of any species.
2. Other Framing: Construction or No. 2 grade of any species.

E. Miscellaneous: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including but not limited to blocking, nailers, cants, grounds, furring, roof top equipment bases and support curbs, and utility shelving.
1. For items of dimension lumber size, provide Construction or No. 2 grade lumber with 19 percent maximum moisture content of any species.
2. For blocking not used for attachment of other construction, use Utility, Stud, or No. 3 grade lumber of any species provided that it is cut and selected to eliminate defects that interfere with attachment and purpose.
3. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that interfere with attachment of work.
4. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.
5. Utility Shelving: Lumber with 19 percent maximum moisture content of any of the following species and grades:
    a. Eastern white pine, Idaho white, lodgepole, ponderosa, or sugar pine; Premium or No. 2 Common (Sterling) grade; NeLMA, NLGA, WCLIB, or WWPA.
    b. Mixed southern pine or southern pine No. 2 grade; SPIB.
    c. Spruce-pine-fir (south) or spruce-pine-fir, Construction or No. 2 Common grade; NeLMA, NLGA, WCLIB, or WWPA.

F. Concealed Boards: 19 percent maximum moisture content of any of the following species and grades:
1. Mixed southern pine or southern pine, No. 2 grade; SPIB.
2. Spruce-pine-fir (south) or spruce-pine-fir, Construction or No. 2 Common grade; NeLMA, NLGA, WCLIB, or WWPA.

3. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
4. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.
5. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

G. Plywood Backing Panels:
1. Equipment Backing Panels: Plywood, DOC PS 1, Exterior, C-C Plugged or Exposure 1, C-D Plugged, fire retardant treated, in thickness not less than 3/4 inch (19 mm)] nominal thickness.

H. Fasteners: Provide fasteners of size and type indicated that comply with requirements.
1. Where carpentry is exposed to weather, in ground contact, pressure preservative treated, or in area of high relative humidity, provide fasteners with hot dip zinc coating complying with ASTM A 153/A 153M.
2. Nails, Brads, and Staples: ASTM F 1667.
3. Screws for Fastening to Metal Framing: ASTM C 1002 drywall type or ASTM C 954 nonload bearing steel stud, length recommended by screw manufacturer for material being fastened.
4. Power Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
5. Post Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01 mechanical, masonry, ICC-ES AC58 mechanical, concrete, ICC-ES AC193 adhesive, masonry, or ICC-ES AC308 adhesive, concrete as appropriate for the substrate.
    a. Material, Interior: Carbon steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
    b. Material, Exterior: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2 (ASTM F 738M and ASTM F 836M, Grade A1 or A4).

I. Metal Framing Anchors:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. Cleveland Steel Specialty Co.
    b. KC Metals Products, Inc.
    c. Phoenix Metal Products, Inc.
    d. Simpson Strong-Tie Co., Inc.
2. Galvanized Steel Sheet: Hot dip, zinc coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation. Use for interior locations unless otherwise indicated.
3. 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. Use for wood preservative-treated lumber and where indicated.
4. Stainless Steel Sheet: ASTM A 666, Type 304 and Type 316 for exposed application in coastal environments. Use for exterior locations and where indicated.

J. Miscellaneous Materials:
1. Adhesives for Gluing to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.
2. Flexible Flashing: Composite, self adhesive, flashing product consisting of a pliable, butyl rubber or rubberized asphalt compound, bonded to high density polyethylene film,

aluminum foil, or spunbonded polyolefin to produce overall thickness of not less than 0.025 inch (0.6 mm).

PART 3 - EXECUTION

3.1 INSTALLATION

A. Framing Standard: Comply with AF&PA WCD 1 *Details for Conventional Wood Frame Construction* unless otherwise indicated.

B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry accurately to other construction. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

C. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels.
   1. Install fire retardant treated plywood backing panels with classification marking of testing agency exposed to view.

D. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

E. Do not splice structural members between supports unless otherwise indicated.

F. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
   1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches (406 mm) o.c.

G. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:
   1. Fire block furred spaces of walls, at each floor level, at ceiling, and at not more than 96 inches (2438 mm) o.c. with solid wood blocking or noncombustible materials accurately fitted to close furred spaces.
   2. Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top story, and at not more than 96 inches (2438 mm) o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and 2-inch nominal (38-mm actual) thickness.
   3. Fire block concealed spaces between floor sleepers with same material as sleepers to limit concealed spaces to not more than 100 sq. ft. (9.3 sq. m) and to solidly fill space below partitions.
   4. Fire block concealed spaces behind combustible cornices and exterior trim at not more than 20 feet (6 m) o.c.

H. Sort and select lumber so natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

I. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative treated lumber.
   1. Use inorganic boron for items that are continuously protected from liquid water.
   2. Use copper naphthenate for items not continuously protected from liquid water.

J. Where wood preservative treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

K. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
1. Table 2304.9.1 *Fastening Schedule* in the International Building Code.
2. ICC-ES evaluation report for fastener.

L. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

M. Wood Blocking and Nailer Installation: Install where indicated and where required for screeding or attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
1. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.
2. Provide permanent grounds of dressed, pressure preservative treated, key beveled lumber not less than 1-1/2 inches (38 mm) wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

3.2 SITE ENVIRONMENTAL PROCEDURES

A. Indoor Air Quality: Temporary ventilation: Provide temporary ventilation during work. During and immediately after installation of treated wood, engineered wood products, and laminated wood products at interior spaces, provide temporary ventilation.

B. Waste Management: Refer to Section 017400 and Construction Waste Management Plan:
1. Select lumber sizes to minimize waste; reuse scrap lumber to the greatest extent possible. Clearly separate scrap lumber for use on site as accessory components, including: shims, bracing, and blocking.
2. Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill.
3. Prevent saw dust and wood shavings from entering the storm drainage system.
4. Do not burn scrap lumber that has been pressure treated.
5. Do not send lumber treated with pentachlorophenol, CCA, or ACA to cogeneration facilities or waste to energy facilities.

3.3 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 miscellaneous rough carpentry from weather. If, despite protection, miscellaneous rough carpentry becomes wet, apply EPA registered borate treatment. Apply borate solution by spraying to comply with EPA registered label.

END OF SECTION 06 10 50

SECTION 06 40 00 - ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes: Requirements including but not limited to:
   1. Plastic laminate cabinets.
   2. Plastic laminate countertops.
   3. Plastic laminate panels.
   4. Standing and running trim
   5. Shop finishing.
   6. Accessories necessary for a complete installation.

1.3 DEFINITIONS

A. Architectural woodwork includes wood furring, blocking, shims, and hanging strips for installing woodwork items unless concealed within other construction before woodwork installation.

1.4 SUBMITTALS

A. Product Data: Technical data for each type of product indicated including cabinet hardware and accessories.
   1. Include data for fire retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.

B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
   1. Show details full size.
   2. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
   3. Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, and other items installed in architectural woodwork.

C. Samples:
   1. Lumber with or for transparent finish, not less than 5 inches 125 mm wide by 24 inches 600 mm long, for each species and cut, finished on 1 side and 1 edge.
   2. Veneer faced panel products with or for transparent finish, 8 inches by 10 inches200 by 250 mm, for each species and cut. Include at least one face veneer seam and finish as specified.
   3. Lumber and panel products with shop applied finish, 50 sq. in. 300 sq. cm for lumber and 8 inches by 10 inches 200 mm by 250 mm for panels, for each finish system and color, with 1/2 of exposed surface finished.
   4. Plastic laminates, 8 inches by 10 inches200 mm by 250 mm, for each type, color, pattern, and surface finish and specified edge material applied to 1 edge.
   5. Corner pieces:
      a. Cabinet front frame joints between stiles and rails, as well as exposed end pieces, 18 inches 450 mm high by 18 inches 450 mm wide by 6 inches 150 mm deep.

6. Exposed cabinet hardware and accessories, one unit for each type and finish.

D. Qualification Data: For Fabricator/Installer.

E. Woodwork Quality Standard Compliance Certificates: AWS Quality Certification Program certificates.

1.5 QUALITY ASSURANCE

A. Regulatory Requirements:
1. Building Code: Comply with applicable requirements of IBC Chapter 8 for Interior Finishes.
2. Accessibility:
   a. American Disabilities Act Accessibility Guidelines (ADAAG) for Buildings and Facilities; Final Guidelines and revisions.
   b. Comply with applicable requirements of ANSI A117.1 for accessibility.
   c. Texas Accessibility Standards (TAS) 2012.
3. Quality Standard: Unless otherwise indicated, comply with AWI *Architectural Woodwork Quality Standards* for premium grade architectural woodwork indicated for construction, finishes, installation, and requirements. Provide certified compliance labels and certificates indicating woodwork, including installation, complies with requirements of grades specified.
4. Fire Test Response Characteristics: Where fire retardant materials or products are indicated, provide materials and products with specified fire test response characteristics determined by testing identical products per test method indicated by UL. Identify with appropriate markings of applicable testing and inspecting agency in the form of separable paper label or, where required by authorities having jurisdiction, imprint on surfaces of materials that will be concealed from view after installation.

B. Fabricator Qualifications: Shop having minimum 5 years documented experience who employs skilled workers who custom fabricate products similar to those required and who is a participating member of AWI or WI.
1. NonAWI or NonWI Fabricator: Shop having minimum 10 years documented experience in the manufacturer of architectural wood work, who employs skilled workers who custom fabricates products, and who certifies in writing the woodwork products comply with AWS Architectural Woodwork Standards.

C. Source Limitations: Engage a qualified woodworking firm to assume undivided responsibility for production of interior architectural woodwork with sequence matched wood veneers and transparent finished wood doors that are required to be of same species as woodwork.

D. Quality Standard: Unless otherwise indicated, comply with AWS *Architectural Woodwork Standards,* 2nd Edition for grades of architectural woodwork indicated for construction, finishes, installation, and requirements.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver woodwork until painting and similar operations that could damage woodwork is completed in installation areas. If woodwork must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Project Conditions" Article.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

B. Field Measurements: Where woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
   1. Locate concealed framing, blocking, and reinforcements that support woodwork by field measurements before being enclosed, and indicate measurements on Shop Drawings.
   2. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating woodwork without field measurements. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

1.8 COORDINATION

A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that interior architectural woodwork supported and installed as indicated.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Provide materials that comply with requirements of AWI quality standard for each type of woodwork and quality grade specified, unless otherwise indicated.

B. Wood Products:
   1. Hardboard: AHA A135.4.
   2. Medium Density Fiberboard: ANSI A208.2, Grade MD, made with binder containing no urea formaldehyde; minimum 48 pcf density except that minimum for screw holding capacity on face shall be 300 pounds; minimum 3/4 inches (19 mm) thick, edged and faced as specified.
      a. Flakeboard; Vesta MDF.
      b. Great Lakes MDF; CleanTech Green MDF.
      c. Roseburg Forest Products, Inc.; Skyblend MDF Plus.
      d. SierraPine Ltd.; Medite II or Arreis.
   3. Particleboard: ANSI A208.1, Grade M-2, made with binder containing no urea formaldehyde, with minimum 45 pcf density except that minimum for screw holding capacity on face shall be 247 pounds; minimum 3/4 inch (19 mm) thick, edged and faced as specified.
   4. Softwood Plywood: DOC PS 1, Medium Density Overlay.

C. Lumber: Comply with applicable provisions for grading and workmanship of AWI Quality Standards, and requirements specified. Provide lumber surfaced 4 sides (S4S) and fabricated to profiles shown. Kiln dry lumber to 19% moisture content.
   1. Furring, Blocking, Shims: No. 1 Common; Southern Pine.
   2. Solid Hardwood for Opaque Finish: Plain sawn Yellow Poplar, free from checks, splits, sound knots.

D. Thermoset Decorative Panels: Particleboard or medium density fiberboard finished with thermally fused, melamine impregnated decorative paper complying with LMA SAT-1.

1. Provide PVC or polyester edge banding complying with LMA EDG-1 on components with exposed or semiexposed edges.

E. High Pressure Decorative Laminate: NEMA LD 3, grade indicated or as required by woodwork quality standard.
   1. Manufacturer: Subject to compliance with requirements, provide high pressure decorative laminates by one of the following:
      a. Abet Laminati, Inc.
      b. Formica Corporation.
      c. Panolam Industries International Incorporated.
      d. Wilsonart International; Div. of Premark International, Inc.

F. Solid Surfacing Material (Countertop): Homogeneous solid sheets of filled plastic resin complying with ISSFA-2 consisting of reacted monomers and resins, mineral fillers and pigments and manufactured in sheets.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. E. I. du Pont de Nemours and Company.
      b. Formica Corporation.

2.2 CABINET HARDWARE AND ACCESSORIES

A. Hardware Standard: Comply with BHMA A156.9 for items indicated by referencing BHMA numbers of items referenced to this standard. Provide cabinet hardware and accessory materials associated with architectural cabinets.

B. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, self closing.
   1. Provide 170 degree minimum opening capabilities. For end doors perpendicular to walls, provide 90 degree type.
   2. For doors 32 inches high or less, provide 2 pair of hinges, add 1/2 pair for every additional 20 inches.
   3. Products: Subject to compliance with requirements, provide one of the following:
      a. No. 326.05 by Hafele North America Co.
      b. No. B71650 by Julius Blum, Inc.
      c. No. MD61-253-Z00 by Mepla-Alfit, Inc.

C. Wire Pulls: Back mounted, solid metal, 5 inches 127 mm long, 2-1/2 inches 63.5 mm deep, and 5/16 inch 8 mm in diameter.

D. Catches: Magnetic, complying with BHMA A156.9, B03141 for single doors and B03161 for double doors.
   1. For Single Doors:
      a. CD41 Single Magnetic Cabinet Catch; Stanley Commercial Hardware.
   2. For Double Doors:
      a. 901; Rockwood Manufacturing Company.
      b. CD45 Double Magnetic Cabinet Catch; Stanley Commercial Hardware.

E. Cabinet Shelf Rests: Nickel plated 7 mm diameter shelf support pegs in brass sockets, complying with BHMA A156.9, B04013. Provide Hafele 282.01.701 x 282.50.704.

F. Closet Rods and Flanges: 1-1/2 inch diameter, satin finished chrome plated steel or satin finished stainless steel with matching end flanges.

G. Adjustable Shelf Standards and Brackets for Wall Hung Open Shelving: BHMA A156.9, B04071; with shelf rests, B04081.

1. Standards: Model No. 87ANO Extra Heavy Duty 87-187 Series; lengths as indicated, by Knape and Vogt.
2. Brackets: Model No. 187 LL ANO for 12 inch to 24 inch (300 mm to 600 mm) deep shelves by Knape and Vogt.
3. Shelf Rests: Model No. 210 ANO End Rest and Model No. 211 ANO Center Rest with Model No. 129 RUB Rubber Cushions.

H. Shelf Rests: BHMA A156.9, B04013; metal, two pin type with shelf hold down clip.

I. Silencers: Provide rubber silencers on jamb and/or head and sill strike areas of all cabinet doors and drawers, 2 for paired doors, and 3 for single doors. Size: Approximately 1/4 inch (6.4 mm) diameter. Color: Compatible with adjacent finish.

J. Drawer Slides: BHMA A156.9, B05091; provide positive stop, self closing side mounted, full extension, zinc plated steel drawer slides with steel ball bearings
1. Pencil Drawer Slides: Grade 1; for drawers not more than 3 inches 75 mm high and 24 inches 600 mm wide; Accuride 2006 having 3/4 extension carburized steel ball bearing, side mounting, 45 lbs. capacity medium duty load rating, cold rolled steel slide members and ball retainers, bright electro zinc plate finish.
2. Box Drawers (Less than 8 inches Deep): Grade 1HD-100; for drawers not more than 6 inches 150 mm high and 24 inches 600 mm wide; Provide Accuride 7432; up to 24 inches wide, full extension carburized steel ball bearing, side mounting, minimum 100 lb capacity medium duty load rating, cold rolled steel slide members and ball retainers, cushioned in and out stops, detent in, progressive action, positive stop, bright electro zinc plate finish.
3. Pedestal Drawers (Greater than 8 inches Deep): Accuride 4032; up to 24 inches wide , full extension carburized steel ball bearing, rail mounting, minimum 150 lb capacity heavy duty load rating, cold rolled steel slide members and ball retainers, cushioned in and out stops, detent-in, progressive action, positive stop, bright electro zinc plate finish.

K. Door and Drawer Locks: Provide locks for each cabinet door and drawer. Finish exposed portions of locks to match cabinet pull finish. Furnish 2 keys with each lock and key locks inside one room alike and provide masterkey for locks in project.
1. Drawers: BHMA A156.11, E07041; Lock assemblies:
   a. Cam lock similar to Hafele 235.12.261, chrome plated, with Offset Cam 219.13.9xx, sized to fit opening.
   b. Cam lock similar to Hafele 235.12.221, chrome plated, with surface mounted strike 251.60.703.
2. Single Doors: BHMA A156.11, E07121; Lock assemblies:
   a. Cam lock similar to Hafele 235.12.261, chrome plated, with Offset Cam 219.13.9xx, sized to fit opening.
   b. Cam lock similar to Hafele 235.12.221, chrome plated, with surface mounted strike 251.60.703.
   c. Provide locks indicated on the Drawings.
3. Pairs of Doors: BHMA A156.11, E07121:
   a. Inactive Leaf: Furniture bolt similar to Hafele 252.02.644, polished chrome, with strike 251.60.703.
   b. Active Leaf: Single door lock assembly.

L. Grommets for Cable Passage through Countertops: 2 inch (51 mm) OD, black, molded plastic grommets and matching plastic caps with slot for wire passage.
1. Product: Subject to compliance with requirements, provide OG series by Doug Mockett & Company, Inc.

M. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.

1. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.

N. Concealed Hardware: Provide finish complying with product class requirements in BHMA A156.9.

2.3 MISCELLANEOUS MATERIALS

A. Furring, Blocking, Shims, and Hanging Strips: Fire retardant treated softwood lumber, kiln dried to less than 15 percent moisture content.

B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide nonferrous metal or hot dip galvanized anchors and inserts on inside face of exterior walls and as required for corrosion resistance. Provide toothed steel or lead expansion sleeves for drilled in place anchors.

C. Hanging (Zee Clip) Strips: Extruded aluminum zee type interlocking clips; type, size and quantity for the condition of use.

D. Screws: Select material, type, size, and finish required for each use. Comply with FS FF-S-111 for applicable requirements.

E. Nails: Select material, type, size, and finish required for each use. Comply with FS FF-N-105 for applicable requirements.

F. Blind Splines: Specialty devices, as required for tight butt joining, types and size as recommended by woodwork fabricator.

G. Covercaps: Where mortises of fastener heads, or draw downs are exposed (blind holes) in finished work, provide black plastic covercaps.

H. Adhesive for Bonding Plastic Laminate: Resorcinol.
1. Adhesive for Bonding Edges: Hot melt adhesive.

2.4 FABRICATION

A. Woodwork Grade: AWS Custom Grade woodwork complying with referenced quality standard.
1. Complete fabrication, including assembly, finishing, and hardware application, before shipment to site to the maximum extent possible. Disassemble components as necessary for shipment and installation. Where necessary for fitting at site, provide allowance for scribing, trimming, and fitting. The width of scribe and filler panels shall not exceed 1/2 inch or 1/2 inch clear dimension from adjacent wall to outside face of cabinet door in a 90 degree position, whichever is greater.
2. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify various parts fit as intended and check measurements of assemblies against field measurements indicated on Shop Drawings before disassembling for shipment.

B. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to ambient relative humidity during fabrication and in installation areas.

C. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:

1. Corners of Cabinets and Edges of Solid Wood (Lumber) Members 3/4 Inch 19 mm Thick or Less: 1/16 inch1.5 mm.
2. Corners of Cabinets and Edges of Solid Wood (Lumber) Members and Rails: 1/16 inch1.5 mm.

D. Shop cut openings to maximum extent possible to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.
   1. Seal edges of openings in countertops with a coat of varnish.

E. Plastic Laminate Faced Wood Paneling: AWS Premium Grade.
   1. Plastic Laminate: High pressure decorative laminate complying with NEMA LD 3:
      a. Faces: Grade SGF.
      b. Backs: Grade BKH.
      c. Exposed Edges: Same as faces.
   2. Colors, Patterns, and Finishes: Wood grains, matte finish.
      a. Grain Direction: Vertical.
   3. Panel Core: Particleboard or medium density fiberboard.
      a. Thickness: 3/4 inch (19 mm).
   4. Exposed Panel Edges: Applied solid wood banding 11/16 inch (18 mm) thick by depth of panels.
   5. Adhesive for Bonding Edges: Hot melt adhesive or adhesive for faces.
   6. Assemble panels by gluing and concealed fastening.

F. Plastic Laminate Cabinets: AWS Premium grade.
   1. AWS Type of Cabinet Construction: Flush overlay.
   2. Materials:
      a. Laminate Cladding for Exposed Surfaces: High pressure decorative laminate:
         1) Horizontal Surfaces Other Than Tops: Grade HGS.
         2) Postformed Surfaces: Grade HGP.
         3) Vertical Surfaces: Grade VGS.
         4) Edges: Grade HGS.
      b. Semiexposed Surfaces:
         1) Surfaces Other Than Drawer Bodies: Thermoset decorative panels.
            a) Edges of Plastic Laminate Shelves: Grade HGS, matching laminate in color, pattern, and finish.
            b) For semiexposed backs of panels with exposed plastic laminate surfaces, provide surface of high pressure decorative laminate, Grade VGS.
         2) Drawer Sides and Backs: Solid hardwood lumber.
         3) Drawer Bottoms: Hardwood plywood.
      c. Concealed Backs of Panels with Exposed Plastic Laminate Surfaces: High pressure decorative laminate, Grade BKL.
   3. Colors, Patterns, and Finishes: Basis of Design is Wilsonart Grey 1500-60
   4. Provide dust panels of 1/4 inch 6.4 mm plywood or tempered hardboard above compartments and drawers, unless located directly under tops.
   5. Fabrication: Join case body members using concealed dado or dowel methods utilizing glue and pressure. Reinforce dado method with nailing or screws. Mechanical fasteners are not permitted.
      a. Base Cabinet Bottoms and Subtops: Bottoms, 3/4 inch particleboard with low pressure laminate finish on interior side and phenolic backing sheet on concealed side. Subtops, 3/4 inch particleboard with phenolic backing sheet both sides. Fabricate all base cabinets with subtops.

b. Cabinet Ends: 3/4 inch particleboard with low pressure laminate finish on interior side and phenolic backing sheet on concealed side. Install high pressure plastic laminate on exposed sides of cabinet ends.
c. Cabinet Backs: 1/4 inch hardboard with low pressure laminate finish for standard unexposed backs. Fabricate with continuous hot melt glue joint between sides, tops, bottoms and back on concealed side.
   1) Exposed Backs: 3/4 inch particleboard with low pressure laminate finish on interior side and high pressure plastic laminate on exterior, exposed side.
d. Cabinet Shelves (Adjustable, Semiconcealed): 3/4 inch particleboard with low pressure laminate finish on both sides. Provide 1 inch particleboard for shelves for unsupported spans over 36 inches.
e. Cabinet Doors: 3/4 inch particleboard with high pressure plastic laminate on exterior side and heavy gauge balancing sheet on interior side.
f. Drawer Fronts: 3/4 inch particleboard with high pressure plastic laminate on exterior side and heavy gauge balancing sheet on interior side.
g. Drawer Construction: 1/2 inch solid hardwood back, sides and subfront; tongued and dadoed into back and subfront, joints glued and pinned; 1/4 inch hardboard bottom tongued and dadoed in all four sides, back, and subfront. Provide additional support with continuous hot melt glue joint on underside of drawers between sides, back, subfront and bottom.
   1) Reinforce drawer bottoms as required with spreaders.
   2) Apply drawer front to subfront in accordance with manufacturer's standard procedures.
   3) Dividers: 3/4 inch particleboard with manufacturer's low pressure laminate finish on both sides. Secure to inside of cabinet with manufacturer's standard plastic clips.
   4) Dust Panels: Provide dust panels of 1/4 inch plywood or tempered hardboard above compartments and drawers except where located directly under tops.
   5) Finish exterior exposed surfaces with high pressure plastic laminate. Laminate plastic to particleboard core with balancing sheet using urea resin formaldehyde glue. Fabricate using cold press method with regulated pressure for minimum 8 hours at minimum 70 degrees F.

G. Countertops: AWS Premium Grade.
1. Plastic Laminate Surface:
   a. Solid Surfacing Material Thickness: 3/4 inch (19 mm).
   b. Colors, Patterns, and Finishes: Provide materials and products resulting in colors of solid surfacing material indicated on drawings.

2. Fabrication:
   a. Fabricate tops in one piece, unless otherwise indicated. Comply with solid surfacing material manufacturer's written recommendations for adhesives, sealers, fabrication, and finishing.
      1) Fabricate tops with shop applied edges of materials and configuration indicated.
      2) Fabricate tops with loose backsplashes for field application.

   b. Drill holes in countertops for plumbing fittings and soap dispensers in shop.

3. Countertop Construction Tolerances:
   a. Variation from Plumb: For vertical lines and surfaces, do not exceed 1/16 inch in 48 inches (1.5 mm in 1200 mm).
   b. Variation from Level: Do not exceed 1/8 inch in 96 inches (3 mm in 2400 mm), 1/4 inch (6 mm) maximum.
   c. Variation in Joint Width: Do not vary joint thickness more than 1/4 of nominal joint width.
   d. Variation in Plane at Joints (Lipping): Do not exceed 1/64 inch (0.4 mm) difference between planes of adjacent units.

e. Variation in Line of Edge at Joints (Lipping): Do not exceed 1/64-inch (0.4-mm) difference between edges of adjacent units, where edge line continues across joint.

2.5 SHOP FINISHING

A. Grade: AWS Premium grade.

B. Shop finish architectural woodwork at fabrication shop. Defer final touchup, cleaning, and polishing until installation.

C. Production finish architectural woodwork at fabrication shop. Defer only final touchup, cleaning, and polishing until after installation.

D. Preparations for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing architectural woodwork, as applicable to each unit of work.
1. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of woodwork. Apply two coats to back of paneling and to end grain surfaces. Concealed surfaces of plastic laminate clad woodwork do not require backpriming when surfaced with plastic laminate, backing paper, or thermoset decorative overlay.

E. Exposed Surfaces: AWS Premium Grade.
1. Plastic Laminate Finish: Use hot plate method for gluing of plastic laminate surfacing materials; glued surfaces shall be in close contact throughout. Glue stains are not permitted.
2. Solid Surfacing Finish: As scheduled.

F. Unexposed Wood Finish: Water based alkyd type primer/sealer.

PART 3 - EXECUTION

3.1 PREPARATION

A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas. Before installing architectural woodwork, examine shop fabricated work for completion and complete work as required, including removal of packing and backpriming.

3.2 INSTALLATION

A. Grade: Install woodwork to comply with requirements for grade specified for fabrication of type of woodwork involved.

B. Assemble woodwork and complete fabrication at site to comply with requirements for fabrication in Part 2, to extent that it was not completed in the shop. Install woodwork level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches3 mm in 2400 mm. Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

C. Fire Retardant Treated Wood: Handle, store, and install fire retardant treated wood to comply with chemical treatment manufacturer's written instructions, including those for adhesives used to install woodwork.

D. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine

finishing nails[or finishing screws] for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.

E. Plastic Laminate Paneling: Install paneling to comply with same grade as paneling to be installed.
1. Install paneling level, plumb, true, and straight with no distortions. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm). Install with no more than 1/16 inch in 96 inch (1.6 mm in 2400 mm) vertical cup or bow and 1/8 inch in 96 inch (3 mm in 2400 mm) horizontal variation from a true plane.
2. Anchor paneling to supporting substrate with blind nailing. Do not use face fastening unless covered by trim.

F. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
1. Install cabinets with no more than 1/8 inch in 96 inch 3 mm in 2400 mm sag, bow, or variation from a straight line.
2. Maintain veneer sequence matching of cabinets with transparent finish.
3. Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches 400 mm o.c. with No. 10 wafer head screws sized for 1 inch 25 mm penetration into wood framing, blocking, or hanging strips or toggle bolts through metal backing or metal framing behind walls.

G. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.
1. Install countertops with no more than 1/8 inch in 96 inch 3 mm in 2400 mm sag, bow, or variation from a straight line.
2. Secure backsplashes to tops with concealed metal brackets at 16 inches 400 mm o.c. and to walls with adhesive.
3. Caulk space between backsplash and wall with silicone sealant.

H. Plastic Laminate Surface Countertop: Install components plumb and level scribed to adjacent finishes. Fabricate with backsplashes. Sand minor scratches and stain.
1. Align adjacent stone and solid surfacing material countertops and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
2. Do not cut in field unless otherwise indicated. If countertops or splashes require additional fabrication not specified to be performed at site, return to fabrication shop for adjustment.
3. Form field joints using manufacturer's recommended adhesive, with joints inconspicuous in finished work.
4. Set stone and solid surface materials to comply with requirements indicated on Drawings and Shop Drawings. Shim and adjust to locations indicated, with uniform joints of widths indicated and with edges and faces aligned according to established relationships and indicated tolerances. Install anchors and attachments indicated or necessary to secure countertops in place.
5. Where backsplash is indicated, install backsplash and end splash by adhering to wall with water-cleanable epoxy adhesive and to countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears.
6. Adhesive top mount sinks/bowls to countertops using manufacturer's recommended adhesives and color matched silicone sealants.
7. Keep components clean during installation. Remove adhesives, sealants, and stains. Replace stained components.
8. Apply sealant to joints and gaps; comply with Section 079200. Remove temporary shims before applying sealant.
9. Make plumbing connections to sinks in accordance with plumbing requirements.
10. Protect surfaces from damage. Repair work or replace damaged work that cannot be repaired to Architect's satisfaction.

I. Touch up finishing work. Fill nail holes with matching filler where exposed.

J. Construction Tolerances:
1. Variation from Plumb: For vertical lines and surfaces, do not exceed 1/16 inch in 48 inches (1.5 mm in 1200 mm).
2. Variation from Level: Do not exceed 1/8 inch in 96 inches (3 mm in 2400 mm), 1/4 inch (6 mm) maximum.
3. Variation in Joint Width: Do not vary joint thickness more than 1/4 of nominal joint width.
4. Variation in Plane at Joints (Lipping): Do not exceed 1/64 inch (0.4 mm) difference between planes of adjacent units.
5. Variation in Line of Edge at Joints (Lipping): Do not exceed 1/64 inch (0.4 mm) difference between edges of adjacent units, where edge line continues across joint.

3.3 SITE ENVIRONMENTAL PROCEDURES

A. Indoor Air Quality: Provide temporary ventilation during work.

B. Waste Management: Comply with requirements of Section 017400 and Construction Waste Management Plan.
1. Select wood sizes to minimize waste; reuse scrap to the greatest extent possible. Clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
2. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.
3. Prevent saw dust and wood shavings from entering the storm drainage system.
4. Do not burn scrap lumber that has been pressure treated.
5. Do not send lumber treated with pentachlorophenol, CCA, or ACA to cogeneration facilities or waste to energy facilities.

3.4 ADJUSTING AND CLEANING

A. Repair damaged and defective woodwork, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.

B. Clean, lubricate, and adjust hardware.

C. Clean woodwork on exposed and semiexposed surfaces. Touch up shop applied finishes to restore damaged or soiled areas.

D. Countertops: Clean countertops as work progresses. Remove adhesive, grout, mortar, and sealant smears immediately. Remove and replace countertops that are:
1. In Progress Cleaning: Clean countertops as work progresses. Remove adhesive, grout, mortar, and sealant smears immediately.
2. Remove and replace countertops that are:
   a. Broken, chipped, stained, or otherwise damaged. Stone may be repaired if methods and results are approved by Architect. Repair solid surface in accordance with manufacturer recommendations when approved by Architect.
   b. Defective countertops.
   c. Defective joints, including misaligned joints.
3. Replace complying with requirements and showing no evidence of replacement.

3.5 PROTECTION

A. Provide final protection and maintain conditions, acceptable to manufacturer and Installer, ensuring woodwork is without damage or deterioration at time of Substantial Completion.

END OF SECTION 06 40 00

SECTION 07 92 00 – JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes: Requirements including but not limited to:
   1. Exterior joints in vertical surfaces and nontraffic horizontal surfaces.
      a. Joints between different materials.
      b. Perimeter joints between materials and door, window, and louver frames.
      c. Other joints indicated.

   2. Exterior joints in horizontal traffic surfaces:
      a. Joints between different materials.
      b. Other joints indicated.

   3. Interior joints in vertical surfaces and horizontal nontraffic surfaces:
      a. Control and expansion joints on exposed interior surfaces of exterior walls.
      b. Perimeter joints of exterior openings where indicated.
      c. Tile control and expansion joints.
      d. Vertical control joints on exposed surfaces of interior unit masonry and concrete walls and partitions.
      e. Perimeter joints between interior wall surfaces and frames of interior doors, windows, and elevator entrances.
      f. Joints between plumbing fixtures and adjoining walls, floors, and counters.
      g. Other joints indicated.

   4. Interior joints in horizontal traffic surfaces:
      a. Control and expansion joints in cast in place concrete slabs.
      b. Control and expansion joints in stone, masonry, or tile flooring.
      c. Other joints indicated.

   5. Acoustical sealants.
   6. Preformed seals.
   7. Accessories necessary for a complete installation.

1.3 SUBMITTALS

A. Product Data: Technical data for each joint and acoustical sealant product.
   1. Joint Sealant: Submit written certification from manufacturers of sealants attesting products are suitable for use indicated, verified through in house testing laboratory.
   2. Written certification from manufacturers of joint sealants attesting that products comply with specification requirements and are suitable for use indicated and that products have been verified through manufacturers testing laboratory within the past 36 months or since most recent reformulation, whichever is most recent.
      a. Complete instructions for handling, storage, mixing, priming, installation, curing and protection of each type of sealant.
      b. Manufacturer's letter, indicating proposed lot numbers of each sealant supplied and expiration date sequence.

c. Instructions for handling, storage, mixing, priming, installation, curing, and protection of each type of sealant.

B. Samples: Submit for each kind and color of joint sealant required.

C. Product Test Reports: For each kind of sealant, for tests performed by manufacturer and witnessed by a qualified testing agency or a qualified testing agency.

D. Sealant Schedule: Include the following information:
1. Sealant application, joint location, and designation.
2. Sealant manufacturer and product name.
3. Sealant formulation.
4. Sealant color.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Firm having minimum 5 years documented experience and specializes in the installation of sealants.

B. Source Limitations: Obtain each type of joint sealant from a single manufacturer.

C. Mockups: Install sealant in mockups of assemblies specified in the individual specification sections that are indicated to receive specified joint sealants. Use materials and installation methods specified.

D. Preinstallation Conference: Conduct conference at site.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.

B. Store and handle materials in compliance with manufacturer's written instructions to prevent deterioration or damage due to moisture, high or low temperatures, contaminants, and other causes.

1.6 FIELD CONDITIONS

A. Environmental Limitations: Do not proceed with installation of joint sealants under the following conditions:
1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 degrees F (5 degrees C),
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

B. Joint Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.

C. Joint Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

1.7 WARRANTY

A. Installer Warranty: Written warranty signed by Installer in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified within specified warranty period.
   1. Warranty Period: Two years from date of Substantial Completion.

B. Manufacturer Warranty: Written warranty signed by Manufacturer in which Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
   1. Warranty Period: Five years from date of Substantial Completion.

C. Manufacturer Warranty, Preformed Sealants: Written warranty signed by manufacturer in which Manufacturer agrees to furnish preformed joint seals to repair or replace those that do not comply with performance and other requirements specified within specified warranty period.
   1. Warranty Period: Five years from date of Substantial Completion.

D. Warranties exclude deterioration or failure of joint sealants from the following:
   1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
   2. Disintegration of joint substrates from causes exceeding design specifications.
   3. Mechanical damage caused by individuals, tools, or outside agents.
   4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Compatibility: Provide joint sealants, backings, and other related materials compatible with one another and with joint substrates under conditions of service and application, demonstrated by testing performed by joint sealant manufacturer, based on testing and field experience.

B. Sealants: Use self leveling compounds for horizontal joints in pavements and nonsag compounds elsewhere except as shown or specified.

C. Colors: For fully concealed joints, provide color of sealant which has the best overall performance characteristics for the application shown. For exposed joints, provide colors selected by Architect to match adjacent material colors.

D. Manufacturer's Representative: Use elastomeric sealant produced by a manufacturer who provides an on-site qualified technical representative to the project site upon request for the purpose of rendering advice concerning the installation and performance of manufacturer's materials.

E. Silicone Joint Sealants
   1. Silicone: ASTM C 920;Type S, Grade NS, Class 100/50, Exposure NT, Substrate: M, G, A, O: Neutral curing silicone joint sealant.
      a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
         1) GE Construction Sealants; SCS 2700 SilPruf LM.
         2) Sika Corporation; SikaSil WS 290, 390 FPS.

   2. Silicone: ASTM C 920; Type S, Grade NS, Class 50, Exposure NT Substrate: M, G, A, O: Neutral curing silicone joint sealant.

a. Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
b. Joint Locations:
   1) Construction joints in cast in place concrete.
   2) Joints between different materials listed above.
   3) Perimeter joints between materials listed above and frames of doors and thresholds.
   4) Control and expansion joints in ceilings and other overhead surfaces.
   5) Other joints as indicated on Drawings.

c. Color: Selected by Architect.
d. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1) Dow Corning Corporation; 791.
   2) Bostik, Inc.
   3) GE Construction Sealants; SCS 2000 SilPruf.
   4) Pecora Corporation. PCS.
   5) Sika Corporation; Sikasil WS 295 and WS 295 FPS.

F. Nonstaining Silicone Joint Sealants: No staining of substrates when tested according to ASTM C 1248.
1. Silicone: ASTM C 920, Type S, Grade NS, Class 50, Use NT, Substrate: M, G, A, O, nonstaining.
   a. Application: Vertical application, glass wall butt joints.
   b. Performance: Nonstain, nonbleed, nonstreaking to sealed and adjacent substrates; minimum peel adhesion value after 7 day immersion of 13 pli (2.27 kN/m) when tested in accordance with ASTM C794 Adhesion in Peel.
   c. Color: Black.
   d. Manufacturers: Subject to compliance with requirements, provide products by the following:
      1) Dow Corning Corporation, 756 SMS or 795.
      2) GE Construction Sealants; SilPruf NB.
      3) Pecora Corporation, 864 NST, 895 NST, or 898 NST.

G. Structural Silicone Sealants: Structural and weatherseal beads for unitized four side shop glazed structural silicone curtain wall system:
1. Silicone: ASTM C 1184 and ASTM C 920, Type M, Grade NS, Class 12.5 or 25; use NT, G, and A.
   a. Application: Structural glazing at exterior curtain walls and storefronts:
   b. Performance:
      1) Tensile Adhesion Strength: Minimum 120 psi with sealant design tensile and shear stress calculated at 20 psi resulting in a minimum 6 to 1 safety factor. Provide laboratory testing and calculations indicating product working stress and safety factors, in addition provide insulating glass manufacturer's written concurrence, based on testing to actual job production run samples of glass and framing materials, the product is proper for the uses shown and specified.

   c. Cure System: Neutral cure system compatible and adherent to two part insulating glass edge seals, glazing accessories and metal window frame materials.
   d. Color: Black.
   e. Manufacturers: Subject to compliance with requirements, provide products by the following:
      1) Dow Corning Corporation; 983 Structural Glazing and Curtainwall Adhesive/Sealant base x curing agent.
      2) GE Construction Sealants; UltraGlaze SSG 4400.

2. Silicone: ASTM C 1184 and ASTM C 920, Type M, Grade NS, Class 25 and 50; use NT, G, and A.
    a. Application: Structural and weatherseal beads for 2 side field glazed structural curtainwalls:
        1) Performance:
            a) Tensile Adhesion Strength: Minimum 120 psi with sealant design tensile and shear stress calculated at 20 psi resulting in a minimum 6 to 1 safety factor. Provide laboratory testing and calculations indicating product working stress and safety factors, in addition provide insulating glass manufacturer's written concurrence, based on testing to actual job production run samples of glass and framing materials, the product is proper for the uses shown and specified.
        2) Cure System: Neutral cure system compatible and adherent to the two part insulating glass edge seals, glazing accessories and metal window frame materials.
        3) Color: Black.
        4) Manufacturers: Subject to compliance with requirements, provide products by the following:
            a) Dow Corning Corporation; 995 Silicone Structural Adhesive.
            b) GE Construction Sealants; UltraGlaze SSG 4000.

H. Silicone Sealant in Contact with Food:
1. Silicone: 21 CFR 177.2600, NSF Standard 51, and ASTM C 920 for Type S, Grade NS, Class 25, Use NT.
2. Manufacturers: Subject to compliance with requirements, provide products by the following:
    a. Dow Corning Corporation; 786 Mildew Resistant Silicone Sealant.

I. Urethane Joint Sealants:
1. Urethane: ASTM C 920, Type S, Grade NS, Class 25, Use NT, Substrate: M, G, A, O, urethane joint sealant.
    a. Application: Exterior and interior joints in vertical surfaces and horizontal nontraffic surfaces.
    b. Locations:
        1) Control and expansion joints on exposed interior surfaces of exterior walls.
        2) Tile control and expansion joints.
        3) Vertical joints on exposed surfaces of unit masonry, concrete, walls, and partitions.
        4) Joints on underside of plant-precast structural concrete beams and planks.
        5) Other joints as indicated on Drawings.

    c. Color: Selected by Architect.
    d. Manufacturers: Subject to compliance with requirements, provide products by the following:
        1) BASF Corporation, Sonolastic TX 1.
        2) Bostik, Inc; GPS 1, Chem Calk 900, 915, 916, or 2000.
        3) Pecora Corporation. Dynatrol I-XL.
        4) Schnee-Morehead, Inc; Permathane SM 7100.
        5) Sika Corporation; Sikaflex Textured.

J. Silyl-Terminated Polyether (STPE) Sealants:
1. STPE: ASTM C 920, Type S, Grade NS, Class 50, Use NT, Substrate: M, G, A, O, silyl-terminated polyether joint sealant;.
    a. Manufacturers: Subject to compliance with requirements, provide products by the following:

1) GE Construction Sealants; SCS 7000.
2) Pecora Corporation; Dynatrol I-XL Tru-White.

2. STPE: ASTM C 920, Type S, Grade NS, Class 25, Use NT, Substrate: M, G, A, O, silyl-terminated polyether joint sealant.
   a. Manufacturers: Subject to compliance with requirements, provide products by the following:
      1) Schnee-Morehead, Inc.,SM 2100.

K. Mildew Resistant Joint Sealants: Formulated for prolonged exposure to humidity with fungicide to prevent mold and mildew growth.
   1. Silicone, Mildew Resistant: ASTM C 920, Type S, Grade NS, Class 25, Use NT, Substrate: M, G, A, O, acid curing silicone joint sealant.
      a. Application: Mildew resistant interior joints in vertical surfaces and horizontal nontraffic surfaces.
      b. Locations:
         1) Joints between plumbing fixtures and adjoining walls, floors, and counters.
         2) Tile control and expansion joints where indicated.
         3) Other joints as indicated on Drawings.

      c. Color: Selected by Architect.
      d. Manufacturers: Subject to compliance with requirements, provide products by the following:
         1) Dow Corning Corporation; 786-M White.
         2) GE Construction Sealants; Sanitary SCS 1700.

   2. STPE, Mildew Resistant: ASTM C 920, Type S, Grade NS, Class 50, Use NT, Substrate: M, G, A, O, silyl-terminated polyether joint sealant.
      a. Manufacturers: Subject to compliance with requirements, provide products by the following:
         1) BASF Corporation; Sonolastic 150.

L. Butyl Joint Sealants:
   1. Butyl Rubber Based Joint Sealants: ASTM C 1311.
      a. Application: Concealed mastics.
      b. Locations:
         1) Aluminum thresholds.
         2) Sill plates.
         3) Other joints as indicated on Drawings.
      c. Color: Selected by Architect.
      d. Manufacturers: Subject to compliance with requirements, provide products by the following:
         1) Bostik, Inc.
         2) Pecora Corporation.

M. Latex Joint Sealants:
   1. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.
      a. Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces not subject to significant movement.
      b. Locations:
         1) Control joints on exposed interior surfaces of exterior walls.
         2) Perimeter joints between interior wall surfaces and frames of interior doors, windows, and elevator entrances.
         3) Other joints as indicated on Drawings.

      c. Color: Selected by Architect.

d. Manufacturers: Subject to compliance with requirements, provide products by the following:
   1) BASF Corporation; Construction Systems.
   2) Pecora Corporation.

N. Preformed, Foam Joint Seals: Joint seal manufactured from urethane or EVA (ethylene vinyl acetate) foam with minimum density of 10 lb/cu. ft. (160 kg/cu. m) and impregnated with a nondrying, water repellent agent. Factory produce in precompressed sizes in roll or stick form to fit joint widths based on design criteria indicated, with factory or field applied adhesive for bonding to substrates.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. EMSEAL Joint Systems, Ltd.
      b. MM Systems Corporation.
      c. Nystrom, Inc.
      d. Watson Bowman Acme Corp.
   2. Design Criteria:
      a. Nominal Joint Width: Indicated on Drawings.
      b. Movement Capability:-25 percent/+25 percent.
   3. Color: Selected by Architect.

O. Extruded Silicone Joint Seals: Seal consisting of precured low modulus silicone extrusion, with a neutral curing silicone sealant for bonding extrusions to substrates.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Dow Corning Corporation.
      b. GE Construction Sealants.
      c. May National Associates, Inc.; a subsidiary of Sika Corporation.
      d. Pecora Corporation.
      e. Sika Corporation; Joint Sealants.

   2. Joint Seal Width: Joint size indicated on Drawings plus 1 inch (25 mm).
   3. Color: Selected by Architect.

P. Sealant Backing: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
   1. Manufacturers: Subject to compliance with requirements, provide products by the following:
      a. BASF Corporation; Construction Systems.
      b. Construction Foam Products; a division of Nomaco, Inc.

   2. Cylindrical Sealant Backings: ASTM C 1330, compressible, resilient, nonstaining, nonwaxing, nonextruding backings of flexible plastic foam, type indicated. Select shape and density of cylindrical sealant backings for performance in specific condition of use.
      a. Type C: Closed cell material with a surface skin, nonabsorbent to liquid water and gas, nonoutgassing in unruptured state.
      b. Type O: Open cell material.
      c. Type B: Bicellular material with a surface skin, no outgassing, with density between 1.5 pcf and 3.0 pcf (24 kg/cubic meter to 48 kg/cubic meter) in accordance with ASTM D 1622 and minimum tensile strength of greater than 29 psi and 38 psi (200 kPa and 267 kPa) in accordance with ASTM D 1623, and with water absorption less than 0.058 oz./cubic inch (0.10 gm/cc) in accordance with ASTM C 1016

d. Any of the preceding types, approved in writing by sealant manufacturer for joint application indicated], and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

Q. Miscellaneous Materials:
1. Primer: Material recommended by sealant manufacturer where required for adhesion of sealant to joint substrates indicated, determined from preconstruction sealant substrate tests and field tests.
2. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
3. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.
4. Bonder Breaker Tape: Polyethylene, TFE fluorocarbon, or plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials of joint surfaces at back of joint where such adhesion.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants for compliance with requirements for joint configuration, installation tolerances, and conditions affecting performance of the work.

B. Proceed with installation after correcting unsatisfactory conditions.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with sealant manufacturer's written instructions and the following requirements:
1. Remove foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
a. Concrete.
b. Masonry.

3. Remove laitance and form release agents from concrete.
4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
a. Metal.

B. Joint Priming: Prime joint substrates where recommended by sealant manufacturer or as indicated by preconstruction sealant substrate tests or prior experience. Apply primer to comply with sealant manufacturer written instructions. Confine primers to areas of joint sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION

A. Joint Sealants: Comply with sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Sealant Backing: Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
   1. Do not leave gaps between ends of sealant backings.
   2. Do not stretch, twist, puncture, or tear sealant backings.
   3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.
   4. Install bond breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
   5. Install weeps and vents into joints at the same time sealants are being installed. Unless otherwise shown, locate weeps and vents spaced as recommended by the sealant manufacturer and the window and curtain wall fabricator and erector. Do not install weeps and vents at outside building corners. Do not install vents at horizontal joints immediately below shelf angles, sills, and through wall flashings.

D. Sealants: Install sealants using proven techniques that comply with the following and at the same time backings are installed:
   1. Place sealants to directly contact and fully wet joint substrates.
   2. Completely fill recesses in each joint configuration.
   3. Produce uniform, cross sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
   4. Apply sealants to depth shown and in accordance with the manufacturer's recommendations and the following proportions and limitations:
      a. Apply elastomeric sealants in horizontal joints to a depth equal to 75% of the joint width, but not less than 3/8 inch (10 mm) and not more than 3/4 inch (19 mm).
      b. Apply elastomeric sealants, in joints not subject to traffic or other abrasion, to a depth equal to 50% of the joint width, but not less than 1/4 inch (6 mm) and not more than 1/2 inch (13 mm).
      c. Apply nonelastomeric sealants to a depth approximately equal to the joint width.
      d. Fill horizontal traffic bearing joints slightly recessed to avoid direct contact with wheel, and pedestrian traffic. Fill horizontal traffic bearing joints with slope grade polyurethane sealants to a depth approximately equal to the joint width.
   5. Pour self leveling sealants to a depth approximately equal to the joint width.

E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint.
   1. Use masking tape to protect adjacent surfaces of recessed tooled joints.
   2. Remove excess sealant from surfaces adjacent to joints.
   3. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
   4. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.

5. Provide flush joint profile at locations indicated on Drawings according to Figure 8B in ASTM C 1193.
6. Provide recessed joint configuration of recess depth and at locations indicated on Drawings according to Figure 8C in ASTM C 1193. Use masking tape to protect surfaces adjacent to recessed tooled joints.
7. Provide slight wash on horizontal joints where horizontal and vertical surfaces meet.
8. At rough surfaces or in joints of uneven widths, avoid appearance of excess sealant or compound by locating the compound or sealant back into joint wherever possible.

F. Preformed Silicone Sealant System:
1. Apply masking tape to each side of joint, outside of area to be covered by sealant system.
2. Apply a bead of silicone sealant to each side of joint to produce a bead of size complying with preformed silicone sealant system manufacturer's printed schedule and covering a bonded area of not less than a 3/8 inch (10 mm). Hold edge of sealant bead inside of masking tape by 1/4 inch (6 mm).
3. Within 10 minutes of sealant application, press silicone extrusion into sealant to wet extrusion and substrate. Use a roller to apply consistent pressure and ensure uniform contact between sealant and both extrusion and substrate.
4. Complete installation of horizontal joints before installing vertical joints. Lap vertical joints over horizontal joints. At end of joints, cut silicone extrusion with a razor knife.

G. Installation of Preformed Foam Sealants: Install each length of sealant immediately after removing protective wrapping, taking care not to pull or stretch material, to produce seal continuity at ends, turns, and intersections of joints. For applications at low ambient temperatures where expansion of sealant requires acceleration to produce seal, apply heat to sealant to comply with sealant manufacturer's written instructions.

3.4 FIELD QUALITY CONTROL

A. Field Adhesion Testing: Field test sealant adhesion to joint substrates:
1. Extent of Testing: Test completed and cured sealant joints as follows:
   a. Perform 10 tests for the first 1000 feet (300 m) of joint length for each kind of sealant and joint substrate.
   b. Perform one test for each 1000 feet (300 m) of joint length thereafter or one test per each floor per elevation.

2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
   a. Make knife cuts from one side of joint to the other, followed by two cuts approximately 3 inches (75 mm) long at sides of joint and meeting cross cut at one end. Place a mark 1 inch (25 mm) from cross-cut end of 3 inch (75 mm) piece.
   b. Use fingers to grasp 3 inch (75 mm) piece of sealant between cross cut end and 1 inch (25 mm) mark; pull firmly at a 90 degree angle to the joint in the direction of side cuts and hold the sealant in position for 10 seconds; following the 10 second time duration pull sealant at a 180 degree angle parallel to the joint and hold the sealant in this position for 10 seconds. Pull sealant away from joint to the distance recommended by sealant manufacturer for testing adhesion.
   c. For joints with dissimilar substrates, check adhesion to each substrate separately. Do this by extending cut along one side, checking adhesion to opposite side, and then repeating this procedure for opposite side.
   d. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
3. Inspect tested joints and report on the following:
   a. Whether sealants filled joint cavities and are free of voids.

b. Whether sealant dimensions and configurations comply with specified requirements.
c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion complies with sealant manufacturer field adhesion hand pull test criteria.

4. Record test results in a field adhesion test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant material, sealant configuration, and sealant dimensions.
5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

B. Evaluation of Field Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.5 CLEANING

A. Clean excess sealant or sealant smears adjacent to joints as the work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

A. Protect sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 07 92 00

SECTION 08 12 00 - METAL DOORS AND FRAMES REPAIR

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes: Requirements including but not limited to:
   1. Repair and touch up of exterior and interior steel doors and frames.
   2. Accessories necessary for a complete installation.

1.3 SUBMITTALS

A. Product Data: Technical data for each product indicated, including material descriptions, core descriptions, label compliance, sound and fire resistance ratings, temperature rise ratings and finishes for each type of door and frame specified.

1.4 COORDINATION

A. Coordinate the work of this section with others effected including but not limited to: other interior and/or exterior envelope components and door hardware beyond that provided by this section

PART 2 - PRODUCTS

2.1 MATERIALS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Bondo by 3M Manufacturing Company or comparable product.

B. Materials: Thick, two-part polyester resin filler.

2.2 FRAME FINISHES

A. Surface Preparation: Clean, treat and prime surfaces of fabricated steel door and frame work, inside and out, whether exposed or concealed in the construction.
   1. Clean surfaces with nonpetroleum solvent so surfaces are free of dirt, oil, grease, and contaminants that could impair paint bond.
   2. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 3 *Power Tool Cleaning* or SSPC-SP 6/NACE No. 3 *Commercial Blast Cleaning*.
   3. After cleaning, apply conversion coating suited to organic coating applied over surface.
   4. Clean welds, mechanical connections, and abraded areas, and apply galvanizing repair paint complying with ASTM A 780.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the work. Examine roughing in for

embedded and built in anchors to verify actual locations before frame installation. Prepare written report listing conditions detrimental to performance of the work. Proceed with installation after correcting unsatisfactory conditions.

3.2 PREPARATION

A. Remove welded in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.3 REPAIR AND TOUCH UP

A. Limited to minor repair of small scratches.
   1. Such repairs shall match original finish for quality or material and view.

3.4 ADJUSTING AND CLEANING

A. Prime Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air drying, rust inhibitive primer. Refer to Section 099000 for field painting of ferrous metals. Spray apply primer; do not brush.

B. Metallic Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

C. Factory Finish Touchup: Clean abraded areas and repair with same material used for factory finish according to manufacturer's written instructions.

D. Touchup Painting: Refer to Section 099000 for cleaning and touchup painting of abraded areas of paint.

E. Institute protective measures required throughout the remainder of the construction period to ensure that steel doors and frames will be without damage or deterioration, at time of substantial completion.

END OF SECTION 08 12 00

SECTION 08 71 00 – DOOR HARDWARE

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 commercial door hardware for the following:

1. Thresholds, protection plates, and weatherseals.
2. Other doors to the extent indicated.

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

1.4 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.5 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

PART 2 - PRODUCTS

2.1 PROTECTIVE TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.

2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.

3. Protection Plates: ANSI/BHMA A156.6 certified protection plates (kick, armor, or mop), fabricated from the following:

    a. Stainless Steel: 300 grade, 050-inch thick.

4. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.

5. Acceptable Manufacturers:

    a. Ives (IV).
    b. Rockwood Manufacturing (RO).
    c. Trimco (TC).

2.2 DOOR GASKETING AND WEATHERSTRIP

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.

1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and UBC 7-2, Fire Tests of Door Assemblies.

D. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

E. Acceptable Manufacturers:

1. National Guard Products (NG).
2. Pemko Manufacturing (PE).
3. Reese Enterprises, Inc. (RE).

2.3 THRESHOLDS

A. Set thresholds for exterior and acoustical openings in full bed of sealant with lead expansion shields and stainless steel machine screws complying with requirements specified in Division 7 Section "Joint Sealants". Notched in field to fit frame by hardware installer. Refer to Drawings for special details. Manufacturer to be certified by the following:
   1. Thresholds: ANSI/BHMA A156.21.
   2. Americans with Disabilities Act Accessibility Guidelines (ADAAG).

B. Acceptable Manufacturer:
   1. Hager Companies: 413S/520S.

2.4 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.5 FINISHES

A. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 INSTALLATION

A. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

B. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

C. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.3 FIELD QUALITY CONTROL

A. Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

3.4 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.5 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

B. Clean adjacent surfaces soiled by door hardware installation.

C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

END OF SECTION 08 71 00

SECTION 09 65 19 - RESILIENT TILE FLOORING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Requirements including but not limited to:
   1. Luxury vinyl floor tile.
   2. Rubber base.
   3. Accessories necessary for a complete installation.

1.2 SUBMITTALS

A. Product Data: Technical data for each type of product including manufacturer's installation instructions.

B. Shop Drawings: For each type of floor tile. Include floor tile layouts, edges, columns, doorways, enclosing partitions, built in furniture, cabinets, and cutouts.
   1. Show details of special patterns.

C. Samples: Full size units of each color and pattern of floor tile required.

D. Product Schedule: Submit for floor tile using same designations indicated on Drawings.

E. Maintenance Data: Submit for inclusion in maintenance manuals.

1.3 QUALITY ASSURANCE

A. Regulatory Requirements:
   1. Fire Test Response Characteristics: For resilient tile flooring, as determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
      a. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.
      b. Smoke Density: Maximum specific optical density of 450 per ASTM E 662 or NFPA 258.
      c. Flame Spread: Maximum 75 per ASTM E 84.
      d. Smoke Developed: Maximum 450 per ASTM E 84.
   2. Accessibility Requirements: Comply with applicable requirements.
      a. U.S. Architectural and Transportation Barriers Compliance Board Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG).
      b. ICC/ANSI A117.1 Accessible and Useable Building and Facilities.
      c. Texas Accessibility Standards (TAS) 2012.

B. Installer Qualifications: Entity having minimum 5 years documented experience who employs workers competent in techniques required by manufacturer for floor tile installation and seaming method indicated.

C. Source Limitations:
   1. Tile: Obtain floor products of same type and color or finish from one source or producer. Obtain tile from same production run and of consistent quality in appearance and physical properties for each contiguous area.
   2. Setting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from a single manufacturer and each aggregate from one source or producer.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Store floor tile and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 degrees F (10 degrees C) or more than 85 degrees F (29 degrees C). Store floor tiles on flat surfaces.

1.5 FIELD CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 degrees F (21 degrees C) or more than 85 degrees F (29 degrees C), in spaces to receive floor tile during the following time periods:
   1. 48 hours before installation.
   2. During installation.
   3. 48 hours after installation.

B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 degrees F (13 degrees C) or more than 95 degrees F (35 degrees C).

C. Close spaces to traffic during floor tile installation.

D. Close spaces to traffic for 48 hours after floor tile installation.

E. Where demountable partitions, cabinets, and similar items are indicated for installation on top of resilient tile flooring, install tile before these items are installed.

F. Do not install flooring over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive, as determined by flooring manufacturer's recommended bond and moisture test.

G. Install flooring after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Basis of Design Product: Manufacturers and tile series, pattern, and color selections are indicated in the Finish Schedule and are a basis of design. Subject to compliance with requirements, provide product indicated in Finish Schedule or comparable product by one of the following:
   1. Luxury Vinyl Tile (LVT):
      a. Basis of Design: Armstrong World Industries, Inc or comparable product.
   2. Rubber Base:
      a. Basis of Design: Roppe Corp. or comparable product.

B. Luxury Solid Vinyl Tile (LVT): ASTM F 1700.
   1. Class: Class I, monolithic vinyl tile.
   2. Type: A, smooth surface and B, embossed surface.
   3. Thickness: 0.125 inch (3.2 mm).
   4. Size: 12 inch (304.8 mm) x 12 inch (304.8 mm).
   5. Color: Natural Creations Mystix Aria Natural TP780
   6. Pattern: Horizontal Ashlar.
   7. Construction: Heterogeneous Resilient Flooring with .020” high density wear layer.

C. Rubber Base: ASTM F1861.
   1. Material: Rubber, vulcanized, Type TS, Group I, Styles A and B.
   2. Manufacturing Method: Group I (solid, homogeneous).
   3. Style: Topset cove; minimum 100 foot coil, cut to length required.
   4. Minimum Thickness: 0.125 inch (3.2 mm).
   5. Color: Match existing.
   6. Height: 4 inches, unless indicated otherwise.
   7. Outside Corners: Job formed.
   8. Inside Corners: Job formed.

D. Trowelable Leveling and Patching Compounds: Latex modified, portland cement based formulation provided or approved by floor tile manufacturer for applications indicated. Refer to Section 035400.

E. Adhesives: Water resistant type recommended by floor tile and adhesive manufacturers to suit floor tile and substrate conditions indicated.

F. Floor Polish: Provide protective, liquid floor polish products recommended by floor tile manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates for compliance with requirements for maximum moisture content and other conditions affecting performance of the work.
   1. Verify that finishes of substrates comply with tolerances and other requirements specified for other work and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.

B. Proceed with installation after correcting unsatisfactory conditions. Installation of resilient flooring and accessories indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Prepare substrates according to floor tile manufacturer's written instructions to ensure adhesion of resilient products.

B. Concrete Substrates: Prepare according to ASTM F 710.
   1. Verify substrates are dry and free of curing compounds, sealers, and hardeners.
   2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by floor tile manufacturer. Do not use solvents.
   3. Alkalinity and Adhesion Testing: Perform tests recommended by floor tile manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
   4. Moisture Testing: Proceed with installation only after substrates pass testing according to floor tile manufacturer's written recommendations, but not less stringent than the following:
      a. Perform anhydrous calcium chloride test according to ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
      b. Perform relative humidity test using in situ probes according to ASTM F 2170. Proceed with installation only after substrates have a maximum **75** percent relative humidity level.

5. Bond Test: Bond 3' x 3' panels spaced 50 feet apart throughout subfloor area. After moisture test proves floor acceptably dry, install panels using adhesive. If panels are securely bonded after 72 hours, subfloor is sufficiently clean of foreign materials for satisfactory installation of resilient flooring.

C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

D. Do not install floor tiles until they are the same temperature as the space where they are to be installed.
1. At least 48 hours in advance of installation, move resilient floor tile and installation materials into spaces where they will be installed.

E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient floor tile.

3.3 INSTALLATION

A. Comply with manufacturer's written instructions for installing flooring. Scribe and cut flooring to butt neatly and tightly to vertical surfaces, permanent fixtures, and built in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Extend flooring into toe spaces, door reveals, closets, and similar openings.

B. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on flooring as marked on substrates. Use chalk or other nonpermanent marking device.

C. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one/half tile at perimeter.
1. Lay tiles square with room axis.

D. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.
1. Lay tiles with grain running in one direction.

E. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built in furniture, cabinets, pipes, outlets, and door frames.

F. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.

G. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent marking device.

H. Install floor tiles on covers for telephone and electrical ducts, building expansion-joint covers, and similar items in finished floor areas. Maintain overall continuity of color and pattern between pieces of tile installed on covers and adjoining tiles. Tightly adhere tile edges to substrates that abut covers and to cover perimeters.

I. Adhere floor tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

J. Floor Tile: Comply with manufacturer's written instructions for installing floor tile.

1. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one/half tile at perimeter.
   a. Lay tiles square with room axis unless pattern indicated for an area.
2. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles. Lay tiles with grain running in one direction.

K. Resilient Base: Comply with manufacturer's written instructions for installing resilient base. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
1. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.
2. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
3. Do not stretch resilient base during installation.
4. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.
5. Preformed Corners: Install preformed corners before installing straight pieces.
6. Job Formed Corners:
   a. Outside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches (76 mm) in length.
   b. Form without producing discoloration (whitening) at bends.
   c. Inside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches (76 mm) in length.
      1) Miter or cope corners to minimize open joints.

L. Resilient Accessories: Comply with manufacturer's written instructions for installing resilient accessories.
1. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

3.4 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protecting floor tile.

B. Perform the following operations immediately after completing floor tile installation:
1. Remove adhesive and other blemishes from exposed surfaces.
2. Sweep and vacuum surfaces thoroughly.
3. Damp mop surfaces to remove marks and soil.

C. Protect floor tile from mars, marks, indentations, and damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Floor Polish: Remove soil, adhesive, and blemishes from floor tile surfaces before applying liquid floor polish. Apply two coat(s).

E. Sealers and Finish Coats: Remove soil, visible adhesive, and surface blemishes from resilient terrazzo floor tile surfaces before applying liquid cleaners, sealers, and finish products.
1. Sealer: Apply two base coats of liquid sealer.
2. Finish: Apply two coats of liquid floor finish.

F. Cover floor tile until Substantial Completion.

G. Clean floor surfaces not more than 4 days before dates scheduled for inspections intended to establish date of Substantial Completion in each area of Project. Clean products according to manufacturer's written recommendations.
   1. Before cleaning, strip protective floor polish.
   2. Reapply polish to floor surfaces to restore protective floor finish according to flooring manufacturer's written recommendations.

END OF SECTION 09 65 19

SECTION 09 90 00 - PAINT AND COATING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes: Requirements including but not limited to:
   1. Surface preparation and field painting of exposed items and surfaces.
   2. Field preparation and painting of factory primed metal products and fabrications.
   3. Accessories necessary for a complete installation,

1.3 DEFINITIONS

A. Standard coating terms defined in ASTM D 16 apply.
   1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85 degree meter.
   2. Eggshell refers to low sheen finish with a gloss range between 20 and 35 when measured at a 60 degree meter.
   3. Semigloss refers to medium sheen finish with a gloss range between 35 and 70 when measured at a 60 degree meter.
   4. Full gloss refers to high sheen finish with a gloss range more than 70 when measured at a 60 degree meter.

1.4 SUBMITTALS

A. Product Data: Submit technical data and information for block fillers, primers, paints, and coatings, including label analysis and instructions for handling, storing, and applying each coating material proposed for use.
   1. Indicate manufacturer's instructions for special surface preparation procedures, substrate conditions requiring special attention.
   2. Material List: Provide inclusive list of required coating materials. Indicate each material and cross reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number, series, and general classification.

B. Samples: Submit for each type of paint system and in each color and gloss of topcoat.
   1. Provide stepped samples, defining 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.
   2. Provide list of material and application for each coat of each sample. Label each sample as to location and application.
   3. Submit samples on following substrates for review of color and texture only:
      a. Painted Wood: Provide two 12 inch square samples of each color and material on hardboard.
      b. Ferrous and Nonferrous Metals: Provide two 4 inch square samples of flat metal and two 8 inch long samples of solid metal for each color and finish.

C. Product List: Submit list of including each paint system, color, and location of application. Use same product and location designations indicated in Finish Schedule.

1.5 QUALITY ASSURANCE

A. Regulatory Requirements:
   1. Comply with Federal and local toxicity and air quality regulations and with Federal requirements on content of for heavy metals including but not limited to: lead and mercury. Do not use solvents in paint products that contribute to air pollution.
   2. Performance and Durability:
      a. ASTM D 16 Standard Test Method for Load Testing Refractory Shapes at High Temperatures.
      b. ASTM D 2486 Standard Test Method for Scrub Resistance of Interior Wall Paint.
      c. ASTM D 2805 Standard Test Method for Hiding Power of Paints by Reflectometry.
      d. ASTM D 4828 Standard Test Method for Practical Washability of Organic Coatings.

B. Applicator Qualifications: A firm or individual having minimum 5 years documented experience in applying paints and coatings similar in material, design, and extent to those indicated.

C. Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well ventilated areas with ambient temperatures continuously maintained at not less than 45 degrees F (7 degrees C).
   1. Maintain containers in clean condition, free of foreign materials and residue.
   2. Remove rags and waste from storage areas daily.

1.7 FIELD CONDITIONS

A. Apply waterborne paints when temperatures of surfaces to be painted and surrounding air are between 50 degrees F and 90 degrees F (10 degrees and 32 degrees C).

B. Do not thin or add water to waterbased paints, including waterbased alkyds.

C. Weather Conditions:
   1. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
   2. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85 percent; or at temperatures less than 5 degrees F (3 degrees C) above dew point; or to damp or wet surfaces.
   3. Minimum Application Temperatures for Water based Paints: Between 50 degrees F (10 degrees C) and 90 degrees F (32 degrees C).

D. Apply solvent thinned paints when temperatures of surfaces to be painted and surrounding air are between 45 degrees F. and 95 degrees F (7 degrees F and 35 degrees C).
   1. Minimum Application Temperature for Varnish Finishes: 65 degrees F (18 degrees C) for interior or exterior, unless required otherwise by manufacturer's instructions.
   2. 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.

E. Provide lighting level of 80 foot candles (860lx) measured midheight at substrate surface.

F. Labels: Do not paint over Underwriters Laboratories, Factory Mutual, other code required labels, or equipment name, identification, performance rating, or nomenclature plates.

1.8 WARRANTY

A. Written warranty signed by the manufacturer and the installer in which the manufacture and installer agree to repair or replace paint and primers that fail within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Flaking or delamination of paint with the substrate.
      b. Rust, scale, similar imperfections due to improper surface preparation.
      c. Thinning or watering of paint beyond that considered acceptable of paint manufacturer.
      d. Failure to achieve dry film thickness (DFT) recommended by manufacturer for each coat in a paint system.
      e. Deterioration or loss of color of paint beyond normal weathering.

   2. Warranty Period: One year from date of Substantial Completion.

1.9 EXTRA MATERIALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Paint: 2 percent, but not less than 1 gallon (3.8 L) of each material and color applied.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Basis of Specifications: Sherwin Williams paints. Subject to compliance with requirements, provide first quality, 100% acrylic, commercial or industrial products of one of the specified manufacturers. Residential products are not permitted.
   1. Proprietary Names: Paint Schedule is based on a single manufacturer for convenience. Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that named products are required to the exclusion of comparable products of specified manufacturers. Furnish product technical data, including per cent solids by weight and volume; VOC content limits and emissions data; and certificates of performance for comparable paint products of specified manufacturer.
   2. Paint Products:
      a. PPG Industries, Inc.
      b. Sherwin-Williams Co.

B. Material Compatibility: Provide each paint system including block fillers, primers, and finish coats, that are compatible with one another and with substrates indicated under conditions of service and application, demonstrated by manufacturer based on testing and field experience.

C. Material Quality: Provide manufacturer's best quality commercial paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint material containers not displaying manufacturer's product identification will not be acceptable. Residential quality paint products are not permitted.

D. Chemical Components of Interior Paints and Coatings: Provide products complying with limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
   1. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
   2. Restricted Components: Paints and coatings shall not contain components restricted by the EPA.

E. Accessories: Materials not specifically indicated but required to achieve the finishes specified, of commercial quality.

F. Patching Materials: Latex filler compatible with paint systems.

G. Fastener Head Cover Materials: Latex filler.

H. Colors: Determined by Owner for each individual school.

2.2 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: Owner reserves the right to invoke to engage the services of a qualified testing agency to sample paint materials.
   1. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to site, samples may be taken at the site. Samples will be identified, sealed, and certified by testing agency.
   2. Testing agency will perform tests for compliance with product requirements.
   3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions for compliance with requirements for maximum moisture content and conditions affecting performance of the work.

B. Test substrates after repairing and cleaning substrates but prior to application of paint and coatings.
   1. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
      a. Wood: 15 percent.
      b. Gypsum Board: 12 percent.
      c. Plaster: 12 percent.

C. Gypsum Board Substrates: Verify taped joints are tapes and finishing compound is sanded smooth.

D. Plaster Substrates: Verify plaster has fully cured. Verify existing plaster is in good condition and can receive new paint coating.

E. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
   1. Verify previously painted surfaces can be stripped to bare substrate, repaired if necessary, and prepared to receive new paint system consisting of primer and two top coats at a minimum.
      a. Note: Previously painted surfaces have failed to accept new paint systems. Determined cause of failure and take corrective measures to ensure each surface accepts new paint system. Failure of new paint system is not permitted.

F. Commence paint and coating application after correcting unsatisfactory conditions and surfaces are dry. Application of coating indicates applicator's acceptance of surfaces and conditions.

3.2 PREPARATION

A. Coordination of Work: Review work in which primers are provided to ensure compatibility of the total system for various substrates. Notify Architect of anticipated problems when using materials specified over substrates primed by others.
   1. Preprimed Substrates: Inspect existing conditions in which primers are factory applied to ensure compatibility of the total system for each substrate. Notify Architect of anticipated problems when using the materials specified over factory primed or preprimed substrates.
   2. Existing Painted Surfaces: Inspect previously painted surfaces to ensure compatibility of the existing paints with new paint system for each substrate. Notify Architect of anticipated problems.
   3. Correct defects and clean surfaces affecting bond with paint system. Remove existing paints exhibiting loose surface defects showing signs of rust, scale, or delamination.
   4. Seal marks which may bleed through surface finishes.

B. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified. Provide barrier coats over incompatible primers or remove and reprime. If removal is impractical or impossible because of size or weight of item, provide surface applied protection before surface preparation and painting
   1. Remove hardware and hardware accessories, plates, lighting fixtures, and similar items that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface applied protection before surface preparation and painting. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
   2. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface applied protection if any.
   3. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
   4. Clean and prepare surfaces to receive paint according to manufacturer's written instructions for each substrate condition and as specified. Provide barrier coats over incompatible primers, existing paint or coating, or remove and reprime.
   5. Correct defects and clean surfaces affecting bond with paint or coating system. Remove existing coatings exhibiting loose surface defects. Seal marks which may bleed through surface finishes.

C. Cleaning: Before applying paint or surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning. Schedule cleaning and painting so dust and contaminants from the cleaning process will not fall on wet, newly painted surfaces.
   1. Remove incompatible primers, including factory applied primers, and reprime substrate with compatible primers or apply barrier coat as necessary to produce paint systems indicated.
   2. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
   3. Steel Substrates: Remove rust and loose mill scale. Clean using methods recommended in writing by paint manufacturer.
   4. Galvanized Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
   5. Aluminum Substrates: Remove surface oxidation.

D. Mildew and Mold Removal: Remove mildew and mold by high power washing (pressure range of 1500 to 4000 psi) with solution of trisodium phosphate and bleach. If substrate is too soft for high power washing, scrub substrate with solution. Rinse with clean water and allow surface to dry.

E. Protective Coverings: Provide protections for duration of the work, including covering furnishings and decorative items. Protect and mask adjacent finishes and components against damage, marking, overpainting, and injury. Clean and repair or replace damage caused by painting.

F. Renovated Surfaces: Clean surface free of loose dirt and dust. Except at gypsum board surfaces, remove existing paint and coatings to bare substrate and prepare substrates to receive new paint system. Test substrate to verify it will bond with primer and receive new paint system without failure. If test fails, clean surface to base substrate and apply barrier coat. Retest to verify surface will accept new paint system.
1. Remove surface film preventing proper adhesion and bond.
2. Wash glossy paint with a solution of sal soda and rinse thoroughly.
3. Remove loose, blistered, and defective paint and varnish; smooth edges with sandpaper.
4. Clean corroded iron and steel surfaces.
5. Repair and blend into portland cement plaster.
6. Prime bare surfaces.
7. Tone varnished surfaces with stain bringing to uniform color.
8. If existing surfaces cannot be put in acceptable condition for finishing by customary cleaning, sanding, and puttying operations, notify Owner and do not proceed until correcting unsatisfactory conditions.

G. Ferrous Metals: Clean ungalvanized ferrous metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC recommendations.
1. Blast steel surfaces clean as recommended by paint system manufacturer and according to SSPC-SP 6/NACE No. 3.
2. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
3. Touch up bare areas and shop-applied prime coats that have been damaged. Wire brush, clean with solvents recommended by paint manufacturer, and touch up with same primer as the shop coat.

H. Galvanized Ferrous Metal Substrates: Clean galvanized surfaces with nonpetroleum based solvents leaving surface free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

I. Shop Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop primed surfaces.

J. Aluminum Substrates: Clean surfaces to remove oil, grease, surface oxidation, and contaminants in accordance with SSPC SP-1 Solvent Cleaning. Lightly abrade surface with a nonmetallic pad.

K. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.

L. Plaster/Stucco Substrates: Remove contaminants, release agents, curing compounds, efflorescence, chalk, mold, mildew, and similar deterrents. Spot patch existing plaster to

eliminate blisters, buckles, excessive crazing, and to check cracking, dryouts, efflorescence, sweat outs, and similar deflects the prevent plaster from bonding with paint or coatings. Sand or texture repair or patch to match adjacent finish and to remove trowel marks and arrises.

1. Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
2. Deep Cracks: Clean out and fill deep cracks with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
3. Do not paint surfaces if moisture content or alkalinity of surfaces exceeds that permitted in manufacturer's written instructions. Test for alkali using litmus paper.
4. Allow patching and repair compounds to set and cure before painting.

M. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.

N. Wood Substrates:
1. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime, stain, or seal wood to be painted. Prime edges, ends, faces, undersides, and back sides of wood, including cabinets, counters, cases, and paneling.
4. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.
5. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

O. Pipe Covering and Insulation: Clean to remove loose, foreign, and objectionable material before applying sealing coat.

P. Preparation of Substrates for Wallcovering: Prime and seal substrate with release coat in accordance with wallcovering manufacturer's recommendations for substrate.
1. Assure compatibility with product of wall covering manufacturer.
2. Fill indentations in substrate and prime with opaque white primer before applying release coat.
3. Apply release coat in accordance with manufacturer's recommendations.

Q. Barrier Coat: Provide barrier coats over incompatible primers or remove and reprime. Notify Owner in writing of anticipated problems using specified finish coat material over previously coated substrates.

R. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
3. Do not use thinners for water based paints.
4. Tinting: Tint each undercoat a lighter shade to facilitate identification of each coat where multiple coats of the same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.3 APPLICATION

A. Comply with manufacturer's written instructions and recommendations applicable to substrates and paint systems indicated.
   1. The term *exposed surfaces* includes areas visible when permanent or built in fixtures, grilles, convector covers, covers for finned tube radiation, and similar components are in place. Extend coatings in these areas to maintain system integrity and provide desired protection.
   2. Use applicators and techniques suited for paint and substrate indicated.
   3. Provide finish coats compatible with primers.
   4. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
   5. Paint exposed surfaces. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces.
      a. Field painting of exposed surfaces include bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron supports, and surfaces of mechanical and electrical equipment that do not have a factory applied final finish.
      b. Areas visible when permanent or built in fixtures, grilles, convector covers, covers for finned tube radiation, and similar components are in place.
      c. Extend coatings in areas, as required, to maintain system integrity and provide desired protection.
   6. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
   7. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
   8. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
   9. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
   10. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or surface imperfections. Cut in sharp lines and color breaks.
   11. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
   12. Provide finish coats compatible with primers used.
   13. Sand lightly between each succeeding enamel or varnish coat.

B. Items not to Receive Paint: Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.

C. Applicators: Apply paints and coatings by brush, roller, spray, or applicators recommended by manufacturer.
   1. Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.
   2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool recommended by manufacturer for material and texture required.
   3. Spray Equipment: Use airless spray equipment with orifice size recommended by manufacturer for material and texture required.

D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.

1. Measure film thickness on magnetic surfaces by use of Elcometer thickness gauge and on nonmagnetic surfaces by pit gauge or Tooke Gauge.

E. Application: Apply first coat to surfaces that have been cleaned, pretreated, or prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer.
2. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished after removing rust and scale and priming or touching up surface sand if acceptable to topcoat manufacturers.
3. If undercoats, stains, or conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive dry film thickness equivalent to that of flat surfaces.
4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried and cured to where it feels firm, and does not deform or feel sticky under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.

F. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.
1. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
2. Prime and paint uninsulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, heat exchangers, tanks, ductwork, conduit, switchgear, and paintable insulation except where items are prefinished.
3. Paint interior surfaces of air ducts, and convector and baseboard heating cabinets visible through grilles and louvers with one coat of flat black paint, to visible surfaces. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.
4. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.
5. Color code equipment, piping, conduit, and exposed duct work in accordance with requirements indicated. Color band and identify with flow arrows, names, and numbering.
6. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.
7. Concealed Members: Wherever steel and metal parts to receive paint are built into and concealed by construction, paint as specified for exposed parts so finish painting is complete before members are concealed.

G. Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work: Painting is limited to items exposed in equipment rooms and occupied spaces.
1. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
2. Prime and paint uninsulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, heat exchangers, tanks, ductwork, conduit, switchgear, and paintable insulation except where items are prefinished.
3. Paint interior surfaces of air ducts, and convector and baseboard heating cabinets visible through grilles and louvers with one coat of flat black paint, to visible surfaces. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.
4. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.
5. Color code equipment, piping, conduit, and exposed duct work in accordance with requirements indicated. Color band and identify with flow arrows, names, and numbering.

6. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

H. Block Fillers: Apply block fillers to concrete masonry block at rate to ensure complete coverage with pores filled.

I. Prime Coats: Before applying finish coats, apply prime coat, recommended by manufacturer, to material required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn through or defects due to insufficient sealing.

J. Finish Coats: Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance without bleed through.
1. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or surface imperfections is not acceptable.
2. Transparent (Clear) Finishes: Use multiple coats to produce glass smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections. Provide satin finish for final coats.

K. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

L. Touch Up: Touch up marred, scraped, and blemished areas of surfaces which were factory primed or previously coated.
1. Prepare and touch up scratches, abrasions, and blemishes and remove foreign matter before proceeding with succeeding coats.
2. Touch up marred, scraped, and blemished areas of factory primed or previously coated surfaces.
3. Feather touch up coating overlapping minimum 2 inches onto adjacent unblemished areas producing smooth, uniform surface.
4. As soon after erection and installation as possible, touch up fasteners, welded surfaces and surroundings, field connections, and areas on which shop coat has been abraded or damaged with specified primer before corrosion and other damage occurs from exposure.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness (DFT) Testing: Tests for dry film thickness may be determined by using a Tooke Scale and microgroover, an electronic scanner, or the Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
1. Contractor shall touch up and restore painted surfaces damaged by testing.
2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

A. It is of the upmost important to the AISD that the sites remain in a safe, clean, and well maintained condition. At the end of each day, leave the site ready to use by staff and students. Protect staff and students and the learning environment throughout the work.

B. Cleanup: At the end of each day, remove empty cans, rags, rubbish, and discarded paint materials from site. After completion of painting work, clean glass and paint spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. Provide *Wet Paint* signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work. After related work is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

E. At completion of painting activities, touch up and restore damaged or defaced painted surfaces.

F. Waste Management: Legally dispose of unused paint and paint containers in accordance with manufacturer's recommendations and environmental regulations.

3.6 PAINT AND COATING SCHEDULE

A. Exterior Paint Schedule:

1. Ferrous Metal: 3 coat system, Semigloss finish

Primer: DFT Minimum 3.0 mils
VOC: 150 g/l
% Solids, Volume: 46%
% Solids, Weight: 61%
First Coat: DFT Minimum 4.0 mils
VOC: 50 g/l.
% Solids, Volume: 40%
% Solids, Weight: 51%
Second Coat: DFT Minimum 4.0 mils
VOC: 50 g/l.
% Solids, Volume: 40%
% Solids, Weight: 51%
Primer: DTM Acrylic Primer/Finish B66W1
First Coat: Sher-Cryl High Performance Acrylic B66-350 Series or Pro Industrial DTM B66-1100 Series
Second Coat: Sher-Cryl High Performance Acrylic B66-350 Series or Pro Industrial DTM B66-1100 Series

B. Interior Paint Schedule:

Ferrous Metal, 3 coat system, Eggshell Finish:

Primer: DFT Maximum 5.0 mils
VOC: 132 g/l
% Solids, Volume: 42%
% Solids, Weight: 49%
First Coat: DFT Minimum 1.7 mils
VOC: 50 g/l.
% Solids, Volume: 43%
% Solids, Weight: 54%
Second Coat: DFT Minimum 1.7 mils
VOC: 50 g/l.
% Solids, Volume: 43%

% Solids, Weight: 54%
Primer: DTM Acrylic Primer/Finish B66W1 series
First Coat: Promar 200 Latex Interior Eggshell B20-2600 Series
Second Coat: Promar 200 Latex Interior Eggshell B20-2600 Series

Ferrous Metal, 3 coat system, Semigloss Finish:
Primer: DFT Maximum 5.0 mils
VOC: 132 g/l
% Solids, Volume: 42%
% Solids, Weight: 44%
First Coat: DFT Minimum 1.6 mils
VOC: 50g/l.
% Solids, Volume: 39%
% Solids, Weight: 50%
Second Coat: DFT Minimum 1.6 mils
VOC: 50 g/l.
% Solids, Volume: 39%
% Solids, Weight: 50%
Primer: DTM Acrylic Primer/Finish B66W1 series
First Coat: Promar 200 Latex Interior Semigloss B31-2600 Series
Second Coat: Promar 200 Latex Interior Semigloss B31-2600 Series

Ferrous Metal, 2 coat Dryfall, Eggshell finish
Primer: DFT Minimum 2 mils
VOC: 100 g/l
% Solids, Volume: 39%
% Solids, Weight: 53%
First Coat: DFT Minimum 4.5 mils.
VOC: <100 g/l.
% Solids, Volume: 41%
% Solids, Weight: 58%
Primer: Pro Industrial ProCryl Universal Primer B66-310
First Coat: Waterborne Acrylic Dryfall, B42 series

Gypsum Board, 3 Coat System, Semigloss Finish:
Primer: DFT Minimum 1.0.0 mils
VOC: 50 g/l
% Solids, Volume: 26%
% Solids, Weight: 44%
First Coat: DFT Minimum 1.6 mils
VOC: 50g/l.
% Solids, Volume: 39%
% Solids, Weight: 50%
Second Coat: DFT Minimum 1.6 mils
VOC: 50 g/l.
% Solids, Volume: 39%
% Solids, Weight: 50%
Primer: Promar 200 Interior Latex Primer B28-2600 Series
First Coat: Promar 200 Latex Interior Semigloss B31-2600 Series
Second Coat: Promar 200 Latex Interior Semigloss B31-2600 Series

Wood, 2 Coat System, Semigloss Finish:
Resin: 100% Acrylic
Primer: DFT Minimum 2.0 mils
VOC: 2 g/l
% Solids, Volume: 34%

% Solids, Weight: 50%
First Coat: DFT Minimum 1.6 mils
VOC: 50g/l.
% Solids, Volume: 39%
% Solids, Weight: 50%
Second Coat: DFT Minimum 1.6 mils
VOC: 50 g/l.
% Solids, Volume: 39%
% Solids, Weight: 50%
Primer: Premium Wall and Wood Primer
First Coat: Promar 200 Latex Interior Semigloss B31-2600 Series
Second Coat: Promar 200 Latex Interior Semigloss B31-2600 Series

Plastic Laminate, 2 Coat System, Semigloss Finish:
Resin: 100% Acrylic
Primer: DFT Minimum 3.1 mils
VOC: 50 g/l
% Solids, Volume: 30%
% Solids, Weight: 47%
First Coat: DFT Minimum 1.6 mils
VOC: 50g/l.
% Solids, Volume: 39%
% Solids, Weight: 50%
Second Coat: DFT Minimum 1.6 mils
VOC: 50 g/l.
% Solids, Volume: 39%
% Solids, Weight: 50%
Primer: Premium Wall and Wood Primer
First Coat: Promar 200 Latex Interior Semigloss B31-2600 Series
Second Coat: Promar 200 Latex Interior Semigloss B31-2600 Series

C. Colors:
1. Field Paint**:** SW 7021 Simple White
2. Metal Door Paint: SW 7047 Porpoise
3. Painted Wood Millwork: SW 7046 Anonymous

END OF SECTION 09 90 00

SECTION 12 35 53 - LABORATORY CASEWORK

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes
   1. Wood casework.
   2. Epoxy resin work surfaces.
   3. Chemical resistant laminated plastic work surfaces.
   4. Accessory items as specified herein.

1.3 REFERENCES

A. American Disabilities Act (ADA)
   1. American Disabilities Act Design Guidelines (ADADG)

B. American National Standards Institute (ANSI)
   1. American National Standards Publications

C. American Woodwork Institute
   1. Architectural Woodwork Quality Standards

D. SEFA (Scientific Equipment and Furniture Association) standards.
   1. SEFA 1.2 – Fume Hoods
   2. SEFA 2.3 – Installation of Scientific Laboratory Furniture and Equipment.
   3. SEFA 3 – Work Surface.
   4. SEFA 8 – Laboratory Furniture

1.4 DEFINITIONS

A. Definitions of cabinet components by surface visibility:
   1. Exposed Surfaces:
      a. Surfaces visible when drawers and solid doors are closed.
      b. Surfaces visible behind clear glass doors.
      c. Interior surfaces of open units.
      d. Bottoms of cabinets 42 inches or more above finished floor.
      e. Tops of cabinets less than 78 inches above finished floor, or are visible from an upper floor or staircase after installation.
      f. Front edges of cabinet body members visible though a gap greater than 1/8 inch with doors and drawers closed.
      g. Surfaces visible when fixed appliances are installed.
   2. Semi-exposed Surfaces:
      a. Surfaces visible when doors are open.
      b. Bottoms of cabinets 30 inches - 42 inches above finished floor.

c. All front edges of shelving behind doors.

3. Concealed Surfaces:

a. Surfaces not normally visible after installation.

b. Bottoms of cabinets less than 30 inches above finished floor.

c. Tops of cabinets over 78 inches above finished floor which are not visible from an upper level.

d. Stretchers, blocking, components concealed by drawers.

1.5 SUBMITTALS

A. Manufacturer's Compliance Statement:

1. Pre-qualified manufacturers whose name appears below under acceptable Manufacturers shall provide statement of compliance as scheduled by General Contractor; or

2. Manufacturers requesting substitution of products shall submit statement of compliance at proposal time in accordance with Division 1 requirements for substitutions.

B. Shop Drawings: Provide large scale plans and elevations of casework, cross sections, rough-in and anchor placements, tolerances and clearances. Indicate relationship of units to windows, doors, surrounding walls and other building components.

C. Product Data: Submit manufacturer's catalog for reference. Include cabinet dimensions, configurations, construction details, joint details, attachment details, and rough-in details as required.

D. Product Samples to be submitted for approval (One (1) each):

1. Worktop: Four (4) inch x four (4) inch sample of each material.

2. Finish: Three (3) inch x five (5) inch sample of each available standard stain color with finish for Architect’s selection.

3. Provide an actual sample of a cabinet in the color and finish selected for Architect’s approval. Approved cabinet color and finish will be basis for which all work will be judged. Approved sample cabinet may be used in the work. All cabinets shall match in color and finish to that of the approved sample and if found to vary in color, i.e., too light or too dark shall be refinished to match approved sample at no expense to Owner.

4. Hardware: Pulls, locks and hinges. Locks shall be keyed alike and masterkeyed to Owner’s keying system as specified in Section 08 71 00, “Door Hardware”.

1.6 QUALITY ASSURANCE

A. Single source: Casework and fume hoods to be manufactured and furnished by a single laboratory furniture company.

B. Manufacturer's qualifications: Modern plant with proper tools, dies, fixtures and skilled production staff to produce high quality laboratory casework and fume hoods, and shall meet the following minimum requirements:

1. Minimum of ten (10) years experience in manufacture of wood laboratory casework and fume hoods.

2. Ten (10) installations of equal or larger size.

C. Installer qualifications: Certified by the manufacturer.

D. Manufacturer to provide load test results certified by an independent testing laboratory for

drawers, doors, suspension slides and unit shelving.

E. Casework construction and performance characteristics shall be in full compliance with SEFA 8 standards. At the Owner's request, independent, third part testing must be submitted validating compliance and adheres to the architectural specifications.

1.7 PROJECT CONDITIONS

A. Do not deliver or install wood product until the following conditions are met:

1. Windows and doors are installed and the building is secure and weathertight.
2. Ceiling, overhead ductwork and lighting are installed.
3. All painting is completed and floor tile is installed.
4. Interior building temperature to be between 65 degrees F and 80 degrees F, and ambient relative humidity maintained between 25 percent and 55 percent prior to delivery, and during and after installation. Frequent and/or excessive changes in temperature and/or humidity levels during casework installation, or once casework is installed, shall be avoided to prevent damage to materials.

B. Field measurements shall be taken to verify that the equipment will fit into the designated space. Entryways, corridors and door openings shall be verified to ensure that the equipment be manufactured in a manner to permit it to be moved through properly into place.

1.8 DELIVERY, STORAGE AND HANDLING

A. Delivery: Schedule delivery so rooms are sufficiently complete that material can be installed immediately following delivery.

B. Casework: Protect finished surfaces from soiling or damage during handling and installation.

C. Work surfaces: Protect throughout the construction period.

1.9 WARRANTY

A. Warrant casework against becoming unserviceable or causing an objectionable appearance resulting from defects in materials and workmanship, including workmanship of installation. Materials provided by Casework Manufacturer shall carry a warranty for five (5) years from date of Substantial Completion. Other materials and equipment shall carry warranty by the product manufacturer.

B. Defects shall include, but not limited to:

1. Discoloration of finish.
2. Missing or loose parts.
3. Noisy or hard operation of moving parts.
4. Failure to meet specifications.

PART 2 - PRODUCTS

2.1 APPROVED PRODUCT/MANUFACTURERS

A. Design, materials, construction and finish of casework as specified represents the minimum acceptable standard of quality for wood laboratory casework.

B. Manufacturers listed who produce equivalent products to those specified are approved for use on this Project. Other manufacturers must have a minimum of five (5) years experience manufacturing equivalent products to those specified and comply with Division 1 requirements regarding substitutions to be considered.

1. Campbell Rhea Caseworks

2. Diversified Woodcrafts, Inc.
3. Kewaunee Scientific Corp.
4. Leonard Peterson & Co.
5. MGC Millwork
6. Sheldon Laboratory Systems
7. TMI Systems Design Corp.

C. Specifications are based on products manufactured by Sheldon Laboratory Systems**,** Crystal Springs, MS (601) 892-2731, to match existing.

2.2 CASEWORK DESIGN

A. Door and Drawer Design:

1. Lipped Overlay: partial overlay design with 3/8 inch reveals between door or drawer and frame, door to door, door to drawer, drawer to drawer; 7/16 inch vertical reveal between doors/drawers and cabinet ends.

B. Standard grain pattern on end panels is vertical.

C. Cabinet end panels exposed to view after installation shall be specified as a "finished end" panel. All end panels not exposed to view after installation shall be as listed under "unexposed" plywood.

D. Cabinets to be rigid, self-supporting design for use in assembly or as single, interchangeable stand-alone units.

E. Flush Interiors: Surface mounted bottoms and offsets caused by front face frames which interfere with ease of cleaning are not acceptable.

F. Joinery: 32mm doweled joinery system glued, clamped and screwed. Dowels are to be hardwood, laterally fluted with chamfered ends and a minimum diameter of 8mm.

G. Where shown or required, provide products conforming to ADADG for barrier-free design.

2.3 CASEWORK MATERIALS

A. Hardwood: Match existing.

B. Plywood: Match existing.

2.4 LABORATORY CASEWORK

A. Base Units:

1. Cabinet ends: 3/4 inch thick plywood with 3mm hardwood banding on front edges. Bore interior faces, as appropriate, for security panels, rails, and four rows of shelf support holes:

2. Levelers: Provide four (4) metal corner gusset levelers with threaded adjustment screws and floor pad on all base cabinets.

3. Top rails:

a. Full Top Frame:

1) Horizontal front top rail: One (1) inch x three (3) inch solid hardwood. Attach to cabinet ends with glued 8mm dowel joinery and screws.

2) Vertical back top rail: 3/4 inch x 3-3/4 inch hardwood. Attach to cabinet ends with glued 8mm dowel joinery and screws.

3) Top side rails: 3/4 inch x 1-1/2 inch hardwood between front

horizontal and back vertical rails, glued and screwed in place.

4. Intermediate rails: Front horizontal intermediate rail: 3/4 inch x 1-1/2 inch exposed hardwood rail to be provided between doors and drawers. Secure to cabinet end panels with glued 8mm dowel joinery.

5. Toe space rail: 3-3/4 inch x 3/4 inch hardwood or 7-ply veneer core plywood, mounted between end panels with glued 8mm dowel joinery and metal fasteners, forming a 4 inch high x 2-1/2 inch deep toe space, closed to cupboard bottom.

6. Bottoms: 3/4 inch thick plywood, set flush and joined to cabinet end panels with glued 8mm dowels on 96mm spacing and metal fasteners. Front edge to be banded with 3mm hardwood banding.

7. Backs:

   a. Cupboard units: One-piece 3/16 inch thick hardboard, rabbetted into rear top rail for easy removal from inside of cabinet.

   b. Drawer units: Open back.

   c. Sink units: Half-height, one piece 3/16 inch thick hardboard, rabbetted into rear rail for easy removal from inside of cabinet.

8. Vertical dividers in combination cabinets: 1-1/2 inch thick plywood panel (frames not permitted) glued and screwed in place, top and bottom, with 3mm hardwood banding on front edge.

9. Security panels: None required.

10. Shelves (for base units): Veneer core plywood, 3mm hardwood banded on front edge, adjustable on 32mm centers:

    a. Full-depth shelf, 17-3/4 inches deep.

    b. Thickness: 3/4 inch thick for all shelves up to and including 30 inches wide, one (1) inch thick for all shelves over 30 inches wide.

    c. 1/2 inch wide x 1/2 inch high raised lip on all four (4) sides of shelves for spill containment.

11. Drawer construction:

    a. Box: Four-sided drawer box with back, front and sides of 12mm (1/2 inch nominal) 9-ply Birch plywood with chemical-resistant finish and finished top edges. (Three-sided drawer box attached to outer drawer front is not acceptable.) Sides shall be joined by Lock joint, glued and pinned.

    b. Bottom: Nominal 1/4 inch, inset into all four (4) sides of drawer box and sealed with hot melt glue process around entire drawer bottom perimeter. Material to be white melamine-clad tempered hardboard.

12. Door and removable drawer front construction: 3 ply 3/4 inch thick (door) and 1/2 inch thick (drawer), particleboard core, hardwood framed all four (4) sides, face veneer on both surfaces, radiused edges all four (4) sides; doors to be routed on inside perimeter to allow 1/4 inch inset into door opening.

B. Hardware: Salvage and reuse. Any new hardware needed is to match existing.

1. keyed to Owner's keying system specified in Section 08 71 00 "Door Hardware".

2.5 SERVICE FITTINGS

A. Manufacturer: Sheldon Laboratory Systems or Architect approved equal.

B. All fixtures to be vandal resistant.

C. Laboratory Service Fittings:

1. Service fittings shall be laboratory grade, and water faucets and valve bodies shall be cast red brass alloy or bronze forgings, with a minimum content of 85%. All fittings shall be powder-coated epoxy unless specified otherwise.

D. Water Fittings:

1. Water fittings shall be provided with a renewable unit containing all operating parts which are subject to wear. The renewable unit shall contain an integral volume control device and all faucets shall be capable of being readily converted from compression to self-closing, without disturbing the faucet body proper. Four (4) arm forge brass handles shall contain plastic screw-on type colored service index buttons.

E. Ground Key Valve Hose Cocks:

1. Ground key type valves shall have forged body with 10 serration hose end. Handle plug shall be forged brass, long, tapered type with screw-on colored service index button. Valves shall be individually ground, lapped and sealed.

F. Needle Valve Hose Cocks:

1. Needle type valves shall have a stainless steel replaceable floating cone, precision finished and self-centering. Cone locates against a stainless steel seat, easily removable and replaced with a socket wrench. Valve shall have “Teflon” impregnated packing and designed so unit can be repacked while under pressure.

a. Air (12 35 53.FA#): Air Fixture with 1, 2 or 4 connections as indicated

b. Gas (12 35 53.FG#): Gas Fixture with 1, 2 or 4 connections as indicated

c. Vacuum (12 35 53.FV#): Vacuum Fixture with 1, 2 or 4 connections as indicated

G. Gooseneck Type Outlets: Gooseneck outlets shall have a separate brazed coupling to provide a full thread attachment of anti-splash, serrated tip or filter pump fittings.

1. Combination Cold Water / Gas (12 35 53.FCG):

a. Cold Water

b. Two (2) Gas Cocks

c. <Aerator><Serrated Hose Connection>

d. Vacuum Breaker

e. <Aspirator>

f. Wrist Blades at ADA Workstation

g. Approved Product/Manufacturer: Unicast Model No. 80020 fixtures as manufactured by Sheldon Laboratory Systems, or Architect approved equal.

H. Remote Control Valves: All valves for remote control use shall be as previously specified, but shall be complete with brass extension rods, escutcheon plates, brass forged handles and screw-on type colored service index button.

I. Tank Nipples: Tank nipples shall be provided with locking nut and washer for all fixtures where fittings are anchored to equipment.

J. Service Indexes: Fittings shall be identified with service indexes in the following color coding:

1.	Hot Water	Red
2.	Cold Water	Dark Green
3.	Gas	Dark Blue
4.	Air	Orange
5.	Vacuum	Yellow
6.	Distilled Water	White
7.	Steam	Black
8.	Nitrogen	Gray
9.	Oxygen	Light Green
10.	Hydrogen	Pink
11.	Special Gases	Light Blue

K. Electrical Fittings: Electrical fittings shall contain GFCI 20 Amp., 125 Volt AC, 3-wire polarized grounded receptacles, unless otherwise specified. Pedestal and line-type boxes shall be of aluminum, metallic finish with stainless steel flush plates. Receptacle boxes shall be of plated steel. All electrical or conduit fittings called for or to be furnished under these specifications shall meet the requirements of the National Electrical Code.

L. Sink Outlets: Unless otherwise specified, sink outlets for other than stainless steel sinks shall be Molded Epoxy Resin, with integral cross bars, tapered for overflow and be complete with gasket and lock nut with 1-1/2 inch I.P.S. male straight thread outlet. Overflows shall not be furnished for sink outlets unless specifically called for.

M. Crumb Cup Strainers: Crumb cup strainers shall be stainless steel or chromium plated brass, as specified and shall be furnished for stainless steel sinks, and be complete with gasket, lock nut and 4 inch long unthreaded tailpiece outlet in 1-1/2 inch size.

2.6 WORKSURFACES

A. Epoxy Resin Tops: Factory molded tops of modified epoxy resin formulation, uniform mixture throughout full one (1) inch thickness. Color shall be non-glare black. Cast surfaces shall be very smooth, with factory cutouts for sinks and drip grooves. Plain butt type joints assembled with epoxy adhesive.

B. Chemical-Resistant Plastic Laminate: Highly chemical-resistant modified acrylic urethane finish with built in U.V. blocker or equal finish applied over stain of selected color. Finish shall meet performance characteristics of TR-5, Section 1500, AWI Architectural Woodwork Quality Standards (latest edition). Color shall be Wilsonart Pewter Mesh 4878-38 or equal.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Casework installation:

1. Set casework components plumb, square, and straight with no distortion and securely anchored to building structure. Shim as required using concealed shims.

2. Fasten continuous cabinets together with joints flush, tight and uniform, with alignment of adjacent units within 1/16 inch tolerance.

3. Secure wall cabinets to solid supporting material, not to plaster, lath or gypsum board. Blocking in wall by rough carpentry as specified in Section 06 10 53, “Rough Carpentry”.

4. Abut top edge surfaces in one true plane. Provide flush joints not to exceed 1/8 inch between top units.

B. Work surface installation:

1. Where required due to field conditions, scribe or caulk to abutting surfaces.

2. Secure joints in the field, where practicable, in the same manner as in factory, with dowels, adhesive or fasteners recommended by manufacturer.

3. Secure work surfaces to casework and equipment components with material and procedures recommended by the manufacturer.

C. Sink installation: Sinks shall be set in chemical-resistant sealing compound, secured and supported per manufacturer's recommendations.

D. Accessory installation: Install accessories and fittings in accordance with manufacturer's recommendations. Turn screws to seat flat; do not drive.

3.2 ADJUSTING

A. Repair or remove and replace defective work, as directed by Architect upon completion of installation.

B. Adjust doors, drawers, hardware, fixtures and other moving or operating parts to function smoothly.

3.3 CLEANING

A. Broom clean finished casework, touch up as required.

B. Clean materials as recommended by manufacturer.

3.4 PROTECTION OF FINISHED WORK

A. Provide necessary protective measures to prevent damage of casework and equipment from exposure to other construction activity.

B. Advise contractor of procedures and precautions for protection of material, installed laboratory casework and fixtures from damage by work of other trades.

END OF SECTION 12 35 53

SECTION 22 05 00 - COMMON WORK RESULTS FOR PLUMBING

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SUMMARY

A. Provide all work for mechanical, plumbing and fire protection systems required in the project to be properly installed, tested and performing their intended function.

B. All materials and equipment for the potable water system shall meet the latest mandates and requirements for lead free required by law that went into effect January 2014.

C. The Drawings and Specifications are complementary to each other and what is called for by one shall be as binding as if called for by both. If a discrepancy exists between the Drawing and Specifications, the higher cost shall be included, and the Engineer shall be notified of the discrepancy.

1.2 QUALITY ASSURANCE

A. Perform all work in accordance with the latest edition of the applicable codes, specifications, local ordinances, industry standards, utility company regulations, nationally accepted codes.

B. All materials and distribution, and utilization equipment shall be UL Listed.

C. All equipment and materials shall be new, unused and of United States Domestic manufacture unless approved otherwise by engineer or owner.

D. Eliminate any abnormal sources of noise that are considered by the Architect or Engineer not to be an inherent part of the systems as designed without additional cost to the Owner.

1.3 COORDINATION WITH OTHER TRADES

A. Coordinate the work of this division with all other divisions to ensure that all components of the mechanical, plumbing and fire protection system will be installed at the proper time and fit the available space.

B. Locate and size all openings in work of other trades required for the proper installation of the mechanical, plumbing and fire protection system components.

C. Make all mechanical, plumbing and fire protection connections to all equipment furnished by this division and as required by any other division.

D. Electrical wiring, control equipment and motor starters indicated on the electrical drawings, except items otherwise specifically noted, shall be furnished and installed by the electrical trades. Items of electrical control equipment specifically mentioned to be furnished by the mechanical trades, either in these specifications or on the mechanical drawings, shall be furnished, mounted and wired by this trade unless where otherwise specified in Division 26 or noted on the electrical drawings to be by the electrical trades.

All wiring shall be in accordance with all requirements of the electrical Sections of these specifications.

E. Any changes or additions required by specific equipment furnished shall be the complete responsibility of the Contractor furnishing the equipment. All controllers furnished with mechanical equipment shall have overload protection in all phases. It shall be the responsibility of each subcontractor furnishing motors and devices to advise Electrical Contractor of exact function of systems to assure proper type of starter with correct number auxiliary contacts for proper operation of the system.

F. The mechanical trades shall coordinate with the electrical to ensure that all required components of control work are included and fully understood. No additional cost shall accrue to the Owner as a result of lack of such coordination.

G. The design of the electrical systems is based on the mechanical equipment specified and scheduled on the drawings. Where changes or substitutions are made that involve additional electrical work (larger-size motors, larger number of motors, additional wiring of equipment, etc.), the mechanical trades shall pay the electrical trades for the cost of the additional work, except for changes by bulletin.

H. Motor control equipment which is furnished loose under Division 23 shall be delivered to the Electrical Contractor at the site for custody, erection in place, and wiring as specified.

I. Smoke detection systems will be furnished and installed under Division 26 – electrical. Coordinate locations with Electrical Contractor.

1.4 DRAWINGS

A. The drawings are schematic in nature, but show the various components of the systems approximately to scale and attempt to indicate how they are to be integrated with other parts of the building. Determine exact locations by review of equipment manufacturer's data, by job site measurements, by checking the requirements of other trades, and by reviewing all Contract Documents. The size of the mechanical, plumbing and fire protection equipment indicated on the Drawings may be based on the dimensions of a particular manufacturer. While other listed manufacturers will be acceptable, it is the responsibility of the Contractor to determine if the equipment that the Contractor proposes to furnish will fit in the space. The drawings are not intended to show exact locations of pipes and ducts, or to indicate all offsets and fittings or supports, but rather to indicate approximate layout.

B. The mechanical, plumbing and fire protection Drawings are necessarily diagrammatic in character and cannot show every connection in detail in its exact location. These details are subject to the requirements of ordinances and also structural and architectural conditions. The Contractor shall carefully investigate structural and finish conditions and shall coordinate the separate trades in order to avoid interference between the various phases of work. Work shall be laid out so that it will be concealed in furred chases and suspended ceilings, etc., in finished portions of the building, unless specifically noted to be exposed. Work shall be installed to avoid crippling of structural members. All exposed work shall be installed parallel or perpendicular to the lines of the building unless otherwise noted.

C. When the mechanical, electrical, plumbing and fire protection Drawings do not give exact details as to the elevation of pipe, conduit and ducts, physically arrange the systems to fit in the space available at the elevations intended with the proper grades for the functioning of the system involved. Exposed piping and ductwork is generally intended to

be installed true and square to the building construction, and located as high as possible against the structure in a neat and workmanlike manner. The Drawings do not show all required offsets and their location details. Work shall be concealed in all finished areas.

D. The locations, arrangement and extent of equipment, devices, and other appurtenances related to the installation of work shown on the Drawings are approximate. The Contractor shall not scale drawings, but shall refer to the architectural drawings for exact dimensions of building components. Should a conflict exist between the architectural and engineering drawings regarding dimensions and scale, the Contractor shall notify the Architect of the discrepancy for resolution.

E. Materials, equipment or labor not indicated but which can be reasonably inferred to be necessary for a complete installation shall be provided. Drawings and Specifications do not undertake to indicate every item of material, equipment, or labor required to produce a complete and properly operating installation.

1.5 SUBMITTALS

A. Provide shop drawings and complete product data as indicated in each specification section.

B. Coordination Drawings: Using the mechanical ductwork shop drawings as a basis, provide a composite set of AutoCAD drawings in which the major mechanical, plumbing and fire protection equipment, ductwork and piping are superimposed on the architectural reflected ceiling plan and structural framing plan. Include spot elevations of bottom of steel along with finished ceiling height. Prepare at 1/8 inch scale or larger, one drawing per building area. Provide 1/4 inch scale enlargements of locations where special attention to rough-in dimensions as required to ensure all systems will fit within the available space. Obtain approval of coordination drawings prior to duct fabrication and mechanical system hanger rough-ins.

C. Shop Drawings will be reviewed and returned to the Contractor with one of the following categories:
1. **Reviewed**: No further submittal action is required. Submittal to be included in O & M Manual.
2. **Revise and Resubmit**: Contractor to resubmit submittal as indicated in comments section of Engineer's Submittal Cover Letter.
3. **Rejected**: Contractor to resubmit new submittal when alternate or substitution is not approved and be required to furnished product named in Specification and or Drawings.
4. **Furnish as Corrected**: Contractor to submit letter verifying that required corrections noted on Engineer's Submittal Cover Letter have been received and complied with by manufacturer. If equipment on site is not in compliance with corrections noted, contractor shall be responsible for the cost of removing and replacing equipment.

D. Materials and equipment which are purchased or installed without Submittal review and approval will be removed and replaced with specified equipment at Contractor's expense.

E. Provide a specification review that consists of a copy of related specification section with notations indicating compliance or deviation with each element of specification.

1.6 CLOSEOUT SUBMITTALS

A. Submit in accordance with Division 1 - General Requirements and each specification section.

1.7 INTERFERENCE DRAWINGS

A. Where field conditions prohibit the installation of the mechanical, plumbing or fire protection system components within the available space as indicated on drawings, the Contractor shall prepare a sketch to the minimum 1/8 inch scale, clearly depicting the conflict along with an alternate installation arrangement that satisfies the design intent of the documents without incurring additional cost.

B. Obtain written approval of proposed interference resolution prior to proceeding with alternate installation.

1.8 EXISTING CONDITIONS

A. The Contractor shall be familiar with the required scope of work to accomplish the work required by these documents. All demolition work implied or required shall be included in the scope of this contract.

B. Outages of services are required by the new installation will only be permitted at a time approved by the Owner. The contractor shall allow the Owner a 2 week window in order to schedule required outages. The time allowed for outages will not be during normal operating hours unless otherwise approved by the Owner. All costs for outages, including overtime charges, shall be included in the contract amount.

C. Work Sequence, Timing, Coordination with Owner:
1. During the construction of this project, normal facility activities will continue in existing buildings until new buildings or renovated areas are completed. Plumbing, fire protection, lighting, electrical, communications, heating, air conditioning, and ventilation systems will have to be maintained in service within the occupied spaces of the existing building.

D. Demolition and Work within Existing Buildings:
1. In the preparation of these documents every effort has been made to show the approximate locations of, and connections to the existing piping, duct, equipment and other apparatus related to this phase of the work. However, the Contractor shall be responsible for verifying all existing conditions. The Contractor shall visit the existing site to inspect the facilities and related areas. The Contractor shall inspect and verify all details and requirements of all the Contract Documents, prior to the submission of a proposal. All discrepancies between the Contract Documents and actual job-site conditions shall be resolved by his contractor, who shall produce drawings which shall be submitted to the Architect/Engineer for review. All labor and materials required to perform the work described shall be part of this Contract.
2. All equipment and/or systems noted on the Drawings “To Remain” shall be inspected and tested on site to certify working condition. A written report on the condition of all equipment to remain, including a copy of the test results and recommended remedial actions and costs shall be made by this Contractor to the Architect/Engineer for review.
3. All equipment and/or systems noted on the Drawings “To Be Removed” shall be removed including associated system connections. Where duct or pipe is to be capped for future extension or end of line use, it shall be properly tagged with its function or service appropriately identified. Where existing equipment is to be removed or relocated and has an electric connection, the Electrical Contractor

shall disconnect equipment and remove wiring back to panel or disconnect switch. Contractor shall remove or relocate equipment and associated disconnect.

4. During the construction and remodeling, portions of the Project shall remain in service. Construction equipment, material tools, extension cords, etc., shall be arranged so as to present minimum hazard or interruption to the occupants of the building. None of the construction work shall interfere with the proper operation of the existing facility or be so conducted as to cause harm or danger to persons on the premises. All fire exits, stairs or corridors required for proper access, circulation or exit shall remain clear of equipment, materials or debris. The General Contractor shall maintain barricades separating work area from occupied areas.
5. Certain work during the demolition and construction phases of construction may require temporary evacuation of the occupants. Coordinate and schedule all proposed evacuation with the Project Administrator at least seventy-two (72) hours in advance in writing.
6. Any salvageable equipment as determined by the Owner, shall be delivered to the Owner, and placed in storage at the location of his choice. All other debris shall be removed from the site immediately.
7. Equipment, piping or other potential hazards to the occupants of the building shall not be left overnight outside of the designated working or construction area.
8. Make every effort to minimize damage to the existing building and the owner's property. Repair, patch or replace as required any damage which might occur as a result of work at the site. Care shall be taken to minimize interference with the Owner's activities during construction and to keep construction disrupted areas to a minimum. Coordinate with the Owner and other trades in scheduling and performance of the work.
9. Include in the contract price all rerouting of existing pipe, duct, etc., and the reconnecting of the existing equipment and plumbing fixtures as necessitated by field conditions to allow the installation of the new systems regardless of whether or not such rerouting, reconnecting or relocating is shown on the drawings. Furnish all temporary pipe, duct, controls, etc., as required to maintain heating, cooling, ventilation and plumbing services for the existing areas.
10. All existing plumbing fixtures, pipe, duct, materials, equipment, controls and appurtenances not included in the remodel or alteration areas are to remain in place.
11. Pipe, duct, equipment and controls that are disconnected to perform remodeling work, shall be reconnected in such a manner as to leave systems in proper operating condition.
12. No portion of the fire protection systems shall be turned off, modified or changed in any way without the express knowledge and written permission of the Owner's representative in order to protect systems that shall remain in service.
13. It is the intention of this Section of the Specifications to outline minimum requirements to furnish the Owner with a turn-key and operating system in cooperation with other trades with a minimum of disruption or downtime.
14. Refer to Architectural "Demolition and/or Alteration" plans for actual location of walls, ceiling, etc., being removed and/or remodeled.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Accept materials on site in original factory packaging, labeled with manufacturer's identification.

B. Protect from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original packaging.

C. Do not deliver items to project before time of installation. Limit shipment of bulk and multiple-use materials to quantities needed for immediate installation.

1.10 GENERAL ELECTRICAL REQUIREMENTS

A. Provide electric motors, control panels, certain control and safety devices and control wiring when specified or required for proper operation of electrical systems associated with mechanical equipment specified in Division 23.

B. Electrical materials and work provided shall be in accordance with Division 26.

C. Notify Architect/Engineer in writing 14 days before bids are due if it is necessary to increase horsepower of any motors or change any electrical requirements listed or shown. After this period, costs incurred because of changes shall be assumed by the responsible Contractor.

1.11 ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT

A. Mechanical equipment with factory assembled and/or attached electric equipment shall be Underwriters' Laboratories (UL) listed as an assembly when such listing is available from UL, and shall meet the latest edition of the National Electrical Code.

B. Unless otherwise specified, the electrical supply being furnished is a 480 volt, 3 phase, 3 wire, 60 hertz source. A neutral connection will not be provided, the manufacturer shall include any transformers for equipment requiring other voltages (277volt, 220 volt, 120 volt, 24 volt, etc.).

C. Electric Motors:
1. For each piece of equipment requiring electric drive, provide a motor having starting and running characteristics consistent with torque and speed requirements of the driven machine.
2. Manufacturers furnishing motors shall verify motor horsepower with the characteristic power curves of driven equipment on shop drawings.
3. Each motor shall be furnished in accordance with Section 23 05 13 - Common Motor Requirements for HVAC Equipment.
4. Contractor shall verify electrical characteristics of each motor with electrical drawings.
5. Motors which are shipped loose from equipment shall be set by supplying subcontractor.
6. Alignment of motors factory coupled to equipment and motors field coupled to equipment shall be rechecked by millwright after all connections (belt drives, gear drives, impellers, piping, etc.) have been completed and again after 48 hours of operation in designed service.
7. Where possible, motors shall be factory mounted.

PART 2 – PRODUCTS

2.1 GENERAL REQUIREMENTS

A. All equipment, materials, accessories, etc. used shall be new and of current production unless specified otherwise. Equipment not specified in the Contract Documents shall be suitable for the intended use and shall be subject to approval by the Engineer.

B. All equipment, products and materials shall be free of defects and shall be constructed to operate in a safe manner without excessive noise, vibration, leakage, or wear.

C. All equipment shall bear the inspection label of Underwriters Laboratories Inc.

D. All equipment and material for similar applications or systems shall be provided from the same manufacturer unless noted otherwise.

E. Cast iron soil pipe and fittings shall bear the collective trademark of the Cast Iron Soil Pipe Institute.

2.2 ACCESS PANELS

A. Group valves together above suspended ceilings, walls, furred spaces to minimize the number of access panels, but with all valves freely accessible for maintenance. Locate all valves within 1'-0" of access point.

B. Furnish access panels of proper size to service concealed valves and cleanouts. Panels shall be of the proper type for material in which they occur and are to be furnished by the Contractor, but installed by the particular trade for the material within which the access panel is installed.

C. Panels shall have flush doors with No.14 USCG steel door and trim No. 16 USCG steel frame, metal wings for keying into construction, concealed hinges, and screwdriver operated stainless steel cam lock. Panels shall be shop coated with one coat of zinc chromate primer. Valves above removable ceilings shall have tile clips by the Contractor for identification.

D. Access panels are not allowed in gypsum ceilings in public spaces.

2.3 INSULATION

A. The following shall be insulated:
1. All domestic cold water piping above grade except at horizontal chase branch piping to individual plumbing fixtures.
2. All hot water and hot water return piping except at horizontal chase branch piping to individual plumbing fixtures.
3. All horizontal storm drain piping and roof drain bodies.
4. All hot and cold water piping exposed to areas subject to freezing, refer to “Heat Cable for Freeze Protection of Piping” under Part 2 of Section 22 00 00 for additional requirements.

Commented [RWF1]: Edit as required. Insulation is to be included for all CW systems on the initial spec, including multi-family and condos in FL. It may be deleted as a VE consideration at the Owner’s direction--document with meeting minutes to file.

B. Domestic hot, cold, hot water recirculation, primary storm drainage, and waste drainage piping shall be insulated with 4 lb. density sectional fiberglass insulation with a thermal conductivity not to exceed 0.24 with white all service jacket and vapor barrier. All joints

and seams shall be sealed vapor tight. All seams and staples shall then be covered with "All Service Jacket" three-inch wide tape.

C. All interior horizontal storm drainage piping systems and roof drain bodies are to be insulated with blanket type glass fiber bonded with thermosetting resin with white vinyl vapor retarding facing, 2" wide stapling/taping tab.

D. Materials as specified in this section shall be manufactured by CertainTeed, Johns Manville, Knauf, Owens Corning or equal. Insulation thicknesses shall be as shown in the following table:

Minimum Pipe Insulation			**Insulation Thickness for Pipe Sizes**				
Piping System Types	Fluid Temperature Range		1 in. and Less	1-1/4 to 2 in.	2-1/2 to 4 in.	5 and 6 in.	8 in. and Larger
	°C	F	In.	In.	In.	In.	In.
PLUMBING							
Domestic Water	Ambient	Ambient	0.5	1.0	1.0	1.0	--
Domestic Hot Water And Hot Water Recirculation	43-71	110-160	1.0	1.0	1.5	1.5	--
Above Grade Drains and Piping Receiving Condensate or Ice Machine Discharge	4.5-15.5	40-60	0.5	1.0	1.0	1.5	--
Horizontal Storm Drainage	Ambient	Ambient	--	--	1.0	1.0	1.0

2.4 FLOOR, WALL & CEILING PLATES

A. Furnish and install heavy gauge chromium plated steel wall and ceiling plates on all exposed pipes in finished areas where they pass through walls, ceilings, etc. Plates shall be of type that will remain permanently in position and where pipes are insulated they shall be of size necessary to cover insulated pipe.

2.5 GALVANIC PROTECTION

A. Insulate joints between dissimilar metals with suitable isolation gasket and bolts with fiber ferrules and washers and/or suitable armored insulation fittings by Clearflow, Crane, Capital, or Epco, so there will be no contact between the metals or with insulating bushings.

2.6 PIPING SYSTEMS IDENTIFICATION

A. A marker showing the service and an arrow indicating the direction of flow shall be applied on all of the following piping systems applicable to the project installed under this section of the Specifications:
1. Acid vent piping
2. Acid waste piping

3. Compressed air piping
4. Domestic hot, cold and hot water recirculation water piping
5. Fuel oil piping
6. Gas piping
7. Primary and emergency storm drainage piping
8. Sanitary, waste and vent piping
9. Softened water piping
10. Steam piping
11. Vacuum piping

B. Piping identification shall be applied on all piping systems in areas of exposed construction and in areas with accessible or lay-in ceilings. The piping shall be labeled at each wall and floor penetration (both sides), and at connections to equipment. In addition, straight runs of piping shall be labeled at intervals not greater than 25 feet.

C. The letter size and background color shall conform to the Identification of Pipe System ANSI A-13-1. The vinyl plastic markers shall be as manufactured by Seton Name-Plate Company, W. H. Brady Company, or Westline products.

D. Each valve in the Plumbing and Fire Protection systems is to be provided with an individually numbered valve tag.

E. Valve tags are to be brass or plastic laminate, 1-1/2" minimum diameter with brass chain and hook for securing to the valve.

F. Valve tags will include a “P” or “FP” lettering designation to indicate the appropriate system. Numbering shall be consecutive for each service of either the Plumbing or Fire Protection systems.

G. A printed list or schematic drawing shall be compiled for each system indicating the location and detailed description of the system or equipment served.

H. One copy of each list shall be framed and mounted at the location designated by the Building Engineer. An additional copy of each list is to be included in the Operations and Maintenance Manual.

2.7 EQUIPMENT LABELING

A. All equipment shall be labeled. This shall include all pumps, water heaters, storage tanks, and other similar equipment.

B. Equipment labeling shall be one of the following, unless noted or specified otherwise.

1. Permanently attached plastic laminate signs with 1" high lettering.
2. Stencil painted identification, 2" high letters, with standard fiberboard stencils and standard black (or other appropriate color) exterior stencil enamel.

PART 3 - EXECUTION

3.1 EXISTING WORK

A. Disconnect mechanical, plumbing and fire protection systems in walls, floors, and ceilings scheduled for removal.

B. Provide all required connections to maintain existing systems in service during construction.

C. When performing work on operating systems use personnel experienced and trained in similar operations.

D. Remove, relocate, and extend existing installations to accommodate new construction.

E. Repair adjacent construction and finishes damaged during demolition and extension work.

F. Normal facility activities will continue in existing areas. MEP systems servicing existing occupied spaces will have to be maintained in service. Schedule any required outages and system service interruptions with Owner and Architect. Submit a written request indicating service(s) to be interrupted along with proposed duration and summary of work to be performed during downtime.

G. Removed Equipment:
1. Store removed items at site; Owner retains rights to all removed items.
2. Allow Owner ample time to review removed items and to designate which items to be kept by Owner.
3. Dispose properly, off-site, all items Owner chooses not to keep.

3.2 DEMOLITION AND EXTENSION OF EXISTING MECHANICAL WORK

A. Remove, relocate and extend existing installations to accommodate new construction.

B. Remove abandoned piping to source of supply.

C. Remove exposed abandoned piping systems, including abandoned systems above accessible ceiling finishes. Cut systems flush with walls and floors, and patch surfaces.

D. Repair adjacent construction and finishes damaged during demolition and extension work.

E. Maintain access to existing installations which remain active. Modify installation or provide access panels as appropriate.

F. Extend existing installations using materials and methods compatible with existing installations, or as specified.

3.3 CLEANING AND REPAIR

A. Clean and repair existing materials and equipment which remain or are to be reused.

3.4 INSTALLATION

A. Install relocated materials and equipment.

3.5 REMOVAL OF MATERIALS

A. The Contractor shall modify, remove, and/or relocate all materials and items so indicated on the drawings or required by the installation of new facilities. All removals and/or dismantling shall be conducted in a manner as to produce maximum salvage. Salvage

destination as directed by the Owner. Materials and/or items scheduled for relocation and which are damaged during dismantling or reassembly operations shall be repaired and restored to good operative condition. The contractor may, at his discretion and upon the approval of the Owner, substitute new materials and/or items of like design and quality in lieu of materials and/or items to be relocated.

B. All items which are to be relocated shall be carefully removed in reverse to original assembly or placement and protected until relocated. The Contractor shall clean and repair and provide all new materials, fittings, and appurtenances required to complete the relocations and to restore to good operative order. All relocations shall be performed by workmen skilled in the work and in accordance with standard practice of the trades involves.

C. When items scheduled for relocation are found to be in damaged condition before work has been started on dismantling, the contractor shall call the attention of the Owner to such items and receive further instructions before removal. Items damaged in repositioning operations are the contractor's responsibility and shall be repaired or replaced by the contractor as approved by the Owner, at no additional cost to the Owner.

D. Service lines and wiring to items to be removed, salvaged, or relocated shall be removed to points indicated on the drawings, specified, or acceptable to the Owner. Service lines and wiring not scheduled for reuse shall be removed to the points at which reuse is to be continued or service is to remain. Such services shall be sealed, capped, or otherwise tied-off or disconnected in a safe manner acceptable to the Owner. All disconnections or connections into the existing facilities shall be done in such a manner as to result in minimum interruption of services to adjacent occupied areas. Services to existing areas or facilities which must remain in operation during the construction period shall not be interrupted without prior specific approval of the Owner as hereinbefore specified.

E. Include in the contract price all rerouting of existing conduits, wiring, outlet boxes, fixtures, etc., and the reconnecting of existing fixtures as necessitated by field conditions to allow the installation of the new systems. Furnish all temporary conduit, wiring, boxes, etc., as required to maintain lighting and power service for the existing areas with a minimum of interruption. Remove wire and conduit back to nearest accessible active junction box and extend to existing homeruns as required.

F. The Contractor shall be responsible for loss or damage to the existing facilities and shall be responsible for repairing such loss or damage. The Contractor shall send proper notices, make necessary arrangements, and perform other services required for the care, protection and operational maintenance of all electrical services for the new and existing facilities, The Contractor shall erect temporary barricades, with necessary safety devices, as required to protect personnel from injury, removing all such temporary protection upon completion of the work.

G. Where existing construction is removed to provide working and extension access to existing utilities, Contractor shall remove doors, piping, conduit, outlet boxes, wiring, light fixtures, air conditioning ductwork and equipment, etc., to provide this access and shall reinstall same upon completion of work in the areas affected.

H. Where partitions, walls, floors, or ceilings of existing construction are being removed, all contractors shall remove and reinstall in locations approved by the Architect all devices required for the operation of the various systems installed in the existing construction.

3.6 OWNER INSTRUCTION - GENERAL

A. Provide on-site Owner training for all new equipment by factory trained specialists.

B. Use Operation and Maintenance manuals and actual equipment installed as basis for instruction.

C. At conclusion of on-site training program have Owner personnel sign written certification they have completed training and understand equipment operation. Include copy of training certificates in final Operation and Maintenance manual submission.

D. Refer to individual equipment specifications for additional training requirements.

END OF SECTION

SECTION 26 05 00

COMMON WORK RESULTS FOR ELECTRICAL

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SUMMARY

A. Provide all work for electrical systems required in the project to be properly installed, tested and performing their intended function.

1.2 QUALITY ASSURANCE

A. Perform all work in accordance with the latest edition of the national electrical code, and local codes.

B. All electrical materials and distribution, and utilization equipment shall be UL Listed.

C. All equipment and materials shall be new and unused and of United States Domestic manufacture unless approved otherwise by engineer or owner.

D. Eliminate any abnormal sources of noise that are considered by the architect not to be an inherent part of the electrical systems as designed.

1.3 COORDINATION WITH OTHER TRADES

A. Coordinate the work of this division with all other divisions to ensure that all components of the electrical system will be installed at the proper time and fit the available space.

B. Locate and size all openings in work of other trades required for the proper installation of the electrical system components.

C. Make all electrical connections to all equipment furnished by this division and any other division.

1.4 DRAWINGS

A. The drawings are schematic in nature, but show the various components of the systems approximately to scale and attempt to indicate how they are to be integrated with other parts of the building. Determine exact locations by review of equipment manufacturer's data, by job site measurements, by checking the requirements of other trades, and by reviewing all Contract Documents. The size of the electrical equipment indicated on the Drawings may be based on the dimensions of a particular manufacturer. While other listed manufacturers will be acceptable, it is the responsibility of the Contractor to determine if the equipment that Contractor proposes to furnish will fit in the space. The drawings are not intended to show exact locations of conduit and wire, or to indicate all wire terminators, connectors, conduit fittings, boxes or supports, but rather to indicate distribution, circuitry, and control.

B. The Electrical Drawings are necessarily diagrammatic in character and cannot show every connection in detail or conduit in its exact location. These details are subject to the requirements of ordinances and also structural and architectural conditions. The

Contractor shall carefully investigate structural and finish conditions and shall coordinate the separate trades in order to avoid interference between the various phases of work. Work shall be laid out so that it will be concealed in furred chases and suspended ceilings, etc., in finished portions of the building, unless specifically noted to be exposed. Work shall be installed to avoid crippling of structural members. All exposed work shall be installed parallel or perpendicular to the lines of the building unless otherwise noted.

C. When the mechanical and electrical Drawings do not give exact details as to the elevation of pipe, conduit and ducts, physically arrange the systems to fit in the space available at the elevations intended with the proper grades for the functioning of the system involved. Exposed conduit is generally intended to be installed true and square to the building construction, and located as high as possible against the structure in a neat and workmanlike manner. The Drawings do not show all required offsets and their location details. Work shall be concealed in all finished areas.

1.5 SUBMITTALS

A. Specification Review:
1. Include a paragraph-by-paragraph written specification review for each product listed requiring a submittal. Denote any proposed deviations from specifications.

1.6 EXISTING CONDITIONS

A. Do all work required to maintain electrical services to the Owner occupied portions of the building during construction.

B. No connection to existing services or utilities shall be made without Owner's knowledge and permission. All such connections shall be planned and scheduled to minimize the length of service interruption required. Request for shutdown shall be made to Owner at least two (2) weeks in advance and shall be accompanied by detailed written schedule of activities during shutdown and list of materials required for connection and renewal of service. It shall be understood that all such service interruptions shall be made at the Owner's convenience, not the Contractor's. No increase in contract amount will be allowed for reasons of premium time, inefficiency of operations or other considerations not calculated in original bid.

C. All items removed shall be stored on-site. Schedule a review of the items with the Owner. Remove from site all items the Owner does not choose to keep. Deliver Owner designated items to Owner's storage facility.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Accept materials on site in original factory packaging, labeled with manufacturer's identification.

B. Protect from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original packaging.

C. Do not deliver items to project before time of installation. Limit shipment of bulk and multiple-use materials to quantities needed for immediate installation.

PART 2 - EXECUTION

2.1 EXISTING WORK

A. Disconnect electrical systems in walls, floors, and ceilings scheduled for removal.

B. Provide temporary wiring and connections to maintain existing systems in service during construction.

C. When performing work on energized equipment or circuits, use personnel experienced and trained in similar operations.

D. Remove, relocate, and extend existing installations to accommodate new construction.

E. Repair adjacent construction and finishes damaged during demolition and extension work.

2.2 OWNER INSTRUCTION

A. Provide on-site Owner training for all new equipment.

B. Use Operation and Maintenance manuals and actual equipment installed as basis for instruction.

C. At conclusion of on-site training program have Owner personnel sign written certification they have completed training and understand equipment operation. Include copy of training certificates in final Operation and Maintenance manual submission.

END OF SECTION