

**PROJECT
MANUAL**

Brown Early Childhood Center
Portales Municipal Schools | Portales, New Mexico

Project No: 18-0032
PSFA Project No: K-18-011 & S-20-008



Volume 1 of 2

12/10/2019 (Updated 1/27/2021)

Construction Documents



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LEGAL NOTICE

Request for Proposals

RFP NO: 20-21-0001

The Board of Education of the Portales Municipal School District is requesting competitive sealed proposals for the construction of ***Brown Early Childhood Center Pre-K and Systems Project*** for use by the Portales Municipal School District.

Project contract documents may be obtained from the location(s) listed in the complete Request for Proposal (RFP) which may be reviewed at www.nmschoolbuildings.org, NM E-Procurement/Bidding System or at the District website at <http://www.portaleschools.com/> under RFP/RFI Bids.

A Mandatory Pre-Proposal Conference will be held on **Friday, February, 12th 2021 at 1:30 p.m. MST**, at Brown Early Childhood Center, 520 W 5th St, Portales, NM 88130. ***COVID precautions will be taken to make sure the state mandates for mass gathering numbers and PPE are followed.***

RFPs must be sealed and delivered no later than **Monday, March 22nd, at 4:00 p.m. MST** to:

***Attn: Sarah Stubbs, Director of Finance/CPO
RFP 20-21-0001
Portales Municipal Schools
501 South Abilene
Portales, NM, 88130
Phone No: (575) 356-7000***

Please make sure the RFP number 20-21-0001 is clearly stated on the sealed envelope.

The Portales Municipal Schools Board of Education reserves the right to reject any and all bids and/or cancel this RFP in its entirety.

PUBLISH DATE: January 31st, 2021 & February 7th, 2021



**REQUEST FOR PROPOSAL
FOR
BROWN EARLY CHILDHOOD
CENTER PRE-K AND SYSTEMS
PROJECT**



Check here if this is not a PSCOC funded project.
Note: If checked, any reference to PSCOC or PSFA does not apply.

DISTRICT RFP NO: 20-21-0001 PSFA PROJECT NO: K-18-011 & S-20-008

For Contracting Agency: Portales Municipal Schools

Contact Person: Sarah Stubbs, Director of Finance/CPO

Address: 501 South Abilene

City/State/Zip: Portales, NM 88130

Telephone: 575.356.7000 Fax: 575.356.4377 E-Mail: sstubbs@portaleschools.com

DEADLINE FOR RECEIPT OF PROPOSALS IS AS FOLLOWS:

DATE: March 22, 2021 TIME: 4:00 p.m. MST

DELIVER TO: Portales Municipal Schools, 501 South Abilene, Portales NM, 88130

Late Proposals will not be accepted. It is the responsibility of the Offeror to ensure that proposals are delivered on time to the correct electronic website or District address stated in the solicitation.

A MANDATORY PRE-PROPOSAL CONFERENCE will X will not be held as follows:

DATE: February 12, 2021 TIME: 1:30 p.m. MST

LOCATION: Brown Early Childhood Center, 520 W 5th St

CITY/STATE/ZIP: Portales, NM 88130

Note: Any unauthorized change to the language or forms issued in this Project Manual or identified in any addenda shall render your proposal 'nonresponsive.'

Portales Municipal Schools

Brown Early Childhood Center Pre-K And Systems Project

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PROJECT PROPOSAL DOCUMENTS

Drawings and Specifications

for

Portales Municipal Schools

&

THE STATE OF NEW MEXICO

PUBLIC SCHOOL FACILITIES AUTHORITY

A. PROJECT DEPOSIT INSTRUCTIONS

Proposal Documents may be obtained at Albuquerque Reprographics, Inc. upon payment of **\$250.00** for each complete set. CHECKS SHOULD BE MADE PAYABLE TO PORTALES MUNICIPAL SCHOOLS. Incomplete sets will not be issued. The successful Offeror will receive refund of his deposit, and any unsuccessful Offeror who returns the Proposal Documents in good and complete condition within fifteen (15) days of the Proposal Opening will also receive refund of this deposit. No deposits will be returned after the fifteen-day period.

B. LOCATIONS TO REVIEW PROJECT PROPOSAL DOCUMENTS:

Design Professional of Record: Formative Architecture

Address: 209 Gold Ave SW

City/State/Zip: Albuquerque, NM 87102

Telephone: 505-510-4600

1. Albuquerque Reprographics Inc., 4716 McLeod NE, Albuquerque, NM 87109
Telephone: (505) 884-0862
2. Construction Reporter, 1609 Second Street NW, Albuquerque, NM 87102
Telephone: (505) 243-9793

C. PROJECT PRICE PROPOSAL INFORMATION:

Price Proposals shall be presented in the form of a total Base Proposal under a Lump Sum Contract plus any additive or deductive alternates, or Bid Lots, per the Proposal Form (Section 00 4166), Allowances (Section 01 2100), Alternates (Section 01 2300), and Bid Lots (Section 01 2310) as selected by the Owner. A proposal must be submitted on all proposal items, allowances and alternates; segregated proposals will not be accepted.

NOTE: Proposal price shall not include state gross receipts or local options taxes. Taxes will be included in the Contracted Amount at prevailing rates as a separate item to be paid by Owner.

In submitting this proposal, each Offeror must satisfy all terms and conditions of the Proposal Documents. All work covered by this Request for Proposal shall be in accordance with applicable state laws and, if price proposal amount is \$60,000 or more, is subject to the minimum wage rate determination issued by the office of the NM Work Force Solutions Department for this project. Refer to Supplementary Conditions (Section 00 7300). If the price proposal amount of the contractor or any subcontractor exceeds \$60,000, the contractor and/or subcontractor must comply

with the registration requirements pursuant to the NM Work Force Solutions Department Registration Act.

D. PROJECT PROPOSAL SECURITY

If Offeror proposal price is greater than \$25,000, Offeror shall provide proposal security in the form of a surety bond executed by a surety company authorized to do business in the State of New Mexico in the amount of **5%** of the total price proposal, or the equivalent in cash by means of a cashier's check or in a form satisfactory to the Owner, must accompany each price proposal in accordance with the Instructions to Offerors.

A 100% Performance Bond and a 100% Payment and Materials Bond executed by a surety company authorized to do business in the State of New Mexico shall be required from the successful Offeror prior to award of contract. The amount of the Bonds shall be the proposal price exclusive of gross receipts tax.

The AIA A312 1984 or 2010 Labor and Materials Payment Bond shall in effect, limit the time line Surety has to respond. The Payment Bond shall be modified as follows:

“Paragraph 6 of this Payment Bond is deleted in its entirety and replaced with the following provision: Within 45 days (1) after the claimant has satisfied the conditions of Paragraph 4 and (2) after the Surety has received at its home office all supporting documentation it requested to substantiate the amount of the claim, the Surety shall pay or arrange for payment of any undisputed amounts. Failure of the Surety to satisfy the above requirements shall not be deemed a forfeiture or waiver of the Surety’s or the Contractor’s defenses under this Bond or their right to dispute such claim. However in such event the claimant may bring suit against the Surety Company and provided under this Bond.”

E. SUBCONTRACTOR LISTING FORMS AND BONDING

IMPORTANT: PLEASE READ:

- 1. 00 4334 SUBCONTRACTOR QUALIFICATIONS STATEMENT LISTING FORM
And
00 4336 SUBCONTRACTOR AND ANTI-TRUST COMBINED LISTING FORM:**

BOTH completed Forms SHALL BE PLACED IMMEDIATELY AFTER YOUR LETTER OF TRANSMITTAL. The Committee shall evaluate the entire GC ‘TEAM’ which includes all of the subcontractors that meet the listing thresholds.

- 2. SUBCONTRACTOR QUALIFICATIONS STATEMENTS:** one (1) copy of each subcontractor Qualifications Statement shall be submitted in the technical proposal. Please ensure that the Qualifications Statements included match the subcontractors you’ve listed on the 00 4334 Form.

NOTE: The District may allow additional time to produce the additional required copies of the Qualifications Statements to be submitted to the CPO at the date and time stated in the Sequence of Events Section II A, and RFP Response Format and Organization Section III C, to ensure a timely delivery of the original technical proposal. If not stated, all copies of

the Qualifications Statements must be submitted with the original on the date and time stated.

Qualifications Statement listing threshold is 5% of the Architect Estimate or \$50,000, whichever is greater.

3. 00 4336 STANDARD SUBCONTRACTOR LISTING FORM AND BONDING

Completed Form 00 4336, the standard Subcontractor Listing Form shall list the subcontractors responsible for the work that meet the listing threshold per statute, one half of one percent or \$5,000, whichever is greater.

Each subcontractor shall provide a performance and payment bond on a public works building project if the subcontractor's contract (to the General Contractor) for work to be performed on a project is one hundred twenty-five thousand dollars (\$125,000) or more. Failure of a Subcontractor to provide required bond shall not subject the Owner to any increase in cost due to approved substitution of Subcontractor.

F. COMPLETION TIME AND LIQUIDATED DAMAGES:

The Proposal Documents contain a time for completion of the work and further impose liquidated damages for failure to complete the work within the stated time period. No Offeror may withdraw his proposal for **60 days** after the actual date of the opening thereof.

G. METHOD OF AWARD:

The Owner intends to award this Project to the highest ranked Offeror in accordance with the Request For Proposal requirements. The Owner reserves the right to reject any and all proposals, to waive technical irregularities, and to award the contract to the Offeror whose proposal it deems to be in the best interest of the Owner.*

***NOTE: Please read all of the RFP documents carefully for mandatory requirements.**

H. FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

The agreement for the work shall be the PSFA Standard Form of Agreement between the Owner and Contractor and General Conditions, 2010 Version 3.1, with the basis of payment as a Stipulated Sum. This document is printed in its entirety in the Project Manual, and it is also available on the PSFA website at www.nmpsfa.org, under Contract Documents and Forms.

I. PROJECT INFORMATION

A. PURPOSE OF THIS REQUEST FOR PROPOSALS

Pursuant to the NM Procurement Code governing the competitive sealed proposal process for construction, more specifically 13-1-111, NMSA 1978, 1.4.1.29 through 1.4.1.1.46, and NMAC 1.4.8.1 through 1.4.8.17, the District has made a determination that the use of the competitive sealed bidding method of procurement is not advantageous to ensure that the project described herein is delivered in a quality manner, and within time and budget constraints. Therefore, it is hereby determined that soliciting competitively sealed proposals for construction of Brown Early

Childhood Center Pre-K and Systems Project is the most effective means to ensure the project is delivered accordingly.

The award of a contract for construction shall take into consideration certain contractor qualification and performance factors that add value to a procurement contract. Factors such as contractor past performance, technical expertise and experience, management capabilities and resources, subcontractor teams and craft personnel resources, will form the basis for the criteria to be considered, in addition to lump sum price to perform the scope of work. Award shall be made in accordance with the terms, conditions, and requirements stated herein.

This is a qualifications based selection with cost as a consideration. The Offeror is required to provide the qualifications and other documents as requested in this RFP. The Price Proposal will be evaluated separately from the Technical Proposal.

B. PROJECT FUNDING

The District and Public School Capital Outlay Council/Public School Facilities Authority have funds to administer this project and will be referred to throughout the contract documents as “Owner”.

The Design Professional estimate of probable construction cost is:

Base Bid: MACC \$2,004,827.77 (Project # K18-011)
Bid Lot 1,2,3: MACC \$2,720,309.50 (Project # S20-008)
Bid Lot 4: MACC \$40,201.71 (Project # S20-008)

***(Note: This estimate does not include NM Gross Receipts Tax)**

C. PROJECT DESCRIPTION

The project is described as:

Base Bid:

Planning, design, and construction to renovate 9 existing classrooms and to provide 9 new restrooms (Base Bid).

Bid Lots 1, 2, 3:

Renovate common restrooms, install fire suppression, add voice evacuation fire alarm, new ceilings and flooring, new furred out walls, reconfigure large existing rooms to create additional rooms as required by the Owner (Bid Lot 1). Remove and install three new storefront entrance systems (Bid Lot 2). Remove and install new asphalt, stripping, signage, and site lighting (Bid Lot 3).

Bid Lot 4:

Any work outside of the property lines (Bid Lot 4).

D. PROJECT CONTACTS

Any questions concerning the selection process for this Request for Proposals shall be submitted to the Procurement Manager listed below. Technical questions regarding the scope of work shall be submitted to the Design Professional of record, and if appropriate, to the District Representative.

For questions regarding the selection process:

Chief Procurement Officer (CPO): Sarah Stubbs, Director of Finance/CPO
Address: 501 South Abilene
City/State/Zip: Portales, NM 88130
Phone Number: 575 356-7000
Email: sstubbs@portalesschools.com

For technical questions regarding the scope of work, drawings and specifications:

District Design Professional: Owen Kramme, Formative Architecture
Address: 209 Gold Ave SW
City/State/Zip: Albuquerque, NM 87102
Phone Number: 505-510-4600 ext 2
Email: owenk@formativearchitecture.com

District Construction Mgr: Philip Fields
Address: 501 South Abilene
City/State/Zip: Portales, NM 88130
Phone Number: 575 226-3768
Email: pfields@portalesschools.com

PSFA Regional Manager Contact Name: Jeremy Sánchez, CCCA
Address: 300 N. Kentucky, Room 200
City/State/Zip: Roswell, NM 88201
Phone Number: 505-217-4919
Email: jsanchez@nmopsfa.org

E. PROJECT PLANNING SCHEDULE

Key project planning schedule milestones are:

Tentative Notice of Intent to Award	April 12, 2021
Tentative Notice of Award	April 16, 2021
Anticipated Substantial Completion	June 3, 2022

F. SUMMARY SCOPE OF SERVICES

A summary of services the General Contractor shall perform to complete the Project, include, but are not limited to, the following:

- a. Planning, supervision and timely completion of the Project
- b. Prepare, monitor, and maintain Project schedule

- c. Material procurement, delivery, and storage
- d. Submittals and Project documentation
- e. Manage construction labor and materials
- f. Coordinate with Owner direct labor, subcontractors, and Owner furnished equipment suppliers, if applicable
- g. Manage site access, safety, security, and quality control
- h. Manage testing, inspections
- i. Coordination of all utility inspections
- j. Project close-out and warranty period

G. DEFINITIONS AND TERMINOLOGY

This section contains definitions that are used throughout this Request for Proposals (RFP), including appropriate abbreviations.

“Architect” means a member of the project team who is a New Mexico licensed architect and is responsible for the architectural services.

“Award of Contract” shall mean a formal written notice by the District that a firm has been selected to enter into negotiations for a contract for construction services.

“Chief Procurement Officer” (CPO) the person within the District who is responsible for the control of procurement for construction (NMSA 1978 13-1-38.1). The CPO for Portales Schools is Sarah Stubbs.

“Construction Industries Division – licensing treatment of general and limited partnerships and joint ventures.

(1) General partnerships are to be separately licenses when the partnership is bidding for and performing the work, provided that partnerships are legally authorized to do business in NM in order to be licensed but not requiring that they be separately licensed, see 14.6.3.8 (B)(3) NMAC.

(2) Limited partnerships are required to be separately licenses even though one or more of its partners holds a license or qualifying party certificate (14.6.3.8(B)(1) NMAC.

(3) Joint ventures must be separately licensed per 14.6.3.8(B)(2)(a) NMAC. No two or more persons shall submit a joint bid or jointly engage in contracting unless operating as a validly licensed joint venture.

“Construction Contractor” means successful Offeror awarded the contract that holds a current State of New Mexico general contractor license designation of GB-98.

“Contract” means an agreement between a state agency or school district and a New Mexico licensed contractor for the work covered by this RFP.

“Contract Documents” means any one, or combination, of the following documents: Agreement between the Owner and the General Contractor for Construction, General Conditions of the Contract for Construction, and the drawings and specifications.

“Contractor” means any person, corporation, or partnership that has entered into a contract with a state agency or a local public body.

“Co-Owner” means the Public School Facilities Authority, on behalf of the Public School Capital Outlay Council that is funding or partially funding the project.

“Department of Finance and Administration (DFA)” is the cabinet agency with central accounting authority and responsibility, which issue payments for work performed under this RFP involving DCP/PSCOC funding.

“Design Professional” means architect or engineer.

“Determination” means the written documentation of a decision of the District and/or the Selection Committee, including findings of fact required to support a decision written by the documented Chief Procurement Officer for the District. A determination becomes part of the procurement file to which it pertains.

“Limited partnership” is formed upon the filing of a certificate of limited partnership with the Secretary of State. Limited partnership shall state whether partners are general or limited. General partners are agents of the limited partnership, may manage the limited partnership, and may be held liable for the limited partnership’s obligations.

“Joint venture” is a partnership formed for a single transaction. As a partnership, it can be created without a formal, written agreement meeting (1) a community of interest in the performance of a common purpose; (2) a joint proprietary interest in the subject matter, (3) a mutual right to control, (4) a right to share in the profits, and (5) a duty to share in any losses which may be sustained.

“Offeror” is any person, corporation, or partnership who chooses to submit a proposal in response to this RFP.

“Owner” is the District.

“Partnership” is an ‘association of two or more persons who become co-owners of a business for profit’ per NMSA 1978 54-1A-202(a) 1996. Note: When forming a partnership, written partnership agreements are not required. ‘In a ‘general partnership’ each partner is an agent of and may bind the partnership unless the partnership has limited that partner’s authority.

“Proposal” is the Offerors response to this RFP.

“Public School Capital Outlay Council (PSCOC)” is the body with responsibility to approve allocations for public school capital outlay assistance.

“Public School Facilities Authority (PSFA)” is the agency, under the Public School Capital Outlay Council (PSCOC) charged with responsibility for overseeing projects and shall serve as the owner’s representative for work performed under this RFP.

“Request for Proposals” or **“RFP”** means all documents, attached or incorporated by reference, used for soliciting proposals for this project.

“Resident Contractor” or **“Resident Veteran”** means an entity that has a valid resident certificate issued by the NM Taxation and Revenue Department pursuant to Section 13-1-22 NMSA 1978. Points calculated and awarded in this RFP are pursuant to Section 13-1-22 NMSA 1978. See Section IV. Proposal Evaluation, Paragraph A.5. of this RFP for further definition.

“RFP Documents” means any one, or combination, of the following documents: Request for Proposal, technical proposal, price proposal, contractor qualification statement, subcontractor qualification statements, Price Proposal.

"Responsible Offeror" means an Offeror who submits a responsive proposal and who has furnished, when required, information and data to prove that his financial resources, production or service facilities, personnel, service reputation and experience are adequate to make satisfactory delivery of the services described in the proposal.

"Responsive Offer" or "Responsive Proposal" means an offer or proposal, which conforms in all material respects to the requirements set forth in the RFP. Material respects of a RFP include, but are not limited to, quality, quantity or delivery requirements.

"Selection Committee or Evaluation Committee" means a body constituted in accordance with [Owen I deleted the part about NMSA 13-1-121. That particular part of the code doesn't apply to construction.] 1.4.8.16 NMAC 2005 to perform the evaluation of Offeror proposals and make a recommendation for selection (short list) or final selection recommendation to the governing body. The Evaluation Committee consists of a minimum of three members, should collectively possess expertise in the technical requirements of the project, construction design and contracting.

“Statement of Qualifications Forms” means the forms included as part of this RFP, which all Offerors shall complete, including the qualification for the team member or partners and subcontractors proposed for the project.

“Technical Irregularities” are matters of form rather than substance evident from the Offeror proposal document, or insignificant mistakes that can be waived or corrected without prejudice to other Offerors; that is, when there is no effect on price, quality or quantity. If discussions are not held or if best and final offers upon which award will be made have been received, the Evaluation Committee may recommend waiver of such irregularities to the CPO who will make a determination to allow an Offeror to correct them if either is in the best interest of the Owner. Examples include, but are not limited to the failure of the Offeror to:

- a) Submit the number of signed proposals required by the RFP
- b) Sign the proposal, but only if the unsigned proposal is accompanied by other material indicating the Offeror's intent to be bound; or
- c) Acknowledge receipt of an amendment to the RFP, but only if: (1) it is clear from the proposal that the Offeror received the amendment and intended to be bound by its terms; or (2) the amendment involved had no effect on price, quality or quantity.

Note: A technical irregularity can be waived if the irregularity does not affect quality, price, or time elements of the project.

"User" means the school district staff occupying the facility or facilities, for which a project is being designed.

"User Contact" is the person designated by the District to speak on behalf of the staff concerning the scope of work and programming requirements for the project.

The terms "**must**," "**shall**," "**will**," "**is required**," or "**are required**" identify *a necessary* item or factor. Failure to comply *with such* an item or factor *may* result in the rejection of the Offerors proposal.

The terms "**can**," "**may**," "**should**," "**preferably**," or "**prefers**" identifies a desirable or discretionary item or factor. Failure to comply with such an item or factor *may* result in the rejection of the Offerors proposal. *Rejection of the proposal will be subject to review by the Selection Committee and the final decision on rejection will be made by the Committee Chairman.*

H. PROCUREMENT LIBRARY

The CPO has established a Procurement Library. Offerors are encouraged to review the material contained in the Procurement Library by accessing the documents available on line. The documents are located on the NM State Purchasing Division and PSFA websites as follows:

NM Procurement Code, Chapter 13 Public Purchases and Property

GSD Procurement Regulations, 1.4.1 NMAC

RFP for Construction, Maintenance Services and Repairs, 1.4.8 NMAC

NM Government Conduct Code

<http://www.generalservices.state.nm.us/statepurchasing/>

See NM PSFA Standard Guidelines, State-wide Adequacy Standards and relative guideline documents <http://www.nmpsfa.org>

II. CONDITIONS GOVERNING THE PROCUREMENT

This section of the RFP outlines and describes the major events of the selection process and the conditions that govern this procurement.

A. SEQUENCE OF EVENTS

	Action	Responsibility	Date
1.	Issue RFP	District	January 26, 2021
2.	Pre-Proposal Conference Location: Brown ECC Note: Mandatory	District Time: 1:30 p.m. MST	February 12, 2021
3.	Deadline to Submit Written Questions re: RFP Process to the CPO	Potential Offerors Time: 4:00 p.m. MST	February 24, 2021
4.	Date of Release of Last Addenda Prior to Submission of Proposal	Design Professional	March 3, 2021
5.	Submission of Proposal Location: LC Cozzens Admin 501 S Abilene Ave	Offerors Time: 4:00 p.m. MST	March 22, 2021
5A.	Submission of Copies of Technical Proposals (If applicable)	Offerors Time: 4:00 p.m. MST	March 23, 2021

6.	Proposal Evaluation	Evaluation Committee	March 24-30, 2021
7.	Notice of Short Listed Offerors	CPO	April 1, 2021
8.	Interviews of Short-listed Offerors (If held)	Evaluation Committee & Offerors	April 7, 2021
9.	Issue Recommendation of Award to Governing Board/Notice of Intent to Award	CPO & Design Professional	April 12, 2021
10.	Contract Negotiations	District	April 13, 2021
11.	Issue Notice of Award, Prepare Contract	Design Professional & District	April 16, 2021
12.	Protest of Award Deadline	Offeror(s)	May 3, 2021

B. EXPLANATION OF SEQUENCE OF EVENTS

1. Issue RFP

This RFP is issued by the District in accordance with the provisions of Sections 13-1-111 and 13-1-117 NMSA 1978, General Government Administration Procurement Regulations NMAC 1.4.1.29 through 1.4.1.47, and General Government Administration Procurement Code Regulations for Use of Competitive Sealed Proposals for Construction and Facility Maintenance, Services and Repairs, NMAC 1.4.8.1 through 1.4.8.17.

2. Pre-Proposal Conference

This is the date and time of the meeting to review the RFP documents, including the Scope of Work, Response Format, Schedule, and Price Proposal requirements.

In addition to the Pre-Proposal Meeting, the Owner may allow Prospective Offerors the opportunity to visit with the project User Representative with permission from the District Representative. **Please note that after the proposal submission due date, the Offerors are not allowed any contact without the District Representative’s permission. The District, may, however, contact Offerors for clarification purposes, changes in the Schedule of Events, notices of non-responsiveness or responsiveness of proposals, and notices of shortlist status and/or interviews.**

To help prevent the spread of COVID-19, all attendees must wear masks and adhere to social distancing as well as State mandated requirements at the time of the pre-proposal conference.

3. Deadline to Submit Written Questions regarding the RFP Process

This is the date and time set for submitting written questions regarding the RFP document and procurement process to the CPO. Note: questions regarding the drawings and specifications shall be directed to the Design Professional.

4. Response to Written Questions to RFP Process and Addendum

This is the date and time set by the CPO to issue a response to written questions regarding the RFP procuring document or the procurement process. The CPO will coordinate this response with the Design Professional to be included in the issuance of addenda, if applicable.

5. Date of Release of Last Addenda Prior to Submission of Proposals

This is the date that has been set by the Design Professional that signifies no other addenda will be issued on the project so that Offerors have time to finalize their responses.

6. Submission of Proposal

This is the date and time that has been set for the submission of Proposals. Late Proposals will not be accepted. It is the Offeror's responsibility to ensure that Proposals arrive at the appointed location, date and time. Proposals may be delivered early to avoid any possible delay of the submission. The documents shall be in a sealed container with the RFP number:

Portales Municipal Schools
Attn: Sarah Stubbs, Finance Director/CPO
RFP 20-21-0001
501 S Abilene Ave
Portales, NM 88130

Each RFP will be date stamped, the time written, and initialed by the person receiving the RFP at the drop off point.

PROPOSALS RECEIVED AFTER THE DEADLINE SHALL BE CONSIDERED NON-RESPONSIVE. A public log will be kept of the names and submittal times of all Offerors who submitted proposals.

The CPO shall review the proposals for completeness and compliance with the mandatory requirements prior to distribution to the Evaluation Committee. If any proposal submitted is deemed non-responsive, the Offeror will be notified in writing of such determination which will include the right of the Offeror to protest the decision. (See Section II.C.1.). The CPO shall designate a witness to be present during the opening of the proposals. The witness and CPO shall sign the "List of Offerors" for the procurement file.

- a. The Contractor shall submit One (1) **complete** original Technical Proposal digitally on a USB drive and six (6) copies of the original Technical Proposal that include the following:
 - i. General Contractor's Qualifications Tab 2A, including Attachments.
 - ii. Sub-Contractor Qualifications Tab 2B, including Attachments.
 - iii. Remaining Tabs 1-7, including:
 1. Form 00 4334 Sub Qualifications List
 2. Form 00 4336 Subcontractor List, et al.

6A. Submission of copies of Technical Proposals – if applicable

If the CPO so designates, this is the date and time that Offerors may submit **copies** of the Subcontractor Qualifications Statements for distribution to the Evaluation Committee so that an Offeror submission is not jeopardized due to the volume of copies that must be made.

Note: The General Contractor must include one (1) copy of each Subcontractor Qualifications Statement per the 00 4334 Subcontractor Qualifications Statement Listing Form and the 00 4336 Subcontractor Listing Form in the technical proposal that is being submitted on Item 6, Schedule of Events.

7. Proposal Evaluation

This is the date and time that the Evaluation Committee will convene to discuss the proposals and to report individual scores to the CPO. Individual scores shall be recorded on

the Master Score/Rank Sheet. After the scores have been recorded, the CPO shall open the Price Proposals and calculate the points for each Offeror. The CPO shall record the scores allocated to Price for each Offeror on the Master Score/Rank Sheet.

8. Notice of Short-Listed Offerors

The CPO shall send the Score Sheet to PSFA for review prior to any notification of the evaluation results. Upon PSFA approval, the CPO may notify all Offerors of the Short List Rank of Offerors in writing, and state whether or not interviews will be held.

Note: The Selection Committee may hold interviews with the highest-ranked Offerors, where there is a natural break in the scoring. The number of interviews, if held, will be at the discretion of the PSFA and the Selection Committee. If interviews are not held, the decision shall be documented for the procurement file by the CPO.

9. Interview of Short-List Offerors

If interview(s) are to be held, the date, time, and location of the Interview meeting will be included with the notice to those Offerors selected for interview. A list of questions shall be distributed to the Short-List Offerors that includes the points to be allocated to each question. Points allocated to the questions shall be evenly distributed.

NOTE: A “Pre-Interview” meeting may be held by the District Representative, if it is determined it is in the best interest of the short-listed Offerors and the Project, to answer questions regarding the interview process, and to distribute the list of prepared questions to be addressed.

10. Recommendation of Award to Board of Education

The CPO shall prepare a determination letter recommendation to the Board for award of the Project that shall include the ranking of all Offerors and the final ranking of Short-Listed Offerors.

Upon Board of Education approval, the CPO will issue a determination letter and the Design Professional shall prepare the Notice of Intent to Award a contract to the Board approved Offeror.

11. Contract Negotiations

The Owner reserves the right to enter into negotiations with the highest ranked Offeror per NMSA 13-1-115. If contract negotiations are not finalized within a reasonable period of time, the Owner will conclude negotiations with the selected firm and begin negotiations with the next ranked firm based on final ranking.

12. Issue Notice of Award, Prepare Contract

Upon the successful completion of contract negotiations and Board of Education approval, the Architect shall issue the Notice of Award and prepare the Contract for Construction.

13. Protest Deadline

The protest period for **award** of the contract shall begin the day after the date of the Notice of Award. This date shall be determined by the CPO. See Section C, Paragraph 1, below for more detail.

C. STANDARD CONDITIONS GOVERNING THE PROCUREMENT

The Standard Conditions section contains statutory guidelines under which this RFP is issued, and conditions concerning how the project will be completed.

The Owner may evaluate the Proposals based on the anticipated completion of all or any portion of the Project. The Owner reserves the right to divide the Project into multiple parts, to reject any and all Proposals and re-solicit for new Proposals, or to reject any and all Proposals and temporarily or permanently abandon the Project, should the need arise. Owner makes no representations, written or oral, that it will enter into any form of agreement with any Offeror.

1. **Protests**

In accordance with Section 13-1-172 NMSA 1978, any Offeror who is aggrieved in connection with the solicitation of a contract or the award of a contract may protest to the CPO or his/her Designee. The protest must be submitted **in writing** within fifteen (15) calendar days after knowledge of the facts or occurrences giving rise to the protest to the CPO.

The protest letter shall include the name and address of the protestant, the solicitation number, and a statement of the grounds for protest, including appropriate supporting exhibits. The CPO will make a written determination of the resolution (NMSA 1978 13-1-174 & 175) that will be mailed to the protestant and all of the offerors (NMSA 1978 13-1-176).

2. **Incurring Cost**

Any cost incurred by the Offeror in preparation, transmittal, or presentation of any proposal or material submitted in response to this RFP shall be borne solely by the Offeror.

3. **Third-Party or Subcontracting GC Contract Responsibilities**

Direction of all work that may result from this procurement must be performed by the Offeror and payments will only be made to the Offeror. Use of consultants identified in the proposal is permitted, but since the award is made on a quality-based evaluation process, reassignment of GC duties and responsibilities to a third party is not acceptable.

4. **Amendments or Modifications to a Proposal by Offeror**

Per 1.4.1.34 and 1.4.1.35 NMAC, an Offeror may request in writing to amend, modify or withdraw their proposal if the CPO makes a determination that it is in the best interests of the District and the Offeror to do so, prior to the date and time of the receipt of proposals. If the request is accepted to amend or modify a proposal, the Offeror shall replace the incorrect proposals with corrected proposals in their entirety. Substitution of random pages will not be allowed to avoid information being inserted or removed incorrectly. Any amendment or modification to an Offeror's proposal shall be documented for the procurement file by the CPO.

5. **Late Withdrawals or Late Modifications**

Per 1.4.1.36, inclusive of 1.4.1.21 NMAC, submission of a request to withdraw or modify a proposal after the deadline, shall be documented, and shall not be considered unless the written request is received before contract award, and the request to submit, modify or withdraw the proposal would have been timely but for the action or inaction of the CPO.

Any of these occurrences shall be documented by the CPO through a determination, and all Offerors of record shall be notified of the event in writing as soon as possible.

6. **Disclosure of Proposal Contents**

The content of any proposal shall not be opened to public inspection or disclosed prior to award. At that time, all proposals will be open to the public, except for the material

which has clearly been noted and determined by the CPO to be proprietary or confidential as noted by the Offeror.

7. Confidential Data

If a request is received for disclosure of data, for which an Offeror has made written request for confidentiality, the CPO shall make a determination that the data is, in fact, confidential and proprietary financial information concerning the Offeror's organization and whether or not the data qualifies as a trade secret under the Uniform Trade Secrets Act, Sections NMSA 1978 57-3A-7. Unless the Offeror takes legal action to prevent disclosure of data that does not meet the requirements of the Uniform Trade Secrets Act, the data will be so disclosed. After award the proposal shall be open to public inspections subject to any continuing prohibition on the disclosure of confidential data. Any pages of a proposal on which the Offeror has stamped or imprinted "proprietary" or "confidential" shall be readily separable from the proposal in order to facilitate public inspection for the non-confidential portion of the qualifications based proposal.

8. Termination

This RFP may be canceled at any time and any and all proposals may be rejected in whole or in part when the District determines such action to be in the best interest of the District and the State of New Mexico by the CPO.

9. Sufficient Appropriation

Any contract awarded as a result of this RFP process may be terminated if sufficient appropriations or authorizations do not exist. Such termination will be effected by sending written notice to the contractor. The Owner's decision as to whether sufficient appropriations and authorizations are available will be accepted by the contractor as final.

If the determination is made that there is insufficient funding to continue or finalize a project, the successful Offeror will be compensated to the level of effort performed, as authorized by the Owner prior to that determination.

10. Offeror Qualifications

The Evaluation Committee may consider any relevant information or data, from any reliable source (references) relating to the RFP evaluation factors and the Offeror's ability to successfully perform the project. Such information may be obtained from the Offeror's prior customers, commercial and public databases or other reliable sources. The Selection Committee may reject the proposal of any Offeror who is not a responsible Offeror or fails to submit a responsive offer as defined in Sections 13-1-83 and 13-1-85 NMSA 1978. The recommendation will be submitted to the CPO who will write up a determination letter and submit to the Offeror and become part of the procurement record.

11. Right to Waive Minor Irregularities

The Selection Committee reserves the right to waive minor irregularities per 1.4.1.42 NMAC 2005 (see Definitions). The Selection Committee also reserves the right to waive mandatory requirements provided that all of the otherwise responsive proposals failed to meet the same mandatory requirements and the failure to do so does not otherwise materially affect the procurement. This right is at the sole discretion of the Selection Committee which will be reported to the CPO who will write up a determination stating the reasons for the waiver that will become part of the procurement file.

12. Notice for Bribes, Gratuities, and Kickbacks

The New Mexico criminal statutes impose felony penalties for bribes, gratuities and kickbacks (NMSA 1978 13-1-191).

13. Release of Information

Only the CPO is authorized to release information about the project(s) covered by this RFP. The Offerors must refer to the CPO any requests to release any information that pertains to the work or activities covered by any action or award related to this RFP.

14. Project Reporting

In addition to the normal project meetings with the Owner, successful Offeror is required to work with the District Representative, the Project Architect, and the PSFA Regional Manager to ensure the project records are uploaded into the PSFA construction information management system. Training for use of this system will be provided by the PSFA training staff. If you have not been trained to use the construction information management system, please check the PSFA website at www.nmpsfa.org for training schedules and information as soon as possible.

15. New Mexico Prevailing Wage Rates

Wages to be paid as a result of a contract awarded for this project will be subject to the minimum wage rate determination by the State of New Mexico, and will be attached to the final contract documents. This determination will become part of the contract by reference and must be posted, per State of New Mexico Statutes, in a conspicuous place at the General Contractor's place of business. It is the General Contractor's responsibility to be aware of the applicable State of New Mexico statutes and responsibilities related thereto. Failure by the Owner to physically make such minimum wage rate determinations available to the General Contractor will not relieve the General Contractor from becoming aware of or complying with such determinations.

16. Clarifications from Offerors

The CPO may, at the request of a Selection Committee designee request clarifications on information submitted by any and all Offerors.

17. Licensing Requirements

The Contractor and subcontractors shall comply with all licensing regulations and the Contractor shall provide copies of all valid licenses necessary to perform the work in the State of New Mexico.

18. Subcontractors

The Subcontractors Fair Practices Act, 13-4-31 et. seq. per NMAC 1.4.8.13, para. C applies to this procurement. Therefore, any request for substitution on the part of the Owner or the Offeror shall comply with this section.

III. RFP RESPONSE FORMAT AND ORGANIZATION

A. NUMBER OF RESPONSES

General Contractors shall only submit one offer. See Paragraph B for the number of copies of the offer required. Multiple offers by one General Contractor are not allowed. Please note that the CPO, after award, shall retain the original Technical Proposal and Price Proposal for the procurement file as a matter of record.

NOTE: SUBMIT Original Price Proposal with the original Technical Proposal. It shall be submitted in a clearly marked sealed envelope easily removable from the Technical Proposal including the RFP# 20-21-0001 and the name of the contractor on the outside of the envelope.

B. NUMBER OF COPIES OF RESPONSES

In addition to the Original Technical Proposal and Price Proposal submittal, Offerors shall provide **six (6)** identical copies of the proposals for the Evaluation Committee and one digital copy on a USB file. The District may allow the copies of the Subcontractor Qualifications Statements to be submitted at a later time to ensure timely delivery of the proposal response.

Note: Offerors may be afforded 24 hours to submit the additional copies of the Subcontractors Qualifications Statements.

After award of a contract all documents will be scanned for the procurement file, the hard copies the Offerors provided will be destroyed unless the Offeror of record makes arrangements with the CPO to have their proposal copies returned or picked up. The District shall not be responsible for any shipping or mailing costs to return copies of the proposals.

C. SUBMISSION OF PROPOSAL

Hand Carried: Proposals may be hand carried/delivered. If requested, the District may give the person delivering the proposal package a receipt that notes the firm name, date and time the proposal was delivered for the Offeror files.

Common Carrier or USPS: Offers may be shipped/mailed by common carrier or courier. Be advised that the District is not responsible for offers that are not received timely. It is solely the responsibility of the Offeror to ensure the submittal arrives on time at the location state herein.

No Other Methods of Offer Delivery Allowed: Telephone, telegraphic, facsimile or electronic offers will NOT be accepted (accept as otherwise noted).

D. GENERAL RESPONSE INSTRUCTIONS AND INFORMATION

1. Proposals shall be prepared SIMPLY AND ECONOMICALLY, providing straightforward, CONCISE description of the respondent's ability to meet the requirements of this RFP. Emphasis shall be on the completeness, clarity of content, responsiveness to the requirements, and an understanding of the owner's needs.
2. Respondents shall carefully read the information contained in this RFP and submit a complete response to all requirements and questions as directed. Incomplete Proposals will be considered non-responsive and subject to rejection.

3. Offerors shall prepare and develop proposals at the sole expense of the Offeror.
4. Proposals that are qualified with conditional clauses, alterations, items not called for in the RFP documents, or irregularities of any kind are subject to rejection by the Owner. Questions regarding the procurement process, the RFP documents, general requirements, terms and conditions, etc. must be submitted in writing prior to the submission of Proposal for clarification purposes.
5. If your proposal contains proprietary/confidential information, you shall stamp those pages so that they are easily identifiable by the CPO. Those pages shall be examined and a written determination shall be made that specifies which portions of the proposal may not be disclosed. If the Offeror disagrees, they are entitled to take legal action to prevent the disclosure.
6. Proposals shall consist of answers to questions or requirements identified in the RFP. It is not necessary to repeat the question in the Proposals; however, it is essential to reference the question number with the corresponding answer.
7. All amendments and addenda shall be acknowledged on the Price Proposal Form where designated.

VOLUME I – TECHNICAL PROPOSAL

A. Technical Proposal Format

Proposals may be submitted in a spiral or three-ring binder. Page format shall include 8-1/2" x 11" paper and 11" x 17" foldout sheets in size. Foldout pages shall be counted as two pages and shall be numbered as such. Text will be no smaller than 10 point. If there are any questions regarding format requirements, please contact the CPO prior to submission.

Proposals shall not exceed 30 pages total for the tabbed sections 3, 4, 5, 6 and 7 (tabbed Section 2A & 2B, Contractor and Subcontractor Questionnaire Attachments, shall be not be counted in the total pages described herein). Each sheet face that is printed with text or graphics counts as one page. Tab dividers do not count as pages provided the only text or graphics on the divider are the tab number and section title.

Offerors are cautioned to please keep the required documents/attachments in each category to concise, easily readable and applicable information.

B. Tabs/Evaluation Categories:

All sections shall be separated by a numbered tab that corresponds to the Evaluation Category, 1 through 6, described below.

TAB 1 SIGNED LETTER OF SUBMITTAL AND MANDATORY FORMS

00 4334 Subcontractor Qualifications Statement Listing Form

00 4336 Subcontractor Listing Form w/Registration Number and Anti-Trust signatures (before contract is signed)

Resident Contractor Preference Certificate

OR Resident Veteran Contractor Preference Certificate

Campaign Contribution Form

TAB 1 Letter of Submittal Requirements

Each proposal must be accompanied by a submittal letter. **Any submittal letter that omits any of the following information may be deemed ‘non-responsive’.** The submittal letter shall include acknowledgments and where appropriate, certification of the following:

1. Identify the name(s), title(s), telephone number(s), fax number(s) and e-mail address(es) of the person or persons who have authority to sign documents and who has sufficient knowledge to fully address all matters and respond to all inquiries included in the RFP submittal.
2. If a joint proposal is being submitted, identify the firm, and disclose the work/services to be executed by the nonresident contractor as a percentage of the total amount of the Price Proposal. The resident contractor or veteran contractor preference will be apportioned to the technical, price, and interview (if held) scores based on the percentage of work being performed by the in-state Offeror minus the out-of-state Offeror’s percentage of the work.
3. Acknowledge acceptance of all conditions that govern the procurement.
4. Acknowledge that the information provided in the proposal is truthful, accurate and complete, and that the firm is bound by all information, data, certifications, disclosures and attachments submitted.
5. Acknowledge that the omission of any material fact concerning requested information, or the submission of any material false or misleading statement, or misrepresentation of a material fact concerning any requested or submitted information, may deem the proposal ‘non-responsive’.
6. Acknowledge that the Owner has a right to obtain relevant information from other sources (references) to determine that the Offeror is ‘responsible’.
7. Acknowledge that if awarded the contract, the RFP documents, all terms and conditions stated herein, all information, data, certifications, disclosures and addendum shall be a part of the Contract.
8. Statement/Certification and/or documentation that the firm possesses the necessary equipment, financial resources, technical resources, management, professional and craft personnel resources and other required capabilities to successfully perform the contract, or will achieve same through its prelisted subcontractors with supporting information, pictures, diagrams, reports, etc.
9. Letter of Submittal shall be signed by a person or persons identified in Paragraph 1 of this section, who is/are fully authorized to contractually obligate the firm, and who has sufficient knowledge to fully address all matters and respond to all inquiries including the RFP submittal.

TAB 2A & 2B – GENERAL CONTRACTOR &

SUBCONTRACTOR QUALIFICATIONS

NOTE: The attachments to this section are in addition to, and are not counted in the 30 pages allowed per Section IV, Volume I, Technical Proposal, Para. A for Tabs 3, 4, 5, 6 and 7.

TAB 2A – GENERAL CONTRACTOR QUALIFICATIONS STATEMENT SUMMARY

1. Firm name and address, type of organization, years in business, other names business may have operated under.
2. Licensing Information (provide a copy)
3. Experience completing Three (3) or more educational facilities, addition and/or renovation project of similar complexity totaling 30,000 square feet or more since **the year** 2010 as the proposed project – List a maximum of 5 Projects (Projects will be described in detail in Attachment A of the Contractor Qualification Statement)
4. Key Personnel Experience
5. Capacity and Capability to Perform the Work
6. Surety Name and Bonding information (provide a copy)
7. Safety Information
8. Insurance Claims and History
9. Quality Assurance
10. Project Scheduling
11. Labor Code Violations
12. Judgments/Breach of Contract
13. Contractor Comments/Other Information

TAB 2A GENERAL CONTRACTOR ATTACHMENTS

Attachment A – Project Experience of Similar Complexity and Scope/Qualifications

Provide a maximum of 5 examples on Attachment A Form provided

- a. Experience on Similar projects totaling 30,000 square feet since 2010
- b. Project execution
- c. Customer satisfaction

Attachment B – Resumes for Project Manager, Superintendent, Safety, other key personnel

Attachment C – Organizational Chart of Project Management Team

Attachment D – Projects currently under construction totaling 30,000 square feet.

Attachment E – Notarized declaration of surety

Attachment F – **ONE (1)** Copy of Firm's written safety plan

Attachment G – Letter from Insurance Carrier on their letterhead

Attachment H – Written Assurance Program

Attachment I – Affidavit of non-violation of Labor codes

TAB 2B SUBCONTRACTOR QUALIFICATION STATEMENT SUMMARY

Note: The attachments to this section are in addition to, and do not count toward the 30 pages allowed per Section IV, Volume I, Technical Proposal, Para. A for Tabs 3, 4, 5 and 6.

Per NMAC 1.4.8 RFP for Construction and Facility Maintenance, Services and Repairs, Para. 1.4.8.12, subparagraph D (2), the value of the subcontractors' work that meets the listing threshold state below shall submit a Qualifications Statement:

“Subcontractor Qualification Statements. Subcontractor qualification statements shall be required for all subcontractors identified in the technical proposal pursuant to the subcontractor listing requirements 1.4.8.13 NMAC, where the value of the subcontract is fifty thousand (\$50,000) or five percent (5%) whichever is greater. A using agency MAY reserve the right to require subcontractor qualification statements from any other subcontractors, at whatever tier and regardless of the value of the subcontract.”

1. Offeror Information
2. Licensing
3. Experience completing one or more facilities over 15,000 square feet since 2010.
List a maximum of 3 projects.
4. Key Personnel
5. Capacity and Capability
6. Safety
7. Insurance and Claims History
8. Quality Assurance
9. Labor Code Violations
10. Subcontractor Comments
11. Other Information
12. Provide certification and/or documentation that the firm possesses the necessary equipment, financial resources, technical resources, management, professional and craft personnel resources and other required capabilities to successfully perform the contract, or will achieve same through its prelisted subcontractors.

TAB 2B – SUBCONTRACTOR ATTACHMENTS

Attachment A – Project Experience of Similar Complexity and Scope/Qualifications

Provide a maximum of 3 examples on Subcontractor Attachment A Form provided

Attachment B – Resumes for Project Manager, Superintendent, other key personnel

Attachment C – Similar Projects

Attachment D – Written Safety Plan

Attachment E – Written Quality Assurance Program

Attachment F – Affidavit of non-violation of Labor codes

Attachment G – Judgments/Breach of Contract, Mediations & Arbitrations

Attachment H – Subcontractor Comments/Other Information

Attachment I – Certify and/or document firm possesses necessary equipment, financial resources, technical resources, management, professional and craft personnel resources and other required capabilities to successfully perform the contract

TAB 3 – PAST PERFORMANCE

Please provide the following information:

- A. Capability to meet schedules, budgets and project administration requirements for past projects listed in Attachment A:
1. Were any of the projects completed early? If yes, identify the project(s) and describe how this was accomplished.
 2. Were any of the projects completed late? If yes, identify the project, how many days late, and the reason(s) why the completion date was delayed.
 3. How many days after Substantial Completion were required to complete the punch list items on each project listed?
 4. Was your firm or your subcontractors called back to any of the projects listed for any reason during the warranty period? After the warranty period?
 5. Were there any outstanding issues remaining after the warranty inspection on any of the projects you've listed?
 6. Did your firm, for any reason, refuse to do additional work required by the Owner? If yes, identify the project and state the reason(s) why.
 7. What was your firm's process for vetting the pricing from your subcontractors and suppliers on change orders in order to ensure fair pricing to the Owner?
 8. What was the dollar threshold below which your firm absorbed additional cost changes in order to avoid disproportionate administrative costs for all parties? Give examples of the changes on the project listed for which your firm absorbed the costs.
- B. Describe the role of each teaming partner on the contract.
- C. Evidence of past performance quality and overall customer satisfaction.
- D. Record of compliance with applicable laws and regulations on past projects.
- E. Past record of achievement of health and safety targets.

TAB 4 – PROJECT STAFFING

Please provide the following information:

- A. Brief resume (education, professional certification(s), years with firm, total years of experience, and a brief description of experience supporting the proposed role) for key project personnel to be assigned to this project.
- B. Address the extent to which key personnel have worked together as a team on project of similar or greater magnitude and on projects of the same nature. Provide a matrix that lists key staff names across the top of the matrix and list past projects down the side of the matrix. The project list should begin with all of the projects that appear in Item 3.a of the General Contractor's Statement of Qualifications. The project list may also include up to five more projects that demonstrate how the key personnel have worked together as a team. At each intersection within the field of the matrix, list the role that the person filled on that particular project (such as Project Manager Site Superintendent, Safety Manager, QA/QC Manager, Estimator, etc.).\
- C. Describe Contractor's and subcontractors' participation in skill training
- D. Address reliable staffing sources/project staffing

TAB 5 – MANAGEMENT PLAN

Provide a brief narrative of the approach to the following issues as they pertain to this project:

Management Team: Provide an organizational chart of the Management Team and address how critical subcontractors were selected and will be managed.

- A. Describe how the construction will be organized, managed, and administered to meet the project requirements, including security and safety controls, staging areas, delivery routes, crane locations and interfaces required at the site with the using agency.
- B. Provide a sequencing plan to illustrate how the school will remain operational during construction based on the information given on GI103.
- C. Describe the technical approach to the project that is intended to ensure that tasks are executed within cost, schedule and quality goals.
- D. Provide a proposed project schedule. Indicate critical dates and other information in sufficient detail for the Evaluation Committee to determine if time frames are reasonable.
- E. Provide information regarding your firm's ability to deliver the project within the allotted construction time.

TAB 6 – HEALTH AND SAFETY

Please provide the following information:

- A. Provide a summary description of the General Contractor's Health and Safety management system. Include information about COVID-19 health and safety protocol.

NOTE: One copy only of the full General Contractor's written Safety Plan is required as Attachment F of the General Contractor Statement of Qualifications.

- B. Identify the competent person responsible for, and capable of, implementing the safety and health program/plan.
- C. Address the project specific health and safety risks that have been identified by the RFP and additional risks that the Offeror's team has identified. Describe processes to minimize risk and to ensure that health and safety issues are clearly communicated with the Contractors, Subcontractors, and the Owner.

(See Section IV.B. Evaluation Criteria below for detailed scoring guidelines for the 'Health and Safety' category).

TAB 7 NEW MEXICO PRODUCED WORK

Indicate the volume of work by percentage to be produced by New Mexico firms, using New Mexico based employees on this project. Indicate the number of New Mexico based employees that will be a part of the project team.

(See Section IV.B Evaluation Criteria below for detailed scoring guidelines for the New Mexico Produced Work' category).

NOTE REGARDING TABS 3, 4, 5, 6 AND 7:

There may be a duplication of required information on Attachments of the General Contractor Statement of Qualifications and other sections of the Technical Proposal. The purpose of Tabs 4, 5, 6, and 7 is to allow the Offeror the ability to present more concise information regarding the strengths of the proposed team, and to identify information that the Selection Committee can use for scoring. If the Offeror so chooses, other sections of the Technical Proposal may be referenced within these Tabs, without wholly duplicating information provided. Also, information presented elsewhere may be summarized or condensed within these Tab sections to make the Offeror's proposal more clear.

VOLUME 2 – PRICE PROPOSAL

(Provide One Original Copy of Below Information in Separate Sealed container. Price Proposal Form is included in Div. 00 of the Project Manual)

1. **PRICE PROPOSAL AMOUNT**— use the Lump Sum Proposal form provided in the project manual. Price *shall not* include NM Gross Receipts Tax. However, the GRT will be added to the contract.

NOTE: If a joint proposal is being submitted, be sure you have stated the % of the work/services that will be performed by the nonresident contractor stated, based on the dollar amount of the Price proposed and include your valid in-state preference number assigned by NM Taxation and Revenue on the Proposal Form. Copies of your certificate shall be included in the Technical Proposal, so the preference points are considered and applied correctly.

2. **ANY ALTERNATES OR BID LOTS LISTED** must be clearly identified by cost.
3. **STATE OF NEW MEXICO W-9**
4. **AGENT’S AVIDAVIT**
5. **PROPOSAL BOND**
6. **CERTIFICATE OF INSURANCE**
7. **POWER OF ATTORNEY**
8. **LICENSES, PREFERENCE, REGISTRATION, AND ANY OTHER NUMBERS REQUIRED ON THE PROPOSAL FORM**

IV. PROPOSAL EVALUATION

A. EVALUATION PROCESS AND SCORING METHODOLOGY

1. **Receipt and Opening of Proposals**

Proposals received prior to or at submission shall be time-stamped upon receipt and the Price Proposal shall be separated from the Technical Proposal and held in a secure place until the Evaluation Committee has scored the Technical Proposal. Proposals shall not be opened publically and shall not be open to public inspection until the contract for construction is signed by the successful Offeror.

2. **Evaluation Committee**

The Evaluation Committee shall consist of a minimum of three (3) persons, but no more than six (6) persons appointed by the CPO that possess expertise in the technical

requirements of the project, construction design and contracting. The Owner may use independent consultants or agents to support the Committee, provided appropriate precautions are taken to avoid potential conflicts of interest.

3. Technical Proposal

The CPO shall review each proposal to determine if it meets all of the mandatory requirements. Proposals that do not meet the mandatory requirements may be considered “nonresponsive”. The CPO reserves the right to contact an Offeror to clarify contents of any Technical Proposal.

Any Offeror whose proposal is determined to be non-responsive shall be notified in writing of the determination as soon as possible by the CPO. The CPO will then distribute the proposals and individual score sheets to the Evaluation Committee, and review evaluation criteria.

4. Price Proposal

Price Proposals shall be evaluated on the basis of the numerical weight assigned below and as well as the NM resident/veteran contractor preference law. The regulatory scoring process permits the scoring of competing Offeror’s price proposals in relation to one another: The Offeror with the lowest price shall receive the maximum price score, i.e., the maximum numerical weight assigned to the price below. The price score of each other Offeror shall be determined by applying the following mathematical formula: price of lowest Offeror divided by the price for this Offeror multiplied by the maximum price score:

$$\frac{\text{Price of lowest Offeror}}{\text{Price of this Offeror}} \times \text{maximum price score} = \text{price score this Offeror}$$

The Evaluation Committee members shall score the technical proposals individually. Those individual scores will then be combined with the price proposal score and converted to a numeric ranking of all proposals per committee member. The individual member rankings per Offeror will then be totaled and averaged to determine the overall ranking of proposals. The Committee will then determine whether or not to conduct interviews based on the final ranking.

5. Resident Contractor Preference and Resident Veteran Contractor Preference

NMSA 1978, Section 13-1-22:

When a public body makes a purchase using a formal request for proposals process, not including contracts awarded on a point-based system, the public body shall award an additional:

- (a.) Five percent of the total weight of all the factors used in evaluating the proposals to a resident business; or
- (b.) Ten percent of the total weight of all the factors used in evaluating the proposals to a resident veteran business that has annual gross revenues of up to three million dollars (\$3,000,000) in the preceding tax year.

When a public body makes a purchase using a formal request for proposals process, and the contract is awarded based on a point-based system, the public body shall award additional points equivalent to:

- (a.) Five percent of the total possible points to a resident business; or
- (b.) Ten percent of the total possible points to a resident veteran business that has annual gross revenues of up to three million dollars (\$3,000,000) in the preceding tax year.

When a joint bid or joint proposal is submitted by a combination of resident veteran, resident or nonresident businesses, the preference provided pursuant to Section 13-1-22, Subsection B, C, D or E of this section shall be calculated in proportion to the percentage of the contract, based on the dollar amount of the goods or services provided under the contract, that will be performed by each business as specified in the joint bid or proposal.

The preference calculation formula shall be applied to each Offeror on the Procurement Manager's Master Score/Rank sheet that has a valid preference certificate and number issued by the NM Taxation and Revenue Department.

6. Proposal Discussions

Per 1.4.1.39 NMAC 2005, if mistakes are discovered after receipt of the proposal, The Evaluation Committee may request clarifications of information submitted by any or all Offerors in a written format with a specified deadline for response.

Short-listed Offerors shall be accorded fair and equal treatment with respect to any clarifications of proposals. If during discussions there is a need for any substantial clarification of or change in a RFP, the RFP shall be amended to incorporate such clarification or change. Any substantial oral clarification of a proposal shall be reduced to writing by the short-listed Offeror.

NOTE: Except for circumstances and situations otherwise approved by the CPO, negotiations of the relevant terms and conditions as well as any other important factors in an RFP and proposed contract are negotiated PRIOR TO AWARD OF A CONTRACT, NOT AFTER AWARD.

7. Interviews:

If interviews are held, the Evaluation Committee shall score each question, and the total points shall be translated to a rank. Each interview question shall have the same weight. Example: If the Interview is worth 50 points, and you have 5 questions, each question shall be worth 10 points. The same questions will be issued to each short listed firm as a benchmark for evaluation purposes. Each question may lead to other questions to help clarify and better understand the firm's capabilities, which may be considered in scoring the interview.

Interview points shall be added to the Technical Proposal and Price Proposal and re-calculated to determine the final overall rank of Short-listed Offerors for recommendation for award of a contract.

8. Short-Listed Offeror Withdrawal from Interview:

A short-listed firm may withdraw their proposal if they determine that cannot improve their position if interviews are held. This event shall be documented for the procurement file by the CPO, and a notice shall be sent to all Offerors of record of the event. If the

next ranked firm is invited to interview, their final points/rank for their Technical/Price evaluation does not change.

B. EVALUATION CRITERIA:

The criteria below aligns with the 1.4.8 NMAC 2007 Rules that govern the process.

VOLUME 1 – TECHNICAL PROPOSAL

TAB 1	LETTER OF SUBMITTAL 00 4334 Sub Qualifications Statement Listing Form 00 4336 Subcontractor/WFS#/Anti-Trust Listing Form Resident OR Veteran Contractor Preference Certificate Campaign Contribution Form	Mandatory
TAB 2A	GENERAL CONTRACTOR QUALIFICATIONS STATEMENT	15 POINTS
	<ul style="list-style-type: none">a. Written Safety Program Compliant, Provide 1 copyb. List of key safety personnel/safety manager for this projectc. Modification rate for past 5 yearsd. Recordable incident rate for past calendar year OSHA 300 Loge. Free of committing serious/willful violation of Federal/State safety laws	
TAB 2B	SUBCONTRACTOR QUALIFICATIONS STATEMENT	10 POINTS
	<ul style="list-style-type: none">a. Written Safety Program Compliant; Provide 1 copyb. Experience Modification Rate past 5 Yearsc. Recordable Incident Rate for past calendar year OSHA 300 logd. Free of committing serious/willful violationse. Of Federal/State safety laws	
TAB 3	PAST PERFORMANCE	15 POINTS
	<ul style="list-style-type: none">a. Budget & Schedule Data (See III Response Format, Technical Proposal, Tab 3, questions 1-8)b. Performance quality and overall customer satisfaction if availablec. Compliance with Applicable Laws & Regulationsd. Safety Performance Record	
TAB 4	MANAGEMENT PLAN	10 POINTS
	<ul style="list-style-type: none">a. Reliable Staffing Sources/Project Staffingb. Management Team/Selection of Subcontractorsc. Organization construction tasks/security/safety/staging areasd. Technical approach to meet costs/schedule/sequencing/qualitye. Project Schedule/critical datesf. Project plan for completion on time	
TAB 5	PROJECT STAFFING/CRAFT LABOR CAPABILITIES	8 POINTS
	<ul style="list-style-type: none">a. Management Team resumes, experienceb. Team members experience in this project team role	

- c. Proposed team prior working relationships on other projects
- d. GC and proposed subcontractor skill training
- e. Project Schedule

TAB 6 HEALTH AND SAFETY

8 POINTS

- a. Summary description of Health & Safety Plan
- b. One Full Copy of Written Safety Plan
- c. Competent Person Responsible/Capable of Implementing
- d. Project Specific Health/Safety Risks
- e. Describe processes to clearly communicate Health/Safety risks

TAB 7 OTHER/VALUE ADDED CRITERIA (select *one*)

4 POINTS

- a. NM produced work All listed subcontractors are NM firms *or*
- b. All except one listed subcontractors are NM firms *or*
- c. All except two of the listed subcontractors are NM firms *or*
- d. All except three or more of the listed subcontractors are NM firms

VOLUME 2 – PRICE PROPOSAL

PRICE PROPOSAL FORM (Amount stated to be translated to points)

30 POINTS

TOTAL POINTS

100 POINTS

INTERVIEWS, if held

50 POINTS

GRAND TOTAL

150 POINTS

C. CAMPAIGN CONTRIBUTION DISCLOSURE FORM

Note: Submit with Transmittal Letter/Technical Proposal

Pursuant to NMSA 1978, § 13-1-191.1 (2006), any person seeking to enter into a contract with any state agency or local public body for professional services, a design and build project delivery system, or the design and installation of measures the primary purpose of which is to conserve natural resources must file this form with that state agency or local public body. This form must be filed even if the contract qualifies as a small purchase or a sole source contract. The prospective contractor must disclose whether they, a family member or a representative of the prospective contractor has made a campaign contribution to an applicable public official of the state or a local public body during the two years prior to the date on which the contractor submits a proposal or, in the case of a sole source or small purchase contract, the two years prior to the date the contractor signs the contract, if the aggregate total of contributions given by the prospective contractor, a family member or a representative of the prospective contractor to the public official exceeds two hundred and fifty dollars (\$250) over the two year period.

Furthermore, the state agency or local public body shall void an executed contract or cancel a solicitation or proposed award for a proposed contract if: 1) a prospective contractor, a family member of the prospective contractor, or a representative of the prospective contractor gives a campaign contribution or other thing of value to an applicable public official or the applicable public official's employees during the pendency of the procurement process or 2) a prospective contractor fails to submit a fully completed disclosure statement pursuant to the law.

THIS FORM MUST BE FILED BY ANY PROSPECTIVE CONTRACTOR WHETHER OR NOT THEY, THEIR FAMILY MEMBER, OR THEIR REPRESENTATIVE HAS MADE ANY CONTRIBUTIONS SUBJECT TO DISCLOSURE:

The following definitions apply:

“Applicable Public Official” means a person elected to an office or a person appointed to complete a term of an elected office, who has the authority to award or influence the award of the contract for which the prospective contractor is submitting a competitive sealed proposal or who has the authority to negotiate a sole source or small purchase contract that may be awarded without submission of a sealed competitive proposal.

“Campaign Contributions” means a gift, subscription, loan, advance or deposit of money or other thing of value, including the estimated value of an in-kind contribution, that is made to or received by an applicable public official or any person authorized to raise, collect or expend contributions on that on that official's behalf for the purpose of electing the official to either statewide or local office. “Campaign Contributions” includes the payment of a debt incurred in an election campaign, but does not include the value of services provided without compensation or unreimbursed travel or other personal expenses of individuals who volunteer a portion or all of their time on behalf of a candidate or political committee, nor does it include the administrative or solicitation expenses of a political committee that are paid by an organization that sponsors the committee.

“Family Member” means spouse, father, mother, child, father-in-law, mother-in-law, daughter-in-law or son-in-law.

“Pendency of the Procurement Process” means the time period commencing with the public notice of the request for proposals and ending with the award of the contract or the cancellation of the request for proposals.

“Person” means any corporation, partnership, individual, joint venture, association or any other private legal entity.

“Prospective contractor” means a person who is subject to the competitive sealed proposal process set forth in the Procurement Code or is not required to submit a competitive sealed proposal because that person qualifies for a sole source or a small purchase contract.

“Representative of a prospective contractor” means an officer or director of a corporation a member or manager of a limited liability corporation, a partner of a partnership or a trustee of a trust of the prospective contractor.

DISCLOSURE OF CONTRIBUTIONS:

(Note: If you have made more than one contribution, please attach a list of the public officials you have contributed to following the format and attach the list to this document. Please write “see attached” in the blank below.)

Contribution Made By:

Relation to Prospective Contractor:

Name of Applicable Public Official on the District Board of Education:

(Note: List Board of Education Member(s) here)

Date Contribution(s) Made:

Amount(s) of Contribution(s):

Nature of Contribution(s):

Purpose of Contribution(s)

(Attach extra pages if necessary)

Signature _____

Date _____

Title (position) _____

--OR--

NO CONTRIBUTIONS IN THE AGGREGATE TOTAL OVER TWO HUNDRED FIFTY DOLLARS (\$250) WERE MADE to an applicable public official by me, a family member or representative.

Signature _____

Date _____

Title (position) _____

PORTALES MUNICIPAL SCHOOLS

BROWN EARLY CHILDHOOD CENTER PRE-K AND SYSTEMS PROJECT

REQUEST FOR PROPOSAL FOR CONSTRUCTION 20-21-0001

*For the convenience of the contractors, an electronic version of this RFP may be issued for your use. Any changes to the document's questions or language that differs from the wording as issued in the RFP dated **January 31, 2021** other than to fill in answers for the questions asked, will constitute a non-responsible proposal.*

STATEMENT OF QUALIFICATIONS FOR GENERAL CONTRACTORS

Project Name: _____

1. OFFEROR INFORMATION

Name: _____

Address: _____

Principal Office: _____

Corporation Partnership Sole Proprietorship Joint Venture

Other _____

a. How many years has your organization been in business as a Contractor? _____

b. How many years has your organization been in business under its present business name?

c. Under what other or former names has your organization operated?

2. LICENSING

a. Name of license holder (or qualifying party) exactly as on file with the State of New Mexico Construction Industries Division:

b. License Classification: _____ License Code: _____

c. License Number: _____

d. Issue Date: _____ Expiration Date: _____

e. Is the firm's contractor's license free of ever being suspended or revoked by the CID or by the appropriate licensing agency in any other state?

() Yes, free of suspension or revocation () No IF no, attach explanation.

f. Does your firm hold all applicable Business licenses required by State of New Mexico?

License Number: _____ Jurisdiction: _____

Fill in name of license holder, exactly as it appears on file with jurisdictional authorities:

(Name)

Issue Date: _____ Expiration Date: _____

License Number: _____ Jurisdiction: _____

Fill in name of license holder, exactly as it appears on file with jurisdictional authorities:

(Name)

Issue Date: _____ Expiration Date: _____

License Number: _____ Jurisdiction: _____

Fill in name of license holder, exactly as it appears on file with jurisdictional authorities:

(Name)

Issue Date: _____ Expiration Date: _____

g. Is your firm free from formal debarment from public works, federal, state or local public works jurisdictions?

() Yes () No (Attach explanation)

3. EXPERIENCE

a. Has your firm completed three (3) or more educational facility, addition and/or renovation project(s) of

similar complexity totaling 30,000 square feet or more since 2010, as the proposed project? Complete **Attachment A** for five (5) maximum projects listed:

Yes Number of Projects: _____ No

Project 1 Name: _____

Project 2 Name: _____

Project 3 Name: _____

Project 4 Name: _____

Project 5 Name: _____

- b. State the average annual amount of construction work performed during the past five years:
\$ _____
- c. Also, on **Attachment A**, list major construction project your organization has in progress, giving the name of the project, owner, architect, contract amount, percent of completion, and scheduled completion date.
- d. List the categories of work that your organization normally performs with its own forces.

4. **KEY PERSONNEL EXPERIENCE**

Please note that more consideration will be given to those meeting or exceeding the required qualifications below:

- a. Does your assigned Project Manager have the following minimum qualifications and experience? (Attach Resume at **Attachment B**)

(1) At least ten (10) years experience in the construction industry?

Yes Number of Years: _____ No

(2) Experience on at least one (1) construction type as identified in 3. EXPERIENCE Item a

Yes Number of Projects _____ No

(3) Experience as a Project Manager on one (1) or more construction projects
Totaling 30,000 square feet or more?

Yes Number of Projects _____ No

- b. Does your assigned Project Foreman/Superintendent have the following minimum qualifications and experience? (Attach Resume at **Attachment B**)

(1) At least ten (10) years experience in the construction industry?

Yes Number of Years: _____ No

(2) Experience on at least one (1) construction type as identified in 3a.?

Yes Number of Projects _____ No

(3) Experience as a Project Foreman/Superintendent on one (1) or more construction projects totaling 20,000 square feet or more?

Yes Number of Projects _____ No

c. Does your Safety Program Manager have the following minimum qualifications and experience? (Attach Resume to **Attachment B**)

(1) At least five (5) years experience in a safety management role?

Yes Number of Years: _____ No

(2) Experience on at least one (1) construction type as identified in 3a.?

Yes Number of Projects _____ No

d. Does your Quality Assurance/Quality Control (QA/QC) Manager have the following minimum qualifications and experience? (Attach Resume to **Attachment B**)

(1) At least five (5) years experience in a safety management role?

Yes Number of Years: _____ No

(2) Experience on at least one (1) construction type as identified in 3a.?

Yes Number of Projects _____ No

_____ Years with your firm: _____

Present Position/Job Title: _____ Years in position: _____

List other project(s) this person has had a similar role for the past five (5) years:

Is your QA/QC a Principal or Officer of the firm? () Yes () No

— —

e. Please include an Organizational Chart (**Attachment C**) of the Management Team that will be assigned to this project. Identify relationships, duties and responsibilities and key roles of each individual.

5. CAPACITY AND CAPABILITY TO PERFORM THE WORK

a. Resources: Total number of current employees: Project Managers _____
Estimators _____
Superintendents _____
Foremen _____
Tradesmen _____
Administration _____
Other _____

- b. Does your firm have the immediate capacity to perform the work required for this project:
 Yes No
- c. Please list all projects currently under contract totaling over 30,000 square feet with scheduled completion dates (**Attachment D**)
 See Attachment D None

6. SURETY

- a. Firm's current surety company:

Will this surety be used for the construction contract for this project?

- Yes No (attach explanation)

Contact Agent Name: _____ Telephone: _____

Years utilizing this surety: _____ Maximum Capacity: _____

Aggregate Total of current surety in force: _____

- b. Is the surety company to be used on this project licensed to do business in the State of New Mexico?

- Yes No (attach explanation)

- a. Is your firm free of having any construction contracts taken over by a surety for completion in the past five (5) years?

- Yes No (attach explanation)

- c. Has your firm used other surety companies since 2001? Yes (list) No

Surety Company	Contact

Surety Company	Contact

Surety Company	Contact

- d. Is your firm able to obtain bonding in the amount required for the completion of this project? Provide a notarized declaration from the surety identified above, stating the amount of bonding capacity available to your firm for this project at **Attachment E**.

- Yes No (attach explanation)

7. SAFETY

a. Does your firm have a written safety program compliant with current State regulations? Provide one (1) copy of your firm's written safety program at **Attachment F**.

Yes No (attach explanation)

b. Provide a list of key safety personnel, including the designated safety manager who will be assigned to this project, and list specific duties.

Name and Title	Specific Duties
_____	_____

Name and Title	Specific Duties
_____	_____

_____	_____

_____	_____

c. Provide the experience modification Rate for the past five (5) years:

_____ / _____ / _____ / _____ / _____

d. Provide the Recordable Incident Rate for the past calendar year: _____

e. Is your firm free of committing serious or willful violations of federal or state safety laws as determined by a final non-appealable decision of a court or government agency?

Yes No (attach explanation)

8. INSURANCE & CLAIMS HISTORY

a. Is your firm free of any court judgments, pending litigation, arbitration and final agency decisions filed within the last five (5) years in a construction related matter in which the contractor, or any officer, is or was a party?

Yes No (attach explanation)

b. Has your firm during the past five (5) years been free of a determination by a court of competent jurisdiction that is filed a false claim with any federal, state or local government entity?

Yes No (attach explanation)

c. Does your firm have the ability to provide the required insurance in the limit stated in the project documents (General Liability and Comprehensive Auto at \$1 Million per occurrence and \$1 Million in the aggregate)?

Yes No (attach explanation)

d. Please provide a letter from an insurance carrier stating that the firm is able to obtain insurance in the limits stated as **Attachment G**.

9. QUALITY ASSURANCE – ATTACHMENT H

a. Does your firm have a written Quality Assurance Program?

Yes No

b. Provide one (1) copy of the written Assurance Program for **Attachment H**

10. PROJECT SCHEDULING

a. Does your firm use computerized scheduling? Yes No

b. If YES, which programs and versions are used? Please list:

c. Has the firm been involved with a construction project within the past five (5) years, where the schedule was not met? Yes No

d. If YES, please indicate the project (refer to **Attachment A**)

i. Project: _____

Reason for Delay: _____

ii. Project: _____

Reason for Delay: _____

iii. Project: _____

Reason for Delay: _____

e. Has the firm been assessed liquidated damages due to scheduling for any project in the past five (5) years? (Refer to **Attachment A**) Yes No

If YES, please list projects

(1) Project: _____ Amount \$ _____

Reason for assessment _____

(2) Project: _____ Amount \$ _____

Reason for assessment _____

(3) Project: _____ Amount \$ _____

Reason for assessment _____

11. LABOR CODE VIOLATIONS

a. Has your firm during the past five (5) years, been free of any determinations by a court or an administrative agency of repeated or willful violations of laws and/or regulations pertaining to the payment of prevailing wages or employment of apprentices of public works projects? Refer to **Attachment I**

Yes No

b. Is the firm free of all Subcontractor Fair Practices Act violations for the past five (5) years?

Yes No (explain)

12. JUDGEMENTS/BREACH OF CONTRACT/ MEDIATIONS AND ARBITRATIONS

Attachment J

- a. List any judgments against the firm during the past 5 years.
Who initiated? What was the outcome?
- b. List any other actions brought against you for breach of contract during the past 5 years,
Who initiated? What was the outcome or current status?
- c. List all mediations/arbitrations in the last 5 years.
Who initiated? What was the outcome?

13. CONTRACTOR COMMENTS/OTHER INFORMATION

- a. Certify and/or documentation that the firm possesses the necessary equipment, financial resources, technical resources, management, professional and craft personnel resources and other required capabilities to successfully perform the contract, or will achieve same through its pre-listed subcontractors. Refer to **Attachment K** (4 PAGE MAXIMUM)

THE UNDERSIGNED CERTIFIES THAT ALL OF THE QUALIFICATION INFORMATION SUBMITTED WITH THIS FORM IS TRUE AND CORRECT.

Name and Title

Firm Name

Signature

Address of Firm

E-mail Address

City/State/Zip

Telephone Number

Fax Number

End of GENERAL CONTRACTOR QUALIFICATIONS QUESTIONNAIRE

**ATTACHMENT A
GENERAL CONTRACTOR'S STATEMENT OF QUALIFICATIONS**

REFERENCE: 3.a. EXPERIENCE
COMPLETE ONE FORM FOR EACH PROJECT LISTED (MAXIMUM 5)

PROJECT DESCRIPTION

Project Type: _____ Contact Name: _____

Project Name: _____ Contact Title: _____

Owner: _____ Contact Phone No.: _____

DESIGN PROFESSIONAL

Name of Firm: _____ Contact Name: _____

Contact Phone No.: _____ Contact Title: _____

Gross Building Area (Sq. Ft.) _____ () New () Addition () Renovation

Project Start Date: _____ Completion Date: _____

Original Contract Amt.: \$ _____ Original No. of Days to Complete: _____

Final Contract Amount
With all Change Orders: \$ _____ Final Contract Days to Complete:
with all Time Extensions: _____

PROJECT EXECUTION

Were Liquidated Damages assessed on this Project? () No () Yes Days _____ \$ _____

Percentage of Work Subcontracted: _____ % Contract Type () Competitive Bid Lump Sum
() Negotiated Lump Sum
Major Subcontractors: () Guaranteed Maximum Price
() Other (Describe)

Mechanical: _____

Electrical: _____

Plumbing: _____

Concrete: _____

CUSTOMER SATISFACTION

How was this measured? () Customer Survey () Attached () Yes () No () Other (Describe)

ATTACHMENT B
GENERAL CONTRACTOR'S STATEMENT OF QUALIFICATIONS

REFERENCE: 4 a., b, c, d
KEY PERSONNEL EXPERIENCE

ATTACH ONE (1) PAGE RESUMES OF THE PROPOSED
PROJECT MANAGER
PROJECT SUPERINTENDENT
SAFETY PROGRAM MANAGER
OTHER KEY PERSONNEL (OPTIONAL)

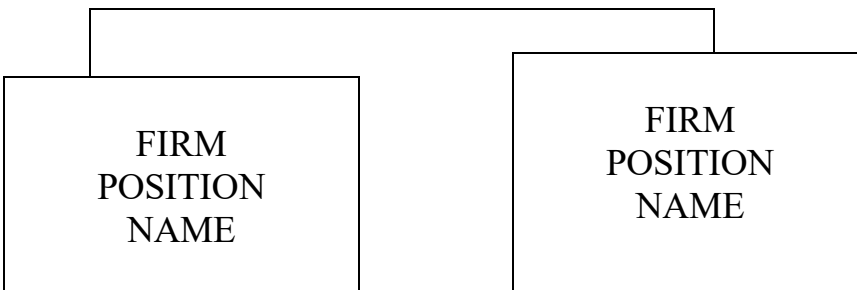
1. EDUCATION
High School, College, Trade Schools, Trade Seminars, Trade/Management Specialized Courses, Etc.
2. RELATED EXPERIENCE
Related experience should include the following:
 - a. Position Title
 - b. Duties and Responsibilities
 - c. Major accomplishments
 - d. Number of personnel supervised
3. PROJECT EXPERIENCE
Identify project experience requested in the Statement at 4.a. (2) (3), 4.b. (2) (3), and 4.c. (2). Include the project Title and Location.
4. Other information that demonstrates the individual's strengths for this project.
5. Project Professionals and Project Owner Reference may be included.

ATTACHMENT C
GENERAL CONTRACTOR'S STATEMENT OF QUALIFICATIONS

REFERENCE: 4.e.
Organizational Chart of Project Management Team

FIRM
POSITION
NAME

Chart should include the entire
Project Team
Subcontractor Key Personnel
And Supervision



1. Indicate the relationship between PM/Supt. of the Subcontractors and the General contractor's PM/SUPT.
2. Indicate the relationship of the Safety Manager of the Subcontractors and General Contractor, and the relationship of the Safety Manager with others on the job site.
3. Indicate the relationship between the QA/QC Manager with other personnel on the job site.

ATTACHMENT E
GENERAL CONTRACTOR'S STATEMENT OF QUALIFICATIONS

REFERENCE: 6.d.
Notarized Declaration of Surety

DOCUMENTATION FROM SURETY

ATTACHMENT F
GENERAL CONTRACTOR'S STATEMENT OF QUALIFICATIONS

REFERENCE: 7.a. SAFETY
Copy of Firm's written Safety Program

SUBMIT ONLY COPIES OF SAFETY PLAN WITH SUBMITTAL PACKET

Include Work Loss Incidents and History

ATTACHMENT G
GENERAL CONTRACTOR'S STATEMENT OF QUALIFICATIONS

REFERENCE: 8.d.
Letter from Insurance Carrier regarding limits of liability

DOCUMENTATION OF INSURABILITY

**ATTACHMENT H
GENERAL CONTRACTOR'S STATEMENT OF QUALIFICATIONS**

REFERENCE: 9.b.
Written Quality Assurance Program

SUBMIT COPIES WITH SUBMITTAL PACKET

**ATTACHMENT I
GENERAL CONTRACTOR'S STATEMENT OF QUALIFICATIONS
REFERENCE: 11.a.
Affidavit of non-violation of Labor Codes**

Name of Firm:

Address:

Project Reference: Brown Early Childhood Center Pre-K and Systems Project

Affidavit of Non-violation of Labor Codes

**To: The Board of Education
 School District**

**The undersigned officer of _____ hereby states that
_____ has, during the past five (5) years, been free
of any determinations by a court or an administrative agency, of repeated or willful violations of
laws and/or regulations pertaining to the payment of prevailing wages or employment of
apprentices of public works projects.**

Name

Title

Signature

NOTARY

State of _____)

County of _____)

Signed or attested before me on _____ by _____

Seal _____

My Commission Expires: _____

ATTACHMENT J
GENERAL CONTRACTOR'S STATEMENT OF QUALIFICATIONS

REFERENCE: 12.a.b.c.
Judgments/Breach of Contract/Mediations/Arbitrations

- a. List any judgments against the firm during the past 5 years
Who initiated? What was the outcome?

- b. List any other actions brought against you for breach of contract during the past 5 years,
Who initiated? What was the outcome or current status?

- c. List all mediations/arbitrations in the last 5 years,
Who initiated? What was the outcome?

**ATTACHMENT K
GENERAL CONTRACTOR'S STATEMENT OF QUALIFICATIONS**

REFERENCE: 13.
Contractor Comments/Other Information

Additional written explanations or comments required for clarification of items contained in the Statement of Qualifications.

ITEM

REF. NO: COMMENTS

PORTALES MUNICIPAL SCHOOLS
BROWN EARLY CHILDHOOD CENTER PRE-K AND SYSTEMS PROJECT
REQUEST FOR PROPOSAL FOR CONSTRUCTION 20-21-0001

*For the convenience of the contractors, an electronic version of this RFP is issued for your use. Any changes to the document's questions or language that differs from the wording as issued in the RFP dated **JANUARY 31, 2021** other than to fill in answers for the questions asked, will constitute a non-responsible proposal.*

STATEMENT OF QUALIFICATIONS FOR SUBCONTRACTORS

Project Name: _____

1. OFFEROR INFORMATION

Firm Name: _____

Type of Firm:

- Corporation Partnership Sole Proprietorship Joint Venture
 Other

- a. Year Firm was established: _____
- b. Parent Company (if applicable) _____
- c. All former names during the past 10 years your organization has operated?

2. LICENSING

Provide your team's New Mexico contractor's license, which is current and in good standing with the State of New Mexico Construction Industries Division (CID).

- a. Name of license holder (or qualifying party) exactly as on file with the State of New Mexico Construction Industries Division:

- b. License Classification: _____ License Code: _____

- c. License Number: _____
- d. Issue Date: _____ Expiration Date: _____
- e. Is the firm's contractor's license free of ever being suspended or revoked by the CID or by the appropriate licensing agency in any other state?
- () Yes, free of suspension/revocation () No IF no, attach explanation

3. EXPERIENCE

- a. Has your firm completed one (1) or more educational facility, addition and/or renovation project of similar complexity and valued at:
- i. Mechanical/Plumbing, Electrical, Roofing: sub-contracts valued at \$500,000 since 2010.
 - ii. All remaining: Experience completing one or more facilities over 25,000 square feet since 2010.
- b. Complete **Attachment A** for three (3) maximum projects listed:
- () Yes Number of Projects: _____ () No

Project 1 Name: _____

Project 2 Name: _____

Project 3 Name: _____

Provide copies of Performance Evaluation Reports prepared in connection with projects described in Para. 3.a above.

- b. State the average annual amount of construction work performed during the past five years:
- \$ _____
- c. Also, on **Attachment A**, list major construction project your organization has in progress, giving the name of the project, owner, architect, contract amount, percent of completion, and scheduled completion date.

4. KEY PERSONNEL EXPERIENCE

Please note that more consideration will be given to those meeting or exceeding the required qualifications below:

- a. Does your assigned Project Manager have the following minimum qualifications and experience? (Attach Resume at **Attachment B**)
- (1) At least ten (10) years experience in the construction industry?

Yes Number of Years: _____ No

5. CAPACITY AND CAPABILITY TO PERFORM THE WORK

a. Resources

- (1) Total number of current employees: Project Managers _____
Estimator's _____
Foremen _____
Tradesmen _____
Administration _____
Other _____

b. Please list all projects currently under contract at square footage listed in 3a. with scheduled completion dates (**Attachment C**)

See Attachment E None

6. SAFETY

a. Does your firm have a written safety program compliant with current State regulations? Provide one (1) copy of your firm's written safety program at **Attachment D**.

Yes No (attach explanation)

b. Provide your Experience Modification Rate for the past five (5) years:

_____ / _____ / _____ / _____ / _____ /

c. Provide the Recordable Incident Rate for the past calendar year: _____

d. Is your firm free of committing serious or willful violations of federal or state safety laws as determined by a final non-appealable decision of a court or government agency?

Yes No (attach explanation)

7. INSURANCE & CLAIMS HISTORY

a. Is your firm free of any court judgments, pending litigation, arbitration and final agency decisions filed within the last five (5) years in a construction related matter in which the contractor, or any officer, is or was a party?

Yes No (attach explanation)

b. Has your firm during the past five (5) years been free of a determination by a court of competent jurisdiction that is filed a false claim with any federal, state or local government entity?

Yes No (attach explanation)

- c. Does your firm have the ability to provide the required insurance in the limit stated in the project documents (General Liability and Comprehensive Auto at \$1 Million per occurrence and \$1 Million in the aggregate)?

Yes () No (attach explanation)

8. QUALITY ASSURANCE

- a. Does your firm have a written Quality Assurance Program? Yes () No

- b. Note: If you have a Quality Assurance Program, please provide one (1) copy of the written Assurance Program for **Attachment E**

9. LABOR CODE VIOLATIONS

- a. Has your firm during the past five (5) years, been free of any determinations by a court or an administrative agency of repeated or willful violations of laws and/or regulations pertaining to the payment of prevailing wages or employment of apprentices of public works projects? Refer to **Attachment F**

Yes No

- c. Is the firm free of all Subcontractor Fair Practices Act violations for the past five (5) years?

Yes () No (explain)

10. JUDGEMENTS/BREACH OF CONTRACT, MEDIATIONS AND ARBITRATIONS

Attachment G

- a. List any judgments against the firm during the past 5 years.

Who initiated? What was the outcome?

- b. List any other actions brought against you for breach of contract during the past 5 years,

Who initiated? What was the outcome or current status?

- c. List all mediations/arbitrations in the last 5 years,

Who initiated? What was the outcome?

11. SUBCONTRACTOR COMMENTS

Please provide further explanation of any of the attachments/items indicated, or other additional information you may want to submit to further clarify any of the information provided in this questionnaire as **Attachment H**

12. OTHER INFORMATION

- a. Certify and/or documentation that the firm possesses the necessary equipment, financial resources, technical resources, management, professional and craft personnel resources and other required capabilities to successfully perform the contract, or will achieve same through its pre-listed subcontractors. Refer to **Attachment I**
- b. Additional information, pictures, diagrams, reports, etc. may be provided as outlined in the Request for Proposal (written qualification limitation of 5 pages will be attached as **Attachment J**)

THE UNDERSIGNED CERTIFIES THAT ALL OF THE QUALIFICATION INFORMATION SUBMITTED WITH THIS FORM IS TRUE AND CORRECT.

Name and Title

Firm Name

Signature

Address of Firm

E-mail Address

City/State/Zip

Telephone Number

Fax Number

End of SUBCONTRACTOR QUALIFICATIONS QUESTIONNAIRE

ATTACHMENT A
SUBCONTRACTOR'S STATEMENT OF QUALIFICATIONS

REFERENCE: 3.a.
Experience in the past 5 years with projects of similar size and scope

COMPLETE ONE FORM FOR EACH PROJECT LISTED ON THE QUESTIONNAIRE (MAXIMUM 3)

PROJECT DESCRIPTION

Project Type: _____ Owner: _____

Project Name and Location: _____

Gross Building Area (Sq. Ft.) _____ () New () Addition () Renovation

Original Contract Amt.: \$ _____ Completion Date/Percentage Complete: _____

DESIGN PROFESSIONAL

Name of Firm: _____ Contact Name: _____

GENERAL CONTRACTOR

Name of Firm: _____ Contact Name: _____

CUSTOMER SATISFACTION

How was this measured? () Customer Survey () Attached () Yes () No () Other (Describe)

ATTACHMENT B
SUBCONTRACTOR'S STATEMENT OF QUALIFICATIONS

REFERENCE: 4 a., b., c., d.
Key Personnel Resumes

ATTACH ONE (1) PAGE RESUMES OF THE PROPOSED

1. PROJECT MANAGER
2. PROJECT FOREMAN/SUPERINTENDENT
3. OTHER KEY PERSONNEL (OPTIONAL)

1. EDUCATION
High School, College, Trade Schools, Trade Seminars, Trade/Management Specialized Courses, Etc.
2. RELATED EXPERIENCE
Related experience should include the following:
 - a. Position Title
 - b. Duties and Responsibilities
 - c. Major accomplishments
 - d. Number of personnel supervised
3. PROJECT EXPERIENCE
Identify project experience requested in the Statement at 4.a. (2) (3), 4.b. (2) (3), and 4.c. (2).
Include the project Title and Location.
4. Other information that demonstrates the individual's strengths for this project.
5. Project Professionals and Project Owner Reference may be included.

ATTACHMENT D
SUBCONTRACTOR'S STATEMENT OF QUALIFICATIONS

REFERENCE: 7.a.
Copy of Firm's written Safety Plan

SUBMIT COPIES OF SAFETY PLAN WITH SUBMITTAL PACKET

Include Work Loss Incidents & History

ATTACHMENT E
SUBCONTRACTOR'S STATEMENT OF QUALIFICATIONS

REFERENCE: 9.b.
Written Quality Assurance Program

SUBMIT COPIES WITH SUBMITTAL PACKET

ATTACHMENT F
SUBCONTRACTOR'S STATEMENT OF QUALIFICATIONS

REFERENCE: 11.b.
Affidavit of non-violation of Labor codes

Name of Firm: _____

Address: _____

Project

Reference: (Name of Owner & Project) Request for Proposal # _____

Affidavit of Non-violation of Labor Codes

To: The Board of Education
 _____ (School District)

The undersigned officer of _____ hereby states that _____ has, during the past five (5) years, been free of any determinations by a court or an administrative agency, of repeated or willful violations of laws and/or regulations pertaining to the payment of prevailing wages or employment of apprentices of public works projects.

Name

Title

Signature

NOTARY

State of _____)

County of _____)

Signed or attested before me on _____ by _____

Seal _____

My Commission Expires: _____

ATTACHMENT G
SUBCONTRACTOR'S STATEMENT OF QUALIFICATIONS

REFERENCE: 10. a. and b.
Judgments/Breach of Contract, Mediation and Arbitrations

- a. List any judgments against the firm during the past 5 years
Who initiated? What was the outcome?

- b. List any other actions brought against you for breach of contract during the past 5 years,
Who initiated? What was the outcome or current status?

- c. List all mediations/arbitrations in the last 5 years,
Who initiated? What was the outcome?

ATTACHMENT H
SUBCONTRACTOR'S STATEMENT OF QUALIFICATIONS

REFERENCE: 11.
Subcontractor comments

Additional written explanations or comments required for clarification of items contained in the Statement of Qualifications.

<u>ITEM REF.</u> <u>NUMBER</u>	<u>COMMENTS</u>
-----------------------------------	-----------------

ATTACHMENT I
SUBCONTRACTOR'S STATEMENT OF QUALIFICATIONS

REFERENCE: Other Information 15.a.

Certify and/or documentation that the firm possesses the necessary equipment, financial resources, technical resources, management, professional and craft personnel resources and other required capabilities to successfully perform the contract, or will achieve same through its pre-listed subcontractors.

ATTACHMENT J
SUBCONTRACTOR'S STATEMENT OF QUALIFICATIONS

REFERENCE: 15.b.
Additional Information

Additional written qualifications (optional) are limited to a maximum of 5 pages of text/photos, single sided, diagrams, reports, etc. may be provided to support your Team. Material should be limited to 8-1/2" x 11" format.

INSTRUCTIONS TO BIDDERS

Section 00 2113

1.0 DEFINITIONS AND TERMS

1.1 Terms used in these Bidding Documents which are defined in the Instructions to Bidders and in the Conditions of the Contract for Construction (General, Supplementary, and Other Conditions) have the meanings assigned to them in those documents.

- A. ADDENDUM:** A written or graphic instrument issued prior to the opening of Bids which clarifies, corrects, or changes the Bidding Documents or Contract Documents. Plural: addenda.
- B. ALTERNATE BID:** If requested by the Bidding Documents, the Amount to be added to the Base Bid if the corresponding change in the project scope, materials, and/or methods of construction is awarded by the Owner.
- C. BASE BID:** Amount stated in the Bid as the sum for which the Bidder offers to perform the work, excluding alternate Bids.
- D. BID:** The offer of the bidder submitted on the prescribed form setting forth the prices for the work to be performed in conformance with the Bidding Documents.
- E. BID LOT:** A major item of work for which a separate quotation or proposal is requested.
- F. BIDDER:** One who submits a Bid directly to the Owner, as distinct from a subcontractor who submits a bid to a contractor.
- G. BIDDING DOCUMENTS:** The Bidding Requirements and the Contract Documents.
- H. BID FORM:** A form which includes a specific space in which the bid price shall be inserted and which the Bidder shall sign and submit along with all other necessary submissions. A Bidder may submit a reasonable facsimile of the Bid Form. - Bids received by facsimile or in electronic format will not be accepted.
- I. BIDDING REQUIREMENTS:** Notice of Invitation to Bid, Prebid Information, Instructions to Bidders, Information Available for Bidders, the Bid Form, Supplements to the Bid Form, and portions of Addenda relating to any of these.
- J. DAY:** Day shall mean calendar day unless defined otherwise.
- K. INVITATION FOR BID:** All documents including those attached or incorporated by reference or utilized for soliciting sealed bids.
- L. RESPONSIBLE BIDDER:** A Bidder who is properly licensed in accordance with the Construction Industries Licensing Act and submits a Responsive Bid and who has furnished, when required, information and data to prove that his financial resources, production or service facilities, personnel, service reputation, and experience are adequate to make satisfactory delivery of the services, construction, or items of tangible personal property described in the Invitation for Bid.
- M. RESPONSIVE BID:** A bid which conforms in all material respects to the requirements set forth in the Invitation for Bid.
- N. SUCCESSFUL BIDDER:** The lowest Responsible Bidder to whom the Owner, on the basis of the Owner's evaluation, makes an award. A Successful Bidder does not become the contractor until an agreement with the Owner is signed.

2.0 EXAMINATION OF BIDDING DOCUMENTS AND SITE

2.1 Before submitting a Bid, each Bidder must, in accordance with the General Conditions with special attention to Article's 1 and 3.:

- A.** Examine the Bidding Documents thoroughly;
- B.** Visit the site to familiarize himself with local conditions that may in any manner affects cost, progress, or performance;
- C.** Familiarize himself with Federal, State, and local laws, ordinances, rules, and regulations that may in any manner affect cost, progress, or performance of the Work; and
- D.** Study and carefully correlate the Bidder's observations with the Bidding Documents.

2.2 On request, the Owner will provide each Bidder access to the site to conduct such investigations and tests as each Bidder deems necessary for submission of his Bid.

2.3 The lands upon which the Work is to be performed, rights-of-way for access thereto, and other lands designated for use by the Contractor in performing the work are identified in the Bidding Documents.

2.4 The submission of a Bid will constitute an incontrovertible representation by the Bidder that he has complied with every requirement of this Section and that the Bidding Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the Work.

3.0 BIDDING DOCUMENTS

3.1 COPIES OF BIDDING DOCUMENTS

3.1.1 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the Invitation may be obtained from the Design Professional (unless another issuing office is designated in the Invitation for Bid). The deposit will be refunded to Bidders who submit a bona-fide bid and return the bidding Documents in good and complete condition within fifteen (15) calendar days after opening of Bids.

3.1.2 Complete sets of Bidding Documents shall be used in preparing bids; neither the Owner nor the Design Professional assumes responsibility for errors or misinterpretations resulting from the use of incomplete or partial Bidding Documents.

3.1.3 The Owner and Design Professional, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

3.2 INTERPRETATIONS

3.2.1 All questions about the meaning or intent of the Bidding Documents shall be submitted to the Design Professional in writing. Replies will be issued by Addenda and mailed or delivered to all parties recorded by the Design Professional as having received the Bidding Documents. **Questions received less than seven (7) days prior to the date for opening of Bids will not be formally answered.** Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

3.2.2 Bidders and Subcontractors shall promptly notify the Design Professional of any ambiguity, inconsistency, or error which they may discover upon examination of the Bidding Documents or of the site and local conditions.

3.3 SUBSTITUTE MATERIAL AND EQUIPMENT

The contract, if awarded, will be on the basis of material and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "**or-equal**" item of material or equipment may be furnished or used by the contractor if acceptable to the Design Professional, application for such acceptance will not be considered by the Design Professional unless submitted to the Design Professional with a detailed itemized comparison of the proposed substitution against the specified product at least **ten (10) days prior to the date for opening Bids**. Any product with a 5 (five) year or greater extended warranty must be submitted no less than **forty-five (45) days prior to the opening of Bids, along with the same itemized comparison, to be considered by the Design Professional**. Any allowance of substitutions will be published to all prospective Bidders via addendum. The procedure for submittal of any such application by the Contractor and consideration by the Design Professional is set forth in the Contract Documents.

3.4 ADDENDA

3.4.1 Addenda will be mailed or delivered to all who are known by the Design Professional to have received a complete set of Bidding Documents.

3.4.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

3.4.3 Addenda will be issued no later than four (4) days prior to the date for receipt of Bids, except an addendum withdrawing the request for bids or one which includes postponement of the date for receipt of Bids.

4.0 BIDDING PROCEDURES

4.1 FORM AND STYLE OF BIDS

4.1.1 Bids shall be submitted on forms identical to the form included with the Bidding Documents.

4.1.2 All blanks on the Bid Form shall be filled in by typewriter or manually in ink.

4.1.3 Where so indicated by the makeup of the Bid Form, sums shall be expressed in both words and figures, and, in case of discrepancy between the two, the amount written in words shall govern.

4.1.4 Any interlineation, alteration, or erasure must be initialed by the signer of the bid.

4.1.5 All requested Additive Alternate Bids shall be bid. If no change in the Base Bid is required, enter "No Change." Deductive Alternates shall not be used.

4.1.6 Where there are two or more major items of work (identified as "Bid Lots") for which separate quotations are requested, the Bidder may, at his discretion, submit quotations for any or all items, unless otherwise specified. Additionally, the Bidder may submit a lump sum price for all lots for which the Bidder has submitted separate quotations.

4.1.7 Each copy of the bid shall include the complete name of the Bidder and a statement that the Bidder is a sole proprietor, a partnership, a corporation, or some other legal entity. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the State of incorporation and have the applicable New Mexico Certificate of Incorporation number or Certificate of Authority number. The Bid shall include the current contractor's license number and type, Department of Workforce Solutions Minimum Wage Act registration number (DWS#), and the current Contractor's preference number. A bid submitted by an agent shall have a current Power of Attorney attached certifying the agent's authority to bind the Bidder.

4.1.8 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which shall be filled in on the Bid Form).

4.1.9 The address to which communications regarding the Bid are to be directed must be shown.

4.1.10 The Project Name and Number, as well as the Invitation to Bid Number, shall be clearly shown on the outside of the envelope in which the sealed Bid is submitted.

4.2 BID SECURITY

4.2.1 Bid security in an amount equal to at least five percent (5%) of the amount of the Bid shall be a bond provided by a surety company authorized to do business in this State, or the equivalent in cash, a cashier's check, or otherwise supplied in a form satisfactory to the Owner (Section 13-1-146, NMSA 1978) and approved in writing by the Owner in advance. All General Contractor, or Primary Contractor, or Construction Manager at Risk Bonds shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies," as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, United States Treasury Department.

4.2.2 The bid security shall be in the amount of five percent (5%) of the highest Bid amount submitted, unless otherwise stipulated, pledging that the Bidder will enter into a Contract with the Owner on the terms stated herein and will furnish bonds covering the faithful performance of the Contract and payment of all obligations arising there under. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty.

4.2.3 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until:

- A. the Contract has been executed and bonds have been furnished,
- B. the specified time has elapsed so that Bids may be withdrawn, or
- C. all Bids have been rejected.

4.2.4 When the Bidding Documents require bid security, noncompliance by the Bidder requires that the Bid be rejected (13-1-147A, NMSA 1978).

4.2.5 If a Bidder is permitted to withdraw his Bid before award, no action shall take place against the Bidder or the bid security (13-1-147B, NMSA 1978).

4.2.6 The Owner may reduce bid security requirements authorized by the Procurement Code (13-1-28 to 13-1-199, NMSA 1978) to encourage procurement from small businesses. Reduction, if any, and the manner thereof will be stipulated in Paragraph 7. Reduction of the amount of bid security, if any, shall in no way reduce requirements for Performance, Payment, or other Bonds referenced in the Bidding Documents.

4.3 PREBID CONFERENCE

4.3.1 The Design Professional of Record shall conduct a **Prebid Conference** approximately **fifteen (15), but not less than ten (10) days prior to the bid opening** date stated in the Invitation to Bid.

4.3.2 The Design Professional of Record and his consultants, as applicable, shall be represented. Prospective Bidders, Prospective Subcontractors, and Prospective Vendors are encouraged to attend and should be prepared to ask questions regarding substitutions and to request clarification of the Bidding Documents. The failure of a Bidder, Subcontractor, or Vendor to attend shall be interpreted to mean that the Bidding Documents are clear and acceptable to all non-participants at the Prebid Conference. Such clarity and acceptability shall be presumed with respect to all Bidders.

4.3.3 Questions and requests for clarification presented in written form will receive written response, and if warranted, issued as Addenda. No verbal response shall be binding.

4.4 RESIDENT OR VETERAN CONTRACTOR'S PREFERENCE

4.4.1 When Bids are received from nonresident contractors and resident or veteran contractors and the lowest responsible Bid is from a nonresident contractor, the contract shall be awarded to the resident or veteran contractor whose Bid is nearest to the bid price of the otherwise low nonresident contractor if the Bid price of the resident or veteran contractor is made lower than the Bid price of

the nonresident contractor when multiplied by the appropriate factor as established by the NM Taxation and Revenue Department.

4.4.2 No contractor shall be treated as a resident or veteran contractor in the awarding of public works contracts by the Owner unless the contractor has qualified with the NM Taxation & Revenue Department as a resident or veteran contractor pursuant to this section by making application to the NM Taxation & Revenue Department and receiving a certification number. Previous certification as a resident or veteran contractor by the NM General Services Department is valid until January 1, 2012. For convenience, and without warranty that the process is current, the procedure for application and certification is as follows:

A. The contractor seeking to qualify as a resident or veteran contractor shall complete the application form and submit it to the NM Taxation & Revenue Department) prior to the submission of a Bid on which the contractor desires to be given a preference (see Pages 00000-2 thru 00000-6);

B. The NM Taxation & Revenue Department shall examine the application and, if necessary, may seek additional information or proof so as to be assured that the Prospective Contractor is indeed entitled to certification as a resident or veteran contractor pursuant to Section 13-1-22, NMSA 1978. If the application is in proper form, the NM Taxation & Revenue Department shall issue the contractor a distinctive certification number, which is valid for three years from the date of issuance and which, when used on Bids and other purchasing documents for State agencies or local public bodies, entitles the contractor to treatment as a resident or veteran contractor under Subparagraph 4.4.1 of this section; and

C. The certification number issued pursuant to Subparagraph B of this section may be revoked by the NM Taxation & Revenue Department by making a determination that the contractor no longer meets the requirements of a resident or veteran contractor as defined in Section 13-1-22, NMSA 1978.

4.5 SUBCONTRACTORS

4.5.1 The bidder shall list the Subcontractors he proposes to use for all trades or items on the Subcontractor Listing Form attached to the Bidding Documents. This requirement does not apply to second tier subcontractors, material suppliers, or subcontractors whose contract is for an amount no greater than the listing threshold described by Subsection A of 13-4-34 below. Requirements for Subcontractors pursuant to Chapter 18, Laws of 1988, 2nd Session; are as follows:

AN ACT

RELATING TO CONSTRUCTION INDUSTRIES; ENACTING THE SUBCONTRACTOR FAIR PRACTICES ACT.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF NEW MEXICO:

13-4-31 SHORT TITLE

Section 1 through 12 of this act may be cited as the "Subcontractors Fair Practices Act".

13-4-32 LEGISLATIVE FINDINGS

The legislature finds that the practices of bid shopping and bid peddling in connection with the construction, alteration and repair of public works projects often result in poor quality of material and workmanship to the detriment of the public, deprive the public of the full benefits of fair competition among contractors and subcontractors and lead to insolvencies and loss of wages to employees.

13-4-33 DEFINITIONS

As used in the Subcontractors Fair Practices Act:

- A. "contractor" means the prime contractor on a public works construction project who contracts directly with the using agency;
 - B. "subcontractor" means a contractor who contracts directly with the contractor;
 - C. "listing threshold" means the dollar amount, stipulated in the bidding documents, above which subcontractors must be listed;
 - D. "notice" means information, advice or a written warning intended to apprise a contractor, subcontractor or using agency of some proceeding in which the contractor's, subcontractor's or using agency's interests are involved or to inform him of some fact that is his right to know. Notice may be sent to a contractor, subcontractor or using agency by certified or registered mail and shall be deemed to be completed upon date of mailing; and
 - E. "using agency" means any state agency or local public body requiring services or construction.
- (F.) (added for clarity from 13-4-13.1)** "listed subcontractor" means a subcontractor who is currently registered with the labor and industrial commission.

13-4-34 LISTING OF SUBCONTRACTORS; REQUIREMENTS

- A. Any using agency taking bids for any public works construction project shall provide in the bidding documents prepared for that project a listing threshold which shall be five thousand dollars (\$5,000) or one-half of one percent of the architect's or engineer's estimate of the total project cost, not including alternates, whichever is greater. If the bidding documents do not include a listing threshold, then the using agency shall supply the listing threshold. If the listing threshold has not been included, the bid opening shall be postponed until the using agency has complied with this section. Any contractor or subcontractor interested in bidding may apply to the district court in the county in which the project will be located for an injunction preventing the bid opening until the using agency has complied with this section. Any person submitting a bid shall in his bid set forth:
 - (1) the name and the city or county of the place of business of each subcontractor under subcontract to the contractor who will perform work or labor or render service to the contractor in or about the construction of the public works construction project in an amount in excess of the listing threshold; and
 - (2) the category of the work that will be done by each subcontractor. The contractor shall list only one subcontractor for each category as defined by the contractor in his bid.
- B. A bid submitted by a contractor who fails to comply with the provisions of Subsection A of this section is a non-responsive bid which shall not be accepted by a using agency.

13-4-35 EXEMPTION

With the exclusion of that portion of work covering street lighting and traffic signals, the Subcontractors Fair Practices Act shall not apply to contracts for the construction, improvement or repair of streets or highways, including bridges, underground utilities within easements including but not limited to water lines, sewer lines and storm sewer lines.

13-4-35.1 APPLICATION OF ACT

The Subcontractors Fair Practices Act shall not apply to any transaction occurring after the contractor and the listed subcontractor have executed a subcontract unless subsequent action on the subcontract relates to subcontractor listing requirements.

13-4-36 SUBSTITUTION OF SUBCONTRACTOR

- A. No contractor whose bid is accepted shall substitute any person as subcontractor in place of the subcontractor listed in the original bid, except that the using agency shall consent to the substitution of another person as a subcontractor:
 - (1) when the subcontractor listed in the bid, after having had a reasonable opportunity to do so, fails or refuses to execute a written contract, when such written contract, based upon the general

terms, conditions, plans and specifications for the project involved and the terms of such subcontractor's written bid, is presented to him by the contractor;

- (2) when the subcontractor listed in the original bid becomes bankrupt or insolvent prior to execution of a subcontract;
- (3) when the using agency refuses to approve the subcontractor listed in the original bid, provided such approval has been reserved in the bidding documents;
- (4) when the subcontractor listed in the original bid fails or refuses to perform his subcontract;
- (5) when the contractor demonstrates to the using agency or its duly authorized officer that the name of the subcontractor was listed as the result of an inadvertent clerical error;
- (6) when a bid alternate accepted by the using agency causes the listed subcontractor's bid not to be low;
- (7) when the contractor can substantiate to the using agency that a listed subcontractor's bid is incomplete;
- (8) when the listed subcontractor fails or refuses to meet the bond requirements of the contractor; and,
- (9) when it is determined that the listed subcontractor does not have a proper license to perform the work and the contractor has submitted the name of the subcontractor along with proof that the subcontractor bid work for which he was not licensed by the Construction Industries Division of the Regulation and Licensing Department.
- (10) when it determined by the using agency, the prime contractor or the director of the labor and industrial division of the labor department that a listed subcontractor is not a registered subcontractor on the date bids are unconditionally accepted for consideration.

B. Prior to approval of the contractor's request for substitution of a subcontractor, the using agency shall give notice in writing to the listed subcontractor of the contractor's request to substitute and of the reasons for the request. The notice shall be served by certified or registered mail to the last known address of the subcontractor. The listed subcontractor who has been so notified has five (5) working days within which to submit written objections to the substitution to the using agency. Failure to file written objections shall constitute the listed subcontractor's consent to the substitution. If written objections are filed, the using agency shall give at least five (5) working days' notice in writing to the listed subcontractor of a hearing by the using agency on the contractor's request for substitution.

C. No contractor whose bid is accepted shall permit any subcontract to be voluntarily assigned or transferred or allow it to be performed by anyone other than the original subcontractor listed in the original bid without the consent of the using agency.

D. No contractor whose bid is accepted, other than in the performance of change orders causing changes or deviations from the original contract, shall sublet or subcontract any portion of the work in excess of the listing threshold as to which his original bid did not designate a subcontractor unless:

- (1) the contractor fails to receive a bid for a category of work. Under such circumstances, the contractor may subcontract. The contractor shall designate on the listing form that no bid was received; or
- (2) the contractor fails to receive more than one bid for a category of work. Under such circumstances, the contractor may subcontract. The contractor shall state on the listing form that only one subcontractor's bid was received, together with the name of the subcontractor. This designation shall not occur more than one time on the subcontractor list.

13-4-37 BOND REQUIREMENTS (This requirement to be modified by Invitation to Bid – Section 00 1116- Page 3

A. It is the responsibility of each subcontractor submitting a bid to a contractor to be prepared to submit a faithful performance and payment bond if so requested by the contractor.

B. In the event any subcontractor submitting a bid to a contractor does not, upon the request of the contractor and at the expense of the contractor at the established charge or premium therefore,

furnish to the contractor a bond issued by a corporate surety authorized to do business in New Mexico in accordance with the New Mexico Insurance Code (59A-1-1 to 59A-1-18, NMSA 1978) and listed in the United States treasury department circular 570 wherein the contractor is named the obligee, guaranteeing prompt and faithful performance of the subcontract and the payment of all claims for labor and materials furnished or used in and about the work to be done and performed under the subcontract, the contractor may reject the bid and make a substitution of another subcontractor subject to the provisions of Section 13-4-36, NMSA 1978. Such bond may be required at the expense of the subcontractor only if the contractor in his written or published request for subcontract bids:

- (1) specifies that the expense for the bond shall be borne by the subcontractor; and
- (2) clearly specifies the amount and requirements of the bond.

13-4-38. FAILURE TO SPECIFY SUBCONTRACTOR

If a contractor fails to list a subcontractor in excess of the listing threshold and he does not state that no bid was received or that only one bid was received, he represents that he is fully qualified to perform that portion of the work himself and that he shall perform that portion of the work himself. If after the award of the contract the contractor subcontracts any portion of the work, except as provided in the Subcontractors Fair Practices Act, the contractor shall be guilty of violation of the Subcontractors Fair Practices Act and subject to the penalties provided in Section 13-4-41 NMSA 1978.

13-4-39. INADVERTENT CLERICAL ERROR

- A.** The contractor, as a condition to assert a claim of inadvertent clerical error in the listing of a subcontractor, shall within four working days after the time of the prime bid opening by the using agency, give written notice to the using agency and to both the subcontractor he claims to have listed in error and the subcontractor who had bid to the contractor prior to bid opening.
- B.** Any listed subcontractor who has been notified by the contractor in accordance with the provisions of this section as to an inadvertent clerical error shall be allowed twelve working days from the time of the prime bid opening within which to submit to the using agency and to the contractor written objection to the contractor's claim of inadvertent clerical error. Failure of the listed subcontractor to file written notice within the twelve working days shall be primary evidence of his agreement that an inadvertent clerical error was made.
- C.** The using agency shall, in the absence of an objection to the contrary by the listed subcontractor in the original bid, consent to the substitution of the intended subcontractor if:
 - (1) the contractor, the listed subcontractor listed in error and the intended subcontractor each submit an affidavit to the using agency, along with such additional evidence as the parties may wish to submit, that an inadvertent clerical error was in fact made, provided that the affidavits from each of the three parties are filed within twelve working days from the time of the prime bid opening; or
 - (2) affidavits are filed by both the contractor and the intended subcontractor within the specified time but the subcontractor whom the contractor claims to have listed in error does not submit, within twelve working days from the time of prime bid opening, to the using agency and to the contractor written objection to the contractor's claim of inadvertent clerical error as provided in this section.
- D.** If affidavits are filed by both the contractor and the intended subcontractor but the listed subcontractor has, within twelve working days from the time of the prime bid opening, submitted to the using agency and to the contractor written objection to the contractor's claim of inadvertent clerical error, the using agency shall investigate the claims of the parties and hold a hearing to determine the validity of the claims, within thirty days after the receipt of the contractor's written objection. Any determination made shall be based on facts contained in the affidavits submitted by all three parties and supported by testimony under oath and subject to cross-examination. The using agency may, on its motion or that of any other party, admit testimony of other contractors, any bid

registries or depositories or any other party in possession of facts that may have a bearing on the decision of the using agency.

13-4-40. EMERGENCY SUBCONTRACTING

Subcontracting any portion of the work in excess of the listing threshold as to which no subcontractor was designated in the original bid shall be permitted only in the case of public emergency or necessity and then only upon a written finding by the using agency setting forth the facts constituting the emergency or necessity.

13-4-41. PENALTIES

A. When a contractor violates any provision of the Subcontractors Fair Practices Act except Section 13-4-34 NMSA 1978, the using agency shall:

(1) in the case of a contractor who substitutes another subcontractor in violation of Section 13-4-36 NMSA 1978, for the subcontractor originally included in the bid, assess the contractor a penalty in an amount equal to the greater of ten percent of the amount bid by the listed subcontractor or the difference between the amount bid by the listed subcontractor and the amount bid by the substituted subcontractor;

(2) in the case of a contractor substituting a listed subcontractor for another subcontractor, and the substituted subcontractor knowingly participated in a violation of Section 13-4-36 NMSA 1978, assess the substituted subcontractor a penalty in an amount equal to the greater of ten percent of the amount bid by the listed subcontractor and the difference between the amount bid by the listed subcontractor and the substituted subcontractor; or

(3) in the case of a contractor who fails to list a subcontractor in excess of the listing threshold as defined in Section 13-4-38 NMSA 1978, assess the contractor a penalty of eight percent of the amount of the subcontract issued for the first violation and thirty percent of the amount of the subcontract issued for any violation thereafter, on any one project.

B. Penalties assessed pursuant to the provisions of this section shall be deposited into the fund from which the contract was awarded.

C. In a proceeding under this section, the contractor shall be entitled to a hearing after notice.

D. A violation of the provisions of the Subcontractors Fair Practices Act constitutes grounds for disciplinary action against a contractor or a subcontractor, pursuant to regulations of the construction industries division of the regulation and licensing department.

E. A contractor or a subcontractor who attempts to circumvent the provisions of the Subcontractors Fair Practices Act shall be subject to the penalties established pursuant to this section.

F. Any listed subcontractor removed in violation of the Subcontractors Fair Practices Act may bring an action in the district court for damages, injunctive or other relief.

13-4-42. COVERAGE OF HOME RULE MUNICIPALITIES

Any home rule municipality or H class county chartered under the provisions of Article 10, Section 6 of the constitution of New Mexico is expressly denied authority to legislate regulation of the subject matter covered in the Subcontractors Fair Practices Act that conflicts with the provisions of that act.

13-4-43. DISPUTE RESOLUTION

Once the using agency has determined the existence of a valid claim under the provisions of the Subcontractors Fair Practices Act, the using agency or agent of the using agency may:

A. hold a public hearing for the purpose of providing an informal resolution of the dispute by preparing a "form of dispute" which shall be available to all parties. The form shall state concisely, in numbered paragraphs, the matter at issue or dispute which the complainant expects to be determined. The agent or the using agency shall evaluate the issues presented by both sides of the dispute and render a decision within ten days after the hearing, and provide the parties with a written copy of the decision by certified mail, return receipt requested; or

B. refer the matter in dispute to be resolved through arbitration.

4.5.2 The Bidder shall not list himself as the supplier or as the Subcontractor for any trade unless he has previously performed work of this type or can prove to the Design Professional and the Owner's satisfaction that he actually has, or will obtain, fully adequate ability to perform the work with his own forces.

4.5.3 Omission or non-compliance with the intent of the Subcontractor Listing (Section 00430) will be grounds for considering a bid as non-responsive.

4.5.4 Prior to the award of the Contract, the Design Professional will notify the Bidder in writing if either the Owner or the Design Professional, after due investigation and written findings of fact, has reasonable and substantial objection to any person or organization on such list. If the Owner or Design Professional has reasonable and substantial objection to any person or organization on such list and refuses in writing to accept such person or organization, the Bidder may, at his option:

- A.** withdraw his Bid, or,
- B.** submit an acceptable substitute Subcontractor.

In the event of withdrawal under this paragraph, bid security will not be forfeited.

4.5.5 The Successful Bidder shall, within ten (10) days of Notice of Award of the Contract for the Work, submit to the Design Professional all of the requirements of Subparagraph 6.1.

4.5.6 The Successful Bidder will be required to establish to the satisfaction of the Design Professional and the Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the work described in the Bidding Documents.

4.5.7 Persons and organizations proposed by the Bidder and to whom the Owner and the Design Professional have made no reasonable objection under the provisions of Paragraph 4.5.6 must be used on the work for which they were proposed and shall not be changed except with the written consent of the Owner and the Design Professional. In an effort to gain consent, provide, if possible, a written request from the person or organization wishing to be replaced by the Bidder explaining the need for the replacement.

4.5.8 No Successful Bidder shall be required to employ any Subcontractor, other person, or organization against whom he has reasonable objection.

4.6 SUBMISSION OF BIDS

4.6.1 Bid, bid security, Subcontractors Listing Form, and other required documents listed in the Bidding Documents shall be submitted in an opaque sealed envelope marked in accordance with Subparagraph 4.6.2 below.

4.6.2 The Bid envelope shall be addressed as required by Section 00_2114 – Instructions to Bidders – Part B.

4.6.3 Bids received after the date and time for receipt of bids will be returned unopened.

4.6.4 The Bidder shall assume full responsibility for timely delivery of bids to the Owner, including those Bids submitted by mail or otherwise. Bids hand delivered to the Bid Opening Address shall be received beginning one hour prior to the bid. Bids will be clocked in at the time received, which must be prior to the time specified. Bids will then be held for public opening.

4.6.5 Oral, telephonic, or telegraphic bids are invalid and will not receive consideration.

4.7 CORRECTION OR WITHDRAWAL OF BIDS

4.7.1 A bid containing a mistake discovered before Bid Opening may be withdrawn by a bidder prior to the time set for Bid Opening by delivering verbal, written or telegraphic notice to the location designated in the Invitation for Bid as the place where bids are to be received.

4.7.2 Bid security, if required, shall be in an amount sufficient for the bid in conformance with Section 4.2.

4.7.3 Withdrawn Bids may be resubmitted up to the time and date designated for the receipt of Bids, provided they are then fully in conformance with the Bidding Documents.

4.7.4 After Bid Opening time, no modifications in bid prices or other provisions of bids shall be permitted.

4.7.5 After Bid Opening, a low Bidder alleging a material mistake of fact which makes his Bid non-responsive may be permitted to withdraw his Bid if the:

A. mistake is clearly evident on the face of the Bid Document; or

B. Bidder submits evidence which clearly and convincingly demonstrates that a mistake was made.

Any decision by the Owner to permit or deny the withdrawal of a Bid on the basis of a mistake contained therein shall be supported by a written determination setting forth the grounds for the decision. If withdrawal is permitted, bid security will not be forfeited.

4.8 NOTICE OF CONTRACT REQUIREMENTS BINDING ON BIDDER

4.8.1 In submitting this bid, the Bidder represents that he has familiarized himself with the nature and extent of the following requirements and of the Conditions of the Construction Contract (General, Supplementary, Project and Other Conditions):

4.9 REJECTION OR CANCELLATION OF BIDS

An Invitation for Bid may be canceled, or any or all Bids may be rejected in whole or in part, when it is in the best interest of the Owner. A determination containing the reasons therefore shall be made part of the Project file. Bid security for rejected Bids shall be returned to the Bidder.

4.10 CONSIDERATION OF BIDS

4.10.1 RECEIPT, OPENING, AND RECORDING

Bids received on time will be opened publicly and will be read aloud, and an abstract of the amounts of the Base Bids and Alternates or bid items, if any, will be made available to the Bidders. Each Bid shall be open to public inspection (13-1-107, NMSA 1978).

4.10.2 BID EVALUATION AND AWARD

4.10.2.1 The Owner shall have the right to waive technical irregularities in the form of the Bid of the low Bidder which do not alter the price, quality, or quantity of the services, construction, or items of tangible personal property bid (13-1-132, NMSA 1978).

4.10.2.2 It is the intent of the Owner to award a contract to the lowest responsible bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. The unreasonable failure of a Bidder to promptly supply information in connection with an inquiry with respect to responsibility is grounds for a determination that the Bidder is not a responsible Bidder (13-1-133, NMSA 1978). See Section 6 as to Post-Bid Information that may be required of a Contractor as to qualifications.

4.10.2.3 If the Base Bid is within the amount of funds available to finance the construction, contract award will be made to the responsible Bidder submitting the low Base Bid; except that, if sufficient funds are available to fund alternates, the Owner may award the contract to the responsible Bidder submitting the low combined Bid within the amount of funds available (Base Bid plus or minus alternates. If

the award is based on alternates, the Owner shall accept them in the order in which they are listed on the Bid Form.

4.10.2.4 Discrepancies in the Bid Form between words and figures will be resolved in favor of words. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

4.10.2.5 Conditional Bids or Bids with additional terms will not be accepted.

4.11 NOTICE OF AWARD

A written Notice of Award shall be issued by the Owner after review and approval of the bid and related documents by the Owner with reasonable promptness (13-1-100 and 13-1-108, NMSA 1978).

4.12 CANCELLATION OF AWARD

When in the best interest of the public, the Owner may cancel the award of any contract at any time before the execution of said contract by all parties without any liability against the Owner.

5.0 PROTESTS

5.1 Any bidder, offerer, or contractor who is aggrieved in connection with this procurement (Bid) may protest to the Owner's Central Purchasing Agent and the Owner in accordance with the requirements of General Services Department Rule 93-601. The protest should be made in writing within twenty-four (24) hours after the facts or occurrences giving rise thereto, but in no case later than fifteen (15) calendar days after the facts or occurrences giving rise thereto (13-1-172, NMSA 1978).

5.2 In the event of a timely protest under Subparagraph 4.10.1 (13-1-172, NMSA 1978 of the Procurement Code), the Owner's Central Purchasing Agent and the Owner shall not proceed further with the procurement unless the Owner's Purchasing Agent or the Owner makes a determination that the award of contract is necessary to protect substantial interests of the Owner (13-1-173, NMSA 1978).

5.3 The Owner's Central Purchasing Agent or his designee shall have the authority to take any action reasonably necessary to resolve a protest of an aggrieved bidder, offerer, or contractor concerning a procurement.

5.4 The Owner's Central Purchasing Agent or his designee shall promptly issue a determination relating to the protest. The determination shall:

- A.** state the reasons for the action taken; and
- B.** inform the protestant of the right to judicial review of the determination pursuant to Section 13-1-183, NMSA 1978 of the Procurement Code (13-1-175, NMSA 1978).

5.5 A copy of the determination issued under Section 13-1-175, NMSA 1978 of the Procurement Code shall immediately be mailed to the protestant and other bidders or offerers involved in the procurement (13-1-176, NMSA 1978).

6.0 POST-BID INFORMATION

6.1 SUBMITTALS TO DESIGN PROFESSIONAL

Within ten (10) days of Notice of Award and prior to construction, the following shall be submitted to the Design Professional:

- A.** the Contractor required bonds and Certificates of Insurance;

- B.** for the Owner's consideration for approval, a resume and Statement of Qualification of proposed Superintendent(s) and assistants until acceptable individuals are selected in accordance with Subparagraph 3.9.2 of the General Conditions to the Construction Contract;
- C.** signed Subcontractors List including contract amount of each, evidence of required bonds, costs of each bond, and beneficiary of each bond; evidence of DOL registration, evidence of CID licensure;
- D.** Assignment of Antitrust Claims (required for the Contractor, all Subcontractors, and all Suppliers);
- E.** Certificate of Insurance;
- F.** State W-9;
- G.** evidence of other bonds or documents as specified in the Bidding Documents; and
- H.** Schedule of Values and required supporting data in accordance with Paragraph 9.2 of the General Conditions to the Construction Contract.

6.2 RETURN OF BID SECURITY

All Bid Security in the form of checks, except those of the two lowest Bidders, will be returned immediately following the opening and checking of the Bids. The retained bid security of the unsuccessful of the two lowest bidders, if in the form of a check, will be returned within fifteen (15) days following the award of contract. The retained bid security of the Successful Bidder, if in the form of a check, will be returned after a satisfactory contract bond has been furnished and the Contract has been executed. Bid Securities in the form of Bid Bonds will be returned only upon the request of the unsuccessful Bidder, but will be released by the Purchasing Agent for the District after the Notice of Award is sent by the Owner.

6.3 EXECUTION AND APPROVAL OF CONTRACT

The Contract shall be signed by the Successful Bidder and returned, together with both the Contract Bonds and Certificate of Insurance, within fifteen (15) days after the date of the Notice of Award. If the Contract is not executed by the Owner within forty-five (45) days following receipt from the Bidder of the signed Contract with Bonds and Certificate, the Bidder shall have the right to withdraw his proposal without penalty unless the Bidder has previously agreed to extend the date for acceptance by the Owner. No Contract shall be effective until it has been fully executed by all of the parties thereto.

6.4 NOTICE TO PROCEED

The Owner will issue a written Notice to Proceed to the Contractor stipulating the date from which Contract Time will be charged and the date Contract Time is to expire, subject to valid modifications of the Contract authorized by Change Order.

6.5 FAILURE TO EXECUTE CONTRACT

Failure to return the signed Contract with acceptable Contract Bonds and Certificate of Insurance within fifteen (15) days after the date of the Notice of Award shall be just cause for the cancellation of the award and the forfeiture of the Bid Security, which shall become the property of the Owner, not as a penalty, but in liquidation of damages sustained. Award may then be made to the next lowest responsible Bidder, or the Work may be re-advertised and constructed under contract or otherwise, as the Owner may decide.

6.6 CONTRACTOR'S QUALIFICATIONS STATEMENT

Bidders to whom award of a contract is under consideration shall submit, upon request, information and data to prove that their financial resources, production or service facilities, and service reputation and experience are adequate to make satisfactory delivery of the services, construction, or items of personal property described in the Bidding Documents (13-1-82, NMSA 1978). The Contractor shall always submit the requirements of Subparagraph 3.9.2 of the General Conditions to the Construction Contract and also in accordance with Paragraph 6.1-B above.

7.0 OTHER INSTRUCTIONS TO BIDDERS

7.1 The bid will be awarded in accordance with Subparagraph 4.10.2.3. The Owner may accept from the apparent low bidder prior to the Award, a reduction to the bid cost or time and, may discuss with the apparent low bidder for potential deductive modifications to the Work prior to the Award however, the Award shall be made on the un-modified Construction Documents with alternates accepted in accordance with this Paragraph 7.0.

7.2 If the lowest responsible bid has otherwise qualified, and if there is no change in the original project scope, terms or conditions, the lowest bidder may negotiate with the purchaser for a lower total bid in order to avoid rejection of all bids for the reason that the lowest bid was up to ten percent higher than budgeted project funds. Such negotiation shall not be allowed if the lowest bid was more than ten percent over budgeted project funds.

INSTRUCTIONS TO BIDDERS – PART B

Section 00 2114

1.0 BID ENVELOPE

The Bid envelope shall be addressed at the front center of the envelope to:

PORTALES MUNICIPAL SCHOOLS
ATTN: SARAH STUBBS, DIRECTOR OF FINANCE/CPO
RFP 20-21-0001
501 S ABILENE AVE
PORTALES, NM 88130

Also on the front of the envelope the Bidder shall mark: the name and address of the Bidder shall in the upper left corner; the name of project, Invitation to Bid Number, date of opening and, time of opening in the lower left corner; and, "**SEALED BIDS ENCLOSED**" in the lower right corner or otherwise on the face thereof.

-END OF SECTION-

DOCUMENT 003119 - EXISTING CONDITION INFORMATION

1.1 EXISTING CONDITION INFORMATION

- A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of the Bidders' own investigations. They are made available for Bidders' convenience and information, but are not a warranty of existing conditions. This Document and its attachments are not part of the Contract Documents.
- B. Existing drawings that include information on existing conditions including previous construction at Project site are available for viewing at the office of Architect & at the office of Owner.
- C. Hydrant flow tests performed on 05/01/2019 by Accurate Fire Protection Designs, LLC are attached.
- D. Sanitary sewer lines were hydro jetted, and video inspected. The results can be seen at the following Google Drive link
 - 1. https://drive.google.com/drive/folders/17a2Ltf7tmvnTZGOgzTbf_AqEHvpDI0lT?usp=sharing
- E. Existing roof warranty is attached
- F. Related Requirements:
 - 1. Document 002113 "Instructions to Bidders" for the Bidder's responsibilities for examination of Project site and existing conditions.
 - 2. Document 003126 "Existing Hazardous Material Information" for hazardous materials reports that are made available to bidders.

END OF DOCUMENT

1

4th and Ave. D

Static: 58 Residual: 54 Flow: 581 Test hydrant location: 4th and F

4th and Ave. F

Static: 53 Residual: 50 Flow: 531 Test hydrant location: 5th and G

5th and Ave. E

Static: 53 Residual: 50 Flow: 950 Test hydrant location: 6th and D

Hydrant test performed on 1May2019 from 1600-1700

. PFD TO RE-TEST HYD'S IN JULY/AUG.

No. G2007-00002242



GAF MATERIALS CORPORATION

EVERGUARD® DIAMOND PLEDGE™ ROOF GUARANTEE



ADDENDUM (over)

TYPE OF GUARANTEE: EVERGUARD DIAMOND PLEDGE PERIOD OF COVERAGE: 20 YEARS
OWNER: PORTALES MUNICIPAL SCHOOLS, PORTALES, NM 88130
NAME AND TYPE OF BUILDING: LL BROWN EARLY CHILDHOOD CENTER
ADDRESS OF BUILDING: 520 WEST 5TH, PORTALES, NM 88130
SPECIFICATION: TFATI60FB AREA OF ROOF: 259.00 SQUARES
APPLIED BY: NEWT & BUTCH'S ROOFING & SHEET METAL / CLOVIS, NM
DATE OF COMPLETION: 10/11/2007 EXPIRATION DATE: 10/11/2027

THE GUARANTEE

GAF MATERIALS CORPORATION ("GAFMC") guarantees to you, the original owner of the building described above, that GAFMC will repair leaks through the EverGuard roofing membrane, base flashing, insulation, expansion joint covers, preflashed accessories and coated edge metal (the "EverGuard Roofing Materials") resulting from the causes listed below while this guarantee is in effect.

Scope Of Coverage - Leaks Caused by:

1. Natural deterioration of the EverGuard Roofing Materials
2. Splits not caused by structural failure or movement of or cracks in substrate roof base or non-GAFMC insulation over which the EverGuard Roofing Materials are applied
3. Ridges
4. Buckles and wrinkles
5. Workmanship in applying the EverGuard Roofing Materials

There is no dollar limit on covered repairs. Leaks caused by any materials other than those listed above, such as the roof deck, insulation, or any other materials used in the construction of the roof system, are not covered.

GUARANTEE PERIOD

This guarantee ends as of the date listed above. Note: Some systems require the use of specialized accessories in the roofing system. Where Mcurbs or Lexsuc® flashings are used, they are covered by this guarantee only for the first ten years.

OWNER'S RESPONSIBILITIES

In the event of a leak through the EverGuard Roofing Materials, you must notify the GAFMC Guarantee Services Group, 1361 Alps Road, Bldg. 11, Wayne, New Jersey 07470 in writing about the leak within 30 days after its discovery or GAFMC will have no responsibility for any repairs. NOTE: the roofing contractor is NOT an agent of GAFMC; notice to the roofing contractor is NOT notice to GAFMC.

By notifying GAFMC, you authorize GAFMC to investigate the cause of the leak. If the investigation reveals that the leak is not covered by this Guarantee, you agree to pay an investigation cost of \$500. This Guarantee will be cancelled if you fail to pay this cost within 30 days of receipt of an invoice for it.

You must perform regular inspections and maintenance and keep records of this work. Any equipment or material that impedes any inspection must be removed at your expense so that GAFMC can perform inspections. You must make repairs to the building or roof components not covered under the guarantee that are identified by GAFMC during an inspection as necessary to preserve the integrity of the EverGuard Roofing Materials. This guarantee will be cancelled if you fail to do so in a timely manner.

You may make temporary repairs to minimize damage to the building or its contents in an emergency, at your sole expense. These repairs will not result in cancellation of the guarantee as long as they are reasonable and customary and do not result in permanent damage to the EverGuard Roofing Materials.

EXCLUSIONS FROM COVERAGE

This Guarantee does NOT cover leaks or defects or deficiencies in the Roof Deck or Roof System caused by:

1. Lack of roof maintenance.
2. Unusual weather conditions or natural disasters including, but not limited to, windstorms, hail, floods, hurricanes, lightning, tornados, and earthquakes.
3. Damage to the roof constructed of the EverGuard Roofing Materials due to: (a) movement or cracking of the roof deck or building; (b) improper installation or failure of any non-GAFMC insulation or materials including, but not limited to, nailers; (c) infiltration or condensation of moisture through or around the walls, copings, building structure or surrounding materials; or (d) chemical attack on the membrane, including, but not limited to, exposure to grease or oil.
4. Traffic of any nature on the roof.
5. Changes in the use of the building unless approved in writing in advance by GAFMC.
6. Any repairs, modifications or additions to the EverGuard Roofing Materials after the roof is completed, unless approved by GAFMC in writing in advance.
7. Any condition (e.g., base flashing height or lack of counter-flashing) that is not in accordance with GAFMC's EverGuard Application and Specifications Manual unless specifically accepted by GAFMC in writing.

No representative, employee or agent of GAFMC has the authority to assume any additional liability or responsibility for GAFMC unless approved in writing by an authorized Guarantee Services Manager. GAFMC shall not be responsible for or liable for any change or amendment to the EverGuard roof specifications in regard to the construction of the roof described above unless the change and/or amendment to the specifications is approved in writing by an authorized GAFMC Guarantee Services Manager. NOTE: Any inspections made by GAFMC are limited to a surface inspection only, are for GAFMC's sole benefit, and do not constitute a waiver of any of the terms and conditions of this guarantee.

ASSIGNABILITY

You may assign this guarantee to a subsequent owner of this building for the remaining term only if: 1) the request is in writing within 30 days after ownership transfer; 2) you make any repairs to the EverGuard Roofing Materials or other roofing or building components that are identified by GAFMC after an inspection as necessary to preserve the integrity of the EverGuard Roofing Materials; and 3) you pay an assignment fee of \$500. This Guarantee is NOT otherwise assignable, directly or indirectly.

LIMITATION OF DAMAGES; MEDIATION; JURISDICTION; CHOICE OF LAW

THIS GUARANTEE IS EXPRESSLY IN LIEU OF ANY OTHER GUARANTEES OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, and of any other obligations or liability of GAFMC, whether any claim against it is based upon negligence, breach of warranty or any other theory. In NO event shall GAFMC be liable for any CONSEQUENTIAL OR INCIDENTAL DAMAGES of any kind, including, but not limited to interior or exterior damages and/or mold growth.

The parties agree that, as a condition precedent to litigation, any controversy or claim relating to this Guarantee shall be first submitted to mediation before a mutually acceptable mediator. In the event that mediation is unsuccessful, the parties agree that neither one will



We
protect
what
matters
most™

Guarantee Services Department

November 18, 2019

PORTALES MUNICIPAL SCHOOLS
501 SOUTH ABILENE
PORTALES, NM 88130

Subject: Repairs / Modifications to existing GAF Guaranteed Roof Systems - Qualifications for inclusion into existing guarantee(s)
Guarantee Number: G2007-00002242

Dear Sir or Madam:

This letter will outline the procedure that must be followed by the owner of a GAF Guaranteed Roof System and the GAF Certified Contractor in order for GAF to consider inclusion for repairs and /or modifications, to the GAF Roofing System under the terms and the conditions of the guarantee.

- a. Owner must notify GAF in writing of the anticipated work to be performed on the GAF Guaranteed roof. Specific reference to the GAF Guarantee number is required so that the project may be easily identified. If there are several guarantees, please note all the guarantee numbers as well as project names.
- b. Owner must have a GAF Certified Contractor (Master / Master Select) draw up a scope of work which must be submitted to GAF Certified Contractor Services and approved prior to start up of work.
- c. GAF will review the scope of work and if approved, will respond with preliminary approval to the owner, contractor, and GAF Territory Manager. (Please be sure to provide contact info for owner / roofer).
- d. Contractor can begin work after receiving preliminary approval.
- e. Upon completion, contractor must take photos of all modified roof areas showing details and submit to GAF Certified Contractor Services
- f. GAF Certified Contractor Services will review the photos and if acceptable will send notification to the owner, roofer and GAF Territory Manager that the areas will be included under the terms of the existing guarantee(s).
- g. If further review is needed (i.e. photos are not clear, there are too many repaired / modified areas to review from photos alone. Etc.), GAF may require that an inspection be performed by GAF personnel at a cost of \$500 per inspection.

Sincerely,

Guarantee Services

DOCUMENT 003126 - EXISTING HAZARDOUS MATERIAL INFORMATION

1.1 EXISTING HAZARDOUS MATERIAL INFORMATION

- A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of Bidders' own investigations. They are made available for Bidders' convenience and information, but are not a warranty of existing conditions. This Document and its attachments are not part of the Contract Documents.
- B. An existing asbestos report for Project, prepared by **Asbestos Consulting, LLC**, dated **March 4th, 2019**, is available for viewing **as appended to this Document**.
- C. Related Requirements:
 - 1. Document 002113 "Instructions to Bidders" for the Bidder's responsibilities for examination of Project site and existing conditions.
 - 2. Document 003119 "Existing Condition Information" for information about existing conditions that is made available to bidders.
 - 3. Document 003132 "Geotechnical Data" for reports and soil-boring data from geotechnical investigations that are made available to bidders.
 - 4. Section 024119 "Selective Structure Demolition" for notification requirements if materials suspected of containing hazardous materials are encountered.

END OF DOCUMENT 003126



Laboratory



Consulting



Industrial Hygiene

**Limited AHERA Asbestos
Survey**

At:

**Brown Early Childhood
Education Center
520 W 5th St
Portales, NM 88130**

Prepared for:

**Portales Municipal Schools
Attn: Nat Gomez
501 S Abilene Street
Portales, NM 88130**

By:

**Asbestos Consulting, LLC
March 4th, 2019**

Limited AHERA Asbestos Survey

Of:

**Brown Early Childhood Education Center
520 W 5th Street
Portales, NM 88130**

Submitted to:

**Portales Municipal Schools
Attn: Nat Gomez
501 S Abilene Street
Portales, NM 88130**

Submitted by:

**Asbestos Consulting, LLC
P.O. Box 249
Lovington, New Mexico 88260**

Inspection completed and prepared by:

**Steven Simpson
Certified Asbestos Inspector**

Purpose

Steven Simpson, representing Asbestos Consulting, LLC conducted a limited Asbestos Inspection of the Brown Early Childhood Education Center located at 520 W 5th St in Portales, New Mexico. The inspection was completed on Monday, March 4th, 2019 to determine the presence of asbestos in building materials identified to be impacted by the upcoming renovations identified on the drawings provided by Formative Architecture. The inspection consisted of obtaining a drawing from the Architect, performing a walk-through to identify the homogenous area building materials present that will be impacted by the upcoming renovation, conducting measurements, and collecting samples of the suspect materials that will be impacted by the upcoming renovation to be tested for the presence of asbestos.

Building Summary

Due to the limited scope of this inspection a full building summary was not performed. The interior walls identified to be impacted by the planned renovations were finished with plaster, and the exterior walls inspected were finished with stucco. The floors in the areas inspected were made up of concrete and finished with a combination of carpet, vinyl floor tile, or ceramic tile. Four different types of cove base were identified throughout the areas inspected however the original cove base mastic was still in place throughout. The ceilings inspected were made up of 3 different types of fiberboard ceiling tiles nailed on with a drop ceiling system installed below. The floors inspected were finished with a combination of 12x12 VCT, 9x9 VCT, carpet, or a combination of either one on a concrete slab. Please note it is assumed that piping is present above the ceilings with suspect asbestos containing insulation however due to the nondestructive nature of this inspection the piping was inaccessible and was not inspected. Once renovation work begins and the piping is exposed it will need to be inspected at that time before any work on the piping can be performed.

Inspection

The inspection was performed in general compliance with the Texas Asbestos Health Protection Rules (25 TAC § 295.31-73), the National Emission Standards for Hazardous Air Pollutants (NESHAP) issued by the U.S. Environmental Protection Agency (40 CFR 61, Subpart M – National Emission Standard for Asbestos), the Asbestos Hazard Emergency Response Act (AHERA, 40 CFR 763), and the Asbestos School Hazard Abatement Reauthorization Act of 1990 (ASHARA, 40 CFR 763, Appendix C to Subpart E).

Asbestos Consulting, LLC employed a sampling strategy which involved identifying homogeneous materials limited to the areas determined by the architects drawing provided and collecting bulk samples of the suspect materials for laboratory analysis to determine asbestos content present. The term "homogeneous," as defined by AHERA, means any material having the same color and texture, and having been installed in the same general time period. Twenty-three (23) homogeneous areas were identified during the course of this survey, from which fifty-three (53) bulk samples were collected. These materials are summarized in Table 1 on the next page.

Table 1 – Summary of Homogenous Materials

Suspect ACM	Location
White/Brown 1x1 Pinhole Ceiling Tile	Above Drop Ceilings in Hallways
White/Gray 2x4 Drop Ceiling Tile	Hallways, Classrooms, and Boys Restrooms
Brown Interior Window Caulking	Interior Side Windows
White/Brown Fiberboard Ceiling Tiles	Above Drop Ceilings in Classrooms
White/Gray 2x4 Pinhole Drop Ceiling Tile	Girls Restroom North of Boys Restroom
White/Peach Sand Texture Plaster	Walls in Classrooms, Closets and Closet Ceilings, Walls in Bathrooms and Bathrooms Ceilings
White Peach Plaster	South Wall in Boys Restroom West Side of School and in Girls Restroom East Side of School
Tan/Black 12x12 Tile and Mastic	Floors Under Carpet in Hallways
Black 9x9 Tile and Mastic	Under Carpet in Closets in Classrooms
Tan 9x9 Tile and Black Mastic	Floor in Hall by Multipurpose Room
Brown/Black 9x9 Tile and Mastic	Border Hall by Multipurpose Room
Tan/Black 12x12 Tile and Mastic	Floor in Girls Restroom in East Hall
White 12x12 Tile and Mastic	Floor in Boys Restroom in West Hall
Black Mastic	Under Carpet in Classrooms
Brown 4" Cove Base and Mastic	Wall Base in Girls Restroom East Hall
Black 4" Cove Base and Mastic	Wall Base in Boys Restroom West Hall
Brown 6" Cove Base and Mastic	Wall Base in Some Classrooms
Mauve 6" Cove Base and Mastic	Wall Base in Some Classrooms
Black 6" Cove Base and Mastic	Wall Base in Most Classrooms
Yellow/White Fiberglass Insulation	Pipe Wrap in Chase in Girls Restroom Near Gym
Tan Mastic	Behind FRP in Boys Restroom in West Hall
Brown Caulking	Exterior Side Windows
Peach/Orange Stucco	Exterior Walls and Around Windows

The homogeneous material was then assessed in terms of friability, condition, and quantity. The term "friable" means a material that when dry can be reduced to a powder using hand pressure (25 TAC § 295.32 (45)). Each bulk sample collected was carefully extracted and placed in its own self-sealing bag. Each bag was sealed, and labeled with a unique sample number. Appropriate chain of custody paperwork was completed listing each sample collected.

Laboratory Analysis

Fifty-three (53) samples were taken and shipped under standard chain of custody protocols to Quantem Laboratories in Oklahoma City, OK. This facility is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for asbestos analysis, and licensed by the TDSHS as an asbestos laboratory (license number 30-0143). The bulk samples were broken down into layers and analyzed by Polarized Light Microscopy (PLM) coupled with Dispersion Staining in accordance with EPA Method 600-R-93-116. The laboratory reports with chain of custody documentation are attached to this report.

Summary of Findings

According to the lab report produced by Quantem Laboratories, eleven (11) of the sixty-four (64) samples analyzed contained asbestos greater than one percent. An ACM is defined as any material or product that contains more than one percent (1%) asbestos (25 TAC § 295.32 (15)). Asbestos containing materials include the following: black mastic, black floor tile, tan floor tile, brown floor tile, and black/yellow mastic (see attached floor plan for ACM locations). **All quantities listed are estimated and contractor should field verify before bidding.**

Recommendations:

- A. Before renovation can occur, all asbestos containing building materials greater than one percent, that will be impacted during renovation, must be removed by a Licensed Asbestos Contractor following all EPA, OSHA and State of New Mexico rules and recommendations due to the fact that disturbance may cause the asbestos to become regulated.
- B. If any suspect materials are encountered during renovation activities that do not show to have been tested, they should not be disturbed and should be considered asbestos containing until determined otherwise.
- C. All asbestos containing materials will have to be disposed of at an EPA/Solid Waste Asbestos certified landfill.


Asbestos Chart

The following chart has the Asbestos sample, locations, and conditions listed.

<u>Sample #</u>	<u>Building Material</u>	<u>Location</u>	<u>Friable or Non-Friable</u>	<u>Quantity</u>	<u>Condition</u>	<u>Percent Asbestos</u>
026a	Black Mastic	Under Floor Tile under Carpet in Hallways	N	3,885 SQFT	Fair	8% Chrysotile
030, 030a	Black Floor Tile and Black Mastic	Under Carpet in Closets in Classrooms	N	175 SQFT	Poor	8% Chrysotile
031, 031a, 033, 033a	Black Tile, Tan Tile and Black Mastic	Floor in Hall by Multipurpose Gym	N	475 SQFT	Fair	5% Chrysotile
035, 035a	Tan Floor Tile and Black Mastic	Floor in Girls Restroom East Hall	N	216 SQFT	Fair	Tile 3% Mastic 5% Chrysotile
039	Black/Yellow Mastic	Under Carpet in Classrooms	N	7,200 SQFT	Fair	5% Chrysotile
0045a	Yellow/Black Mastic	Behind Cove Base Throughout Areas Inspected	N	2,630 LNFT	Fair	4% Chrysotile
051, 052, 053	Peach Stucco	Exterior Walls	N	N/A	Fair	<1% Chrysotile

Asbestos Consulting, LLC would like to thank you for the opportunity to provide your organization with our services. If you have any questions, or if I can be of any further assistance, please feel free to contact me.

Respectfully,

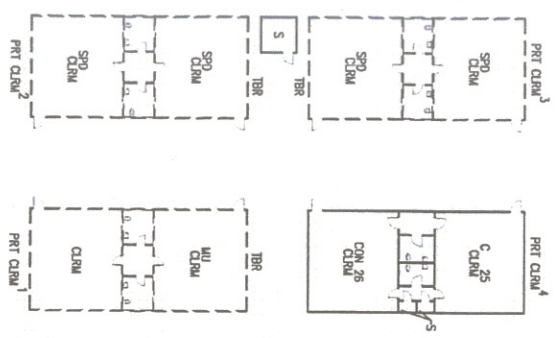
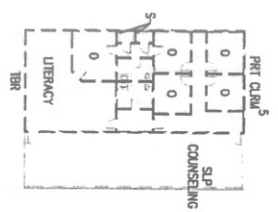


Steven Simpson
Certified Asbestos Inspector

- █ = Carpet and tile over asbestos containing material 3,885 sqft
- █ = 9x9 tile mastic containing asbestos 475 sqft
- █ = Tan 12x12 tile mastic containing asbestos 216 sqft

ACM Note: Cove base mastic throughout areas in speckled contains asbestos 2,630 LNF-6"

5 YEAR FACILITY MASTER PLAN
PORTALES MUNICIPAL SCHOOL DISTRICT



MAIN BUILDING AND
PORTABLE CLASSROOMS
FLOOR PLANS
BROWN EARLY
CHILDHOOD CENTER

GREER STAFFORD/SJCF, Inc.

SECTION X.X.X

January 19, 2006

- █ = Black mastic containing asbestos under carpet 7,200 sqft
- █ = 9x9 tile mastic containing asbestos under carpet 175 sqft



2033 HERITAGE PARK DR, OKLAHOMA CITY, OK 73120 | 1.800.822.1650

Polarized Light Microscopy Asbestos Analysis Report

Quantem Lab No. 306015	Client: Asbestos Consulting
Account Number: B316	P.O. Box 249
Date Received: 03/07/2019	Lovington, NM 88260
Received By: Gennifer Bridgewater	
Date Analyzed: 03/12/2019	Project: 520 W 5th St
Analyzed By: Dee Ammerman	Project Location: Portoles, NM
Methodology: EPA/600/R-93/116	Project Number: N/A

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
001	CT1-1	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 90	Paint
002	CT1-2	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 90	Paint
003	CT1-3	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 90	Paint
004	DC1-1	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 40 Glass Fiber 40	Perlite Paint
005	DC1-2	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 40 Glass Fiber 40	Perlite Paint
006	DC1-3	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 40 Glass Fiber 40	Perlite Paint
007	IWC-1	Homogeneous	Brown Window Glazing	Asbestos Not Present	NA	CaCO3 Binder

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Quantem is a NVLAP accredited PLM laboratory (Lab Code: 101959-0). This report relates only to the specific items tested. NVLAP accreditation applies only to analysis performed utilizing EPA/600/M4-82-020 and EPA/600/R-93/116 methods. This report may not be used to claim product endorsement by NVLAP or any agency of the US Government. This report may not be reproduced except in full, without the written approval of the laboratory.



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Methodology: EPA/600/R-93/116	Project Number: N/A

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
008	IWC-2	Homogeneous	Brown Caulk	Asbestos Not Present	NA	CaCO3 Binder
009	IWC-3	Homogeneous	Brown Caulk	Asbestos Not Present	NA	CaCO3 Binder
010	FBC-1	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 90	Paint
011	FBC-2	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 90	Paint
012	FBC-3	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 90	Paint
013	PCT-1	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 40 Glass Fiber 40	Perlite Paint

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Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
014	PCT-2	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 40 Glass Fiber 40	Perlite Paint
015	PCT-3	Homogeneous	White Ceiling Tile	Asbestos Not Present	Cellulose 40 Glass Fiber 40	Perlite Paint
016	P1-1	Homogeneous	Peach Plaster	Asbestos Not Present	NA	CaCO3 Sand Paint
017	P1-2	Homogeneous	Peach Plaster	Asbestos Not Present	NA	CaCO3 Sand Paint
018	P1-3	Homogeneous	Peach Plaster	Asbestos Not Present	NA	CaCO3 Sand Paint
019	P1-4	Homogeneous	Peach Plaster	Asbestos Not Present	NA	CaCO3 Sand Paint

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Methodology: EPA/600/R-93/116	Project Number: N/A

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
020	P1-5	Homogeneous	Peach Plaster	Asbestos Not Present	NA	CaCO3 Sand Paint
021	P1-6	Homogeneous	Peach Plaster	Asbestos Not Present	NA	CaCO3 Sand Paint
022	P1-7	Homogeneous	Peach Plaster	Asbestos Not Present	NA	CaCO3 Sand Paint
023	P2-1	Layered	White Skim Coat	Asbestos Not Present	NA	CaCO3 Sand Paint
023a		Layered	Peach Plaster	Asbestos Not Present	NA	CaCO3 Sand
024	P2-2	Layered	White Skim Coat	Asbestos Not Present	NA	CaCO3 Sand Paint

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Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
024a		Layered	Peach Plaster	Asbestos Not Present	NA	CaCO3 Sand
025	P2-3	Layered	White Skim Coat	Asbestos Not Present	NA	CaCO3 Sand Paint
025a		Layered	Peach Plaster	Asbestos Not Present	NA	CaCO3 Sand
026	T1-1	Layered	Tan Floor Tile	Asbestos Not Present	NA	CaCO3 Vinyl
026a		Layered	Black Mastic	Asbestos Present Chrysotile 8	NA	Tar
027	T1-2	Layered	Tan Floor Tile	Asbestos Not Present	NA	CaCO3 Vinyl
027a		Layered	** Mastic	**	Not Analyzed	

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Polarized Light Microscopy Asbestos Analysis Report

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Methodology: EPA/600/R-93/116	Project Number: N/A

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
Positive Stop						
028	T1-3	Layered	Tan Floor Tile	Asbestos Not Present	NA	CaCO3 Vinyl
028a		Layered	** Mastic	**	Not Analyzed	
Positive Stop						
029	T1-4	Layered	Tan Floor Tile	Asbestos Not Present	NA	CaCO3 Vinyl
029a		Layered	** Mastic	**	Not Analyzed	
Positive Stop						
030	T-2A-1	Layered	Black Floor Tile	Asbestos Present Chrysotile 8	NA	CaCO3 Vinyl
030a		Layered	Black Mastic	Asbestos Present Chrysotile 8	NA	Tar

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Date Analyzed: 03/12/2019	Project: 520 W 5th St
Analyzed By: Dee Ammerman	Project Location: Portoles, NM
Methodology: EPA/600/R-93/116	Project Number: N/A

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
031	T2-1	Layered	Tan Floor Tile	Asbestos Present Chrysotile 5	NA	CaCO3 Vinyl
031a		Layered	Black Mastic	Asbestos Present Chrysotile 5	NA	Tar
032	T2-2	Layered	** Floor Tile	**	Not Analyzed	
Positive Stop						
032a		Layered	** Mastic	**	Not Analyzed	
Positive Stop						
033	T3-1	Layered	Brown Floor Tile	Asbestos Present Chrysotile 5	NA	CaCO3 Vinyl
033a		Layered	Black Mastic	Asbestos Present Chrysotile 5	NA	Tar
034	T3-2	Layered	** Floor Tile	**	Not Analyzed	

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

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2033 HERITAGE PARK DR, OKLAHOMA CITY, OK 73120 | 1.800.822.1650

Polarized Light Microscopy Asbestos Analysis Report

QuantEM Lab No. 306015	Client: Asbestos Consulting
Account Number: B316	P.O. Box 249
Date Received: 03/07/2019	Lovington, NM 88260
Received By: Gennifer Bridgewater	
Date Analyzed: 03/12/2019	Project: 520 W 5th St
Analyzed By: Dee Ammerman	Project Location: Portoles, NM
Methodology: EPA/600/R-93/116	Project Number: N/A

QuantEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
Positive Stop						
034a		Layered	** Mastic	**		Not Analyzed
Positive Stop						
035	T4-1	Layered	Tan Floor Tile	Asbestos Present Chrysotile 3	NA	CaCO3 Vinyl
035a		Layered	Black Mastic	Asbestos Present Chrysotile 5	NA	Tar
036	T4-2	Layered	** Floor Tile	**		Not Analyzed
Positive Stop						
036a		Layered	** Mastic	**		Not Analyzed
Positive Stop						
037	T5-1	Layered	White Floor Tile	Asbestos Not Present	NA	CaCO3 Vinyl

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

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2033 HERITAGE PARK DR, OKLAHOMA CITY, OK 73120 | 1.800.822.1650

Polarized Light Microscopy Asbestos Analysis Report

Quantem Lab No. 306015	Client: Asbestos Consulting
Account Number: B316	P.O. Box 249
Date Received: 03/07/2019	Lovington, NM 88260
Received By: Gennifer Bridgewater	
Date Analyzed: 03/12/2019	Project: 520 W 5th St
Analyzed By: Dee Ammerman	Project Location: Portoles, NM
Methodology: EPA/600/R-93/116	Project Number: N/A

Quantem Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
037a		Layered	Yellow Mastic	Asbestos Not Present	NA	Glue
038	T5-2	Layered	White Floor Tile	Asbestos Not Present	NA	CaCO3 Vinyl
038a		Layered	Yellow Mastic	Asbestos Not Present	NA	Glue
039	BM-1	Homogeneous	Black/Yellow Mastic	Asbestos Present Chrysotile 5	NA	Tar Glue
040	BM-2	**	** **	**	Not Analyzed	
Positive Stop						
041	BM-3	**	** **	**	Not Analyzed	
Positive Stop						
042	CB1	Layered	Brown Cove Base	Asbestos Not Present	NA	CaCO3 Vinyl

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

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2033 HERITAGE PARK DR, OKLAHOMA CITY, OK 73120 | 1.800.822.1650

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 306015	Client: Asbestos Consulting
Account Number: B316	P.O. Box 249
Date Received: 03/07/2019	Lovington, NM 88260
Received By: Gennifer Bridgewater	
Date Analyzed: 03/12/2019	Project: 520 W 5th St
Analyzed By: Dee Ammerman	Project Location: Portoles, NM
Methodology: EPA/600/R-93/116	Project Number: N/A

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
042a		Layered	Brown Mastic	Asbestos Not Present	NA	Glue
043	BCB-1	Layered	Black Cove Base	Asbestos Not Present	NA	CaCO3 Vinyl
043a		Layered	Yellow Mastic	Asbestos Not Present	NA	Glue CaCO3
044	BRC-1	Layered	Brown Cove Base	Asbestos Not Present	NA	CaCO3 Vinyl
044a		Layered	Tan Mastic	Asbestos Not Present	NA	Glue CaCO3
045	MC-1	Layered	Mauve Cove Base	Asbestos Not Present	NA	CaCO3 Vinyl

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2033 HERITAGE PARK DR, OKLAHOMA CITY, OK 73120 1.800.822.1650

Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 306015 Client: Asbestos Consulting
 Account Number: B316 P.O. Box 249
 Lovington, NM 88260
 Date Received: 03/07/2019
 Received By: Gennifer Bridgewater
 Date Analyzed: 03/12/2019 Project: 520 W 5th St
 Analyzed By: Dee Ammerman Project Location: Portoles, NM
 Methodology: EPA/600/R-93/116 Project Number: N/A

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
045a		Layered	Yellow/Black Mastic	Asbestos Present Chrysotile 4	NA	Tar Glue
046	BC-1	Layered	Black Cove Base	Asbestos Not Present	NA	CaCO3 Vinyl
046a		Layered	Tan Mastic	Asbestos Not Present	NA	Glue CaCO3
047	FI-1	Layered	Yellow Insulation	Asbestos Not Present	Glass Fiber 100	
047a		Layered	White Wrap	Asbestos Not Present	Cellulose 100	
048	CRP-1	Homogeneous	Tan Mastic	Asbestos Not Present	NA	Glue CaCO3
049	EWC-1	Homogeneous	Brown Caulk	Asbestos Not Present	NA	CaCO3 Binder

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

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Polarized Light Microscopy Asbestos Analysis Report

QuanTEM Lab No. 306015	Client: Asbestos Consulting
Account Number: B316	P.O. Box 249
Date Received: 03/07/2019	Lovington, NM 88260
Received By: Gennifer Bridgewater	
Date Analyzed: 03/12/2019	Project: 520 W 5th St
Analyzed By: Dee Ammerman	Project Location: Portoles, NM
Methodology: EPA/600/R-93/116	Project Number: N/A

QuanTEM Sample ID	Client Sample ID	Composition	Color / Description	Asbestos (%)	Non-Asbestos Fiber (%)	Non Fibrous
050	EWC-2	Homogeneous	Brown Caulk	Asbestos Not Present	NA	CaCO3 Binder
051	S1-1	Homogeneous	Peach Stucco	Asbestos Present Chrysotile <1	NA	CaCO3 Sand Paint
052	S1-2	Homogeneous	Peach Stucco	Asbestos Present Chrysotile <1	NA	CaCO3 Sand Paint
053	S1-3	Homogeneous	Peach Stucco	Asbestos Present Chrysotile <1	NA	CaCO3 Sand Paint

Dee Ammerman

Dee Ammerman, Laboratory Manager

3/12/2019

Date of Report

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

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3/12/05



ASBESTOS CHAIN OF CUSTODY

2033 Heritage Park Drive, Oklahoma City, OK 73120-7502
 (800) 822-1650 • (405) 755-7272 • Fax: (405) 755-2058

LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

Contact Information Company: <i>Asbestos Consulting LLC</i> Contact: <i>Steven Simpson</i> Account #: <i>6316</i> Phone: <i>575-396-8492</i> Cell Phone: <i>575-704-9366</i> E-mail: <i>asbestos consulting @ eg.com</i> Date: <i>3-4-19</i>		Project Information Project Name: <i>CCC 520 w 5th st</i> Project Location: <i>Portales NM</i> Project ID: _____ P.O. Number: _____	
--	--	--	--

Page 1 of 4

For Lab Use Only
 Lab No. *306015*
 Accept Reject

Report Results (one box)
 QuantEM Website
 Email
 Other

RELINQUISHED BY <i>Steven Simpson</i>	VIA <i>Fed Ex</i>	RECEIVED BY <i>Chad Roberts</i>	DATE & TIME <i>3/7/19 01:10</i>
--	----------------------	------------------------------------	------------------------------------

REQUESTED SERVICES (Please the Appropriate Boxes)

	PLM		TEM		TEM		TURNAROUND TIME	
	<input checked="" type="checkbox"/> Bulk Analysis (EPA 600/R-93/116)	<input type="checkbox"/> Vermiculite Attic Insulation (EPA 600/R-04/004)	<input type="checkbox"/> Air-AHERA	<input type="checkbox"/> Air-NIOSH 7402	<input type="checkbox"/> Bulk-Presence / Absence EPA600/R-93/116	<input type="checkbox"/> Bulk-Quantitative [weight%]- Chatfield	<input type="checkbox"/> Rush	<input type="checkbox"/> Same Day
<input type="checkbox"/> 400 Point Count	<input type="checkbox"/> Other	<input type="checkbox"/> Air-ISO 10312	<input type="checkbox"/> Drinking Water- EPA 100.2	<input type="checkbox"/> Dust-Presence / Absence	<input type="checkbox"/> Dust-Quantitative [fibers/sq.cm]- ASTM D5755	<input type="checkbox"/> 24 - Hour	<input type="checkbox"/> 3 - Day	<input type="checkbox"/> 5 - Day
<input type="checkbox"/> 1000 Point Count	PCMC		<input type="checkbox"/> Waste Water- EPA 600/4-83-043	Other				
<input type="checkbox"/> Gravimetric Preparation	NIOSH 7400							
<input type="checkbox"/> Particle ID								

No.	Sample ID (10 Characters Max)	To Be Analyzed <input checked="" type="checkbox"/>	Color	Description	Volume / Area (as applicable)	Comments / Notes
1	CT1-1	<input type="checkbox"/>	White/Beige	1x1 Pinhole ceiling tile		Above drop ceiling in hallway 5
2	CT1-2	<input type="checkbox"/>	White/Beige	1x1 Pinhole ceiling tile		" "
3	CT1-3	<input type="checkbox"/>	White/Beige	1x1 Pinhole ceiling tile		" "
4	Del-1	<input type="checkbox"/>	White/gray	2x4 drop ceiling tile		Hallway 5 classrooms, boys area
5	Del-2	<input type="checkbox"/>	White/gray	2x4 drop ceiling tile		" "
6	Del-3	<input type="checkbox"/>	White/gray	2x4 drop ceiling tile		" "
7	Inc-1	<input type="checkbox"/>	Brown	Interior window caulking		" "
8	Inc-2	<input type="checkbox"/>	Brown	Interior window caulking		Front side windows
9	Inc-3	<input type="checkbox"/>	Brown	Interior window caulking		" "
10	FBC-1	<input type="checkbox"/>	White/Beige	Fiber-board ceiling tiles		Above drop ceilings in classrooms

105 SATURDAY FEDEX SAMPLE DELIVERY - CALL TO SCHEDULE • Use this address for Saturday Delivery only: 4220 N. Santa Fe Ave., Oklahoma City, OK 73105-8517 • Mark Package "Hold for Saturday Pickup"
 519 Please Note - UPS and USPS are NOT available for Saturday Delivery



ASBESTOS CHAIN OF CUSTODY

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For Lab Use Only

Lab No. 306015

Accept Reject

Project Information		Project Name:	Project Location:	Volume / Area (as applicable)	Comments / Notes
Company: <u>Asbestos consulting LLC</u>		<u>Brom ECEC 520 W 5th St</u>	<u>Portales NM</u>		
No.	Sample ID (10 Characters Max)	To Be Analyzed <input checked="" type="checkbox"/>	Color	Description	
11	FBE-2	<input type="checkbox"/>	white/brown	Fiberboard ceiling tile	Above boy ceiling classrooms
12	FBC-3	<input type="checkbox"/>	white/brown	Fiberboard ceiling tile	" "
13	PCT-1	<input type="checkbox"/>	white/grey	2x4 pinhole drop ceiling tile	GIRLS RESTROOM N. of boys
14	PCT-2	<input type="checkbox"/>	white/grey	2x4 pinhole drop ceiling tile	GIRLS RESTROOM N. of boys
15	PCT-3	<input type="checkbox"/>	white/grey	2x4 pinhole drop ceiling tile	" "
16	P1-1	<input type="checkbox"/>	white/peach	Sand texture plaster	walls classrooms, closets & closet ceilings walls in both boys & bathroom-ceiling's.
17	P1-2	<input type="checkbox"/>	white/peach	Sand texture plaster	" "
18	P1-3	<input type="checkbox"/>	white/peach	Sand texture plaster	" "
19	P1-4	<input type="checkbox"/>	white/peach	Sand texture plaster	" "
20	P1-5	<input type="checkbox"/>	white/peach	Sand texture plaster	" "
21	P1-6	<input type="checkbox"/>	white/peach	Sand texture plaster	" "
22	P1-7	<input type="checkbox"/>	white/peach	Sand texture plaster	" "
23	P2-1	<input type="checkbox"/>	white/peach	plaster	5 walls in boys & E side school
24	P2-2	<input type="checkbox"/>	white/peach	plaster	1 in GIRLS & E side school
25	P2-3	<input type="checkbox"/>	white/peach	plaster	" "
26	T1-1	<input type="checkbox"/>	tan/black	12x12 tile & waste	Flowers under car port in Hallways
27	T1-2	<input type="checkbox"/>	tan/black	12x12 tile & waste	" "
28	T1-3	<input type="checkbox"/>	tan/black	12x12 tile & waste	" "
29	T1-4	<input type="checkbox"/>	tan/black	12x12 tile & waste	" "
30	T-2A1	<input type="checkbox"/>	Black	9x9 tile & waste	under carpet in closets in classrooms



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LEGAL DOCUMENT - PLEASE PRINT LEGIBLY

For Lab Use Only
Lab No. <u>360013</u>
<input checked="" type="checkbox"/> Accept <input type="checkbox"/> Reject

Project Information		Project Name:	Project Location:	Comments / Notes		
Company: <u>Asbestos consulting LLC</u>		<u>Born Ecc 520 W 5th St</u>	<u>Portales NM</u>			
No.	Sample ID (10 Characters Max)	To Be Analyzed	Color	Description	Volume / Area (as applicable)	Comments / Notes
31	T2-1	<input type="checkbox"/>	Tan/black	9x9 tile mastic		Floor Hall by multi-purpose gym
32	T2-2	<input type="checkbox"/>	Tan/black	9x9 tile mastic		Floor Hall by multi-purpose gym
33	T3-1	<input type="checkbox"/>	Brown/black	9x9 tile mastic		Border Hall by multi-purpose gym
34	T3-2	<input type="checkbox"/>	Brown/black	9x9 tile mastic		Border Hall by multi-purpose gym
35	T4-1	<input type="checkbox"/>	Tan/black	12x12 tile mastic		Floor Girls RR E Hall
36	T4-2	<input type="checkbox"/>	Tan/black	12x12 tile mastic		Floor Girls RR E Hall
37	T5-1	<input type="checkbox"/>	White	12x12 tile mastic		Floor Boys RR W Hall
38	T5-2	<input type="checkbox"/>	White	12x12 tile mastic		Floor Boys RR W Hall
39	Bm-1	<input type="checkbox"/>	Black	mastic		Under carpet in classrooms
40	Bm-2	<input type="checkbox"/>	Black	mastic		Under carpet in classrooms
41	Bm-3	<input type="checkbox"/>	Black	mastic		Under carpet in classrooms
42	CB1	<input type="checkbox"/>	Brown	4" core base mastic		Wall base Girls RR E Hall
43	BCB-1	<input type="checkbox"/>	Black	4" core base mastic		Wall base Boys RR W Hall
44	BCC-1	<input type="checkbox"/>	Brown	6" core base mastic		Wall base in ^{base} classrooms
45	mc-1	<input type="checkbox"/>	White	6" core base mastic		Wall base in base classrooms
46	Bc-1	<input type="checkbox"/>	Black	6" core base mastic		Wall base in base classrooms
47	FI-1	<input type="checkbox"/>	Yellowish	Fiberglass Insulation		Pipe wrap in chase Girls RR E Hall
48	CCP-1	<input type="checkbox"/>	Tan	mastic		Behind FRP in boys RR W Hall
49	FWC-1	<input type="checkbox"/>	Brown	Conkby		Ext side windows
50	EWc-2	<input type="checkbox"/>	Brown	Conkby		Ext side windows



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 (800) 822-1650 • (405) 755-7272 • Fax: (405) 755-2058

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Lab No. <u>300015</u>
<input checked="" type="radio"/> Accept <input type="radio"/> Reject

Project Information				Project Location:	Comments / Notes
Company:	<u>Asbestos Consulting LLC</u>	Project Name:	<u>Sam Eick 520 W. 5th St</u>		
No.	Sample ID (10 Characters Max)	To Be Analyzed	Color	Description	Volume / Area (as applicable)
S1	S1-1	<input type="checkbox"/>	<u>pink/gray</u>	<u>stucco</u>	<u>Ext walls around windows</u>
S2	S1-2	<input type="checkbox"/>	<u>pink/gray</u>	<u>stucco</u>	<u>Ext walls & around windows</u>
S3	S1-3	<input type="checkbox"/>	<u>pink/gray</u>	<u>stucco</u>	<u>11</u>
4		<input type="checkbox"/>			
5		<input type="checkbox"/>			
6		<input type="checkbox"/>			
7		<input type="checkbox"/>			
8		<input type="checkbox"/>			
9		<input type="checkbox"/>			
0		<input type="checkbox"/>			
1		<input type="checkbox"/>			
2		<input type="checkbox"/>			
3		<input type="checkbox"/>			
4		<input type="checkbox"/>			
5		<input type="checkbox"/>			
6		<input type="checkbox"/>			
7		<input type="checkbox"/>			
8		<input type="checkbox"/>			
9		<input type="checkbox"/>			
0		<input type="checkbox"/>			

DOCUMENT 003132 - GEOTECHNICAL DATA

1.1 GEOTECHNICAL DATA

- A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of Bidders' own investigations. They are made available for Bidders' convenience and information, but are not a warranty of existing conditions. This Document and its attachments are not part of the Contract Documents.
- B. A geotechnical investigation report for Project, prepared by **Dyess-Peterson Testing Laboratory, Inc.** dated **November 1st 2019**, is available for viewing **as appended to this Document**.
- C. Related Requirements:
 - 1. Document 002113 "Instructions to Bidders" for the Bidder's responsibilities for examination of Project site and existing conditions.
 - 2. Document 003119 "Existing Condition Information" for information about existing conditions that is made available to bidders.
 - 3. Document 003126 "Existing Hazardous Material Information" for hazardous materials reports that are made available to bidders.

END OF DOCUMENT 003132

**Geotechnical Soils Investigation
For
Portales Municipal Schools District L.L. Brown
Early Childhood Center
in
Portales, New Mexico**

November 1, 2019

**Prepared For:
Portales Municipal Schools District
% Johnnie Cain, Superintendent**

**Dyess-Peterson Testing Laboratory, Inc.
Texas Registered Engineering Firm F-1773
1700 SE 22nd Avenue
Amarillo, Texas 79103
(806) 372-4911 (Office)
(806) 372-5552 (Fax)**

Report No. 4815

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November 1, 2019

Portales Municipal Schools District
501 South Abilene
Portales, New Mexico 88130

Attn: Johnnie Cain, Superintendent

Subject: Geotechnical Soils Investigation
**PORTALES MUNICIPAL SCHOOLS DISTRICT L.L. BROWN EARLY
CHILDHOOD CENTER**
Portales, New Mexico
DPTL Report No. 4815

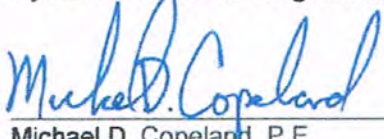
Dear Mr. Cain,

Dyess-Peterson Testing Laboratory, Inc. (DPTL) has completed the authorized subsurface exploration and geotechnical engineering report for the above mentioned project as authorized by yourself on September 16, 2019 by means of Purchase Order No. 19201505. The following report briefly presents our understanding of the project, reviews our exploration procedures, describes existing site and subsurface conditions, and summarizes our evaluations, conclusions, and recommendations relative to the geotechnical aspects of the project.

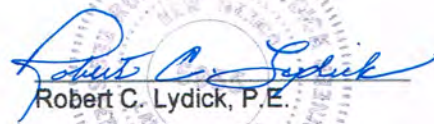
The primary issue at this particular site is the need to provide in-situ soils conditions as they relate to the design of structural foundations for the proposed childhood center addition project. The most common methods of construction practices for a project of these nature are discussed in detail in the attached report.

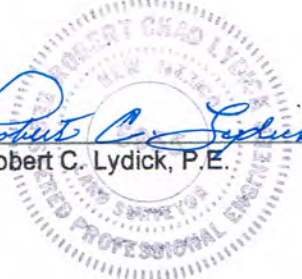
We have enjoyed working with you on this phase of the project. If you have any questions regarding this report or we can be of further service please do not hesitate to call us at (806) 372-4911. We look forward to working with you in the future.

Sincerely,
Dyess-Peterson Testing Laboratory, Inc.



Michael D. Copeland, P.E.
Principal Engineer
(Not Licensed in New Mexico)



Robert C. Lydick, P.E.


Geotechnical Soils Investigation
**PORTALES MUNICIPAL SCHOOLS DISTRICT L.L. BROWN
EARLY CHILDHOOD CENTER**
Portales, New Mexico
DPTL Report No. 4815

GENERAL SUMMARY

The following is a brief summary of the information detailed in the following report. All issues summarized in this section are discussed in more detail in the report. This report must be read in its entirety prior to the implementation into design and construction of this project.

1. DPTL has performed two (2) geotechnical borings at this site for design. The subject site is located in the East/Northeast corner of the playground area at the Portales Municipal Schools District L.L. Brown Elementary School which is physically located at 520 W. 5th Street in Portales, Roosevelt County, New Mexico. The borings were proposed to be extended to a depth of 20 feet for boring #1 and 5 feet for boring #2 below existing soil grade. However, due to encountering rock at the 10' depth thus causing auger refusal, boring #1 was terminated. The borings extended utilizing a Geoprobe 7822DT drilling unit.
2. According to the United States Department of Agriculture (USDA) "Soil Survey for Roosevelt County" the subsurface material encountered at this site should be Midessa fine sandy loam, 0 to 1 percent slopes. The parent material of the Midessa fine sandy loam consists of calcareous loamy eolian deposits and/or lacustrine deposits. The typical profile for the Midessa fine sandy loam from the surface to 10 inches is fine sandy loam, 10 to 80 inches is sandy clay loam. It is not flooded nor is it ponded. Shrink-swell potential of this soil is low.
3. Groundwater was not encountered on the drilling tools (augers) or in the open boreholes upon completion of the two (2) borings drilled. Groundwater at the deepest 10' depth is un-common for this area and is not expected to be encountered even during wet seasons. No excessive moistures were encountered near the surface in the top 10 feet of the borings drilled during drilling at this site based on the soil types.
4. Laboratory test results indicate that the soils encountered in the total ten (10) feet of the two (2) borings are moderate in plasticity. A Potential Vertical Rise (PVR) of up to 0.41" in the total ten (10) feet of existing soils has been estimated for the current conditions and anticipated for the childhood center addition project not including design loads for the proposed structure if no improvements are made to the existing soils or if the soils are allowed to become saturated over a depth of ten feet from the existing moisture content.

These and other design and construction recommendations are discussed in more detail in the attached report.

Geotechnical Soils Investigation
**PORTALES MUNICIPAL SCHOOLS DISTRICT L.L. BROWN
EARLY CHILDHOOD CENTER
Portales, New Mexico**

1.0 INTRODUCTION

1.1 Project Information

This report presents the findings of our subsurface exploration and geotechnical engineering evaluation for the proposed childhood center addition structure. The subject site is located in the East/Northeast corner of the playground at Portales Municipal Schools District L.L. Brown Elementary School that is physically located at 520 W. 5th Street in Portales, Roosevelt County, New Mexico. Information for this project was provided by Owen Kramme of Formative Architecture.

This project will consist of the construction of a one (1)-story childhood center addition that will be approximately 300 square feet (ft²) in size. Exterior structural framing for the childhood center structure will be load bearing Concrete Masonry Unit (CMU) block walls framing. The exterior finish will be a finish coat. The roof system will be steel bar joists and decking covered by a Thermoplastic Polyolefin (TPO) membrane. It is estimated that less than 12 inches of select fill material placement will be required based on existing site grades in order to provide proper site drainage and match the slab-on-grade finished floor elevation of the existing elementary school if placed on existing soil grade. Along with this addition the parking lot on W. 5th Street will be reconstructed.

Design loading was not provided at the time of the report completion therefore a value of 2,000 pounds per linear foot (plf) for the wall supporting footings was estimated for report purposes.

1.2 Purpose of Exploration

The objective of this exploration was to explore the general subsurface conditions at the site and to evaluate and analyze these conditions as they relate to foundation design and construction. The field exploration has been accomplished by securing subsurface soil samples from widely spaced test borings performed across the expanse of the site. The analyses have been used to develop geotechnical engineering design parameters for the support foundations and slab to be constructed for the project.

Recommendations provided in this report have been developed from information obtained in the test borings which depict subsurface conditions only at the specific boring locations and at the particular time designated on the logs. Subsurface conditions at the other locations may differ from those observed at the boring locations. This scope of work is not intended to fully define the variability of subsurface materials which may be present on the site. The nature and extent of variations may not become evident until construction. If significant variations then appear our office should be contacted to re-evaluate our recommendations after performing on-site observations and tests.

Recommendations presented in this report should not be used for design of any other structure except that specifically described in this report. Subsurface conditions can change with passage of time. Recommendations contained herein are not considered applicable for an extended period of time after the completion date of this report. It is recommended that our office be contacted for a review of the contents of this report for construction commencing more than one (1) year after completion of this report.

If the client notes any deviation from the facts about project characteristics our office should be contacted immediately since this may materially alter the recommendations. If the recommendations stated in this report are not followed, Dyess-Peterson Testing Laboratory, Inc. (DPTL) is not responsible for damages resulting from workmanship of designers or contractors and it is recommended that DPTL be retained by the owner to verify work is performed in accordance with plans and specifications.

1.3 Scope of Exploration

The scope of work included a site reconnaissance, soil test borings, sampling, laboratory testing, engineering evaluation of the field and laboratory data, and the preparation of this report. Specifically, this report addressed the following:

1. Description of the existing site conditions.
2. A description of the area, site evaluation and subsurface conditions.
3. Subsurface soil, rock stratigraphy and groundwater observations.
4. Recommendations for foundation design (structure & pavement) including allowable bearing capacities, estimated bearing levels, and PVR. Frost penetration depth is also provided.
5. Recommendations for structural support below existing soil grade.
6. Recommendations for site preparation, earthwork, groundwater, proof rolling control as required. This includes a maximum Plasticity Index for select fill materials and analysis of the effect of weather and construction equipment on soil during construction.
7. Analysis of soils to evaluate presence of potentially expansive or deleterious conditions.

2.0 INVESTIGATION PROCEDURES

2.1 Visual Inspection

The site and surrounding areas were evaluated visually by an employee of DPTL. The observations were utilized during the determination of recommendations and in relating known geologic conditions in the area to site specific conditions.

2.2 Scope of Field Investigation

The two (2) geotechnical borings were advanced at the approximate locations shown on the attached Location of Borings Map (Figure 2 in Appendix A). Exact sea-level elevations were not provided for the boring locations so a relative elevation of 100.0' was utilized for each boring as the elevation of both borings visually appear to be nearly the same for both borings due to the overall levelness of the site and is shown on the boring logs. There were no restrictions encountered by underground utilities as they were located and cleared before drilling began by New Mexico 811 and Portales Municipal Schools District personnel as arranged by Lydick Engineers personnel. Please note, the borings were advanced in the approximate locations shown on the Location of Borings map. The boring locations were determined by Owen Kramme of Formative Architecture personnel but located in the field by Lydick Engineers personnel based on the site map provided by Formative Architecture personnel.

Representative soil samples of the subsurface materials were obtained utilizing a split-spoon sampling method as per ASTM D1586. A standard 2-inch O.D. split-spoon sampler was driven 18-inches into subsurface materials using a 140-pound hammer with a fall of 30-inches to obtain relatively undisturbed samples at selected depths during drilling procedures. The number of blows to drive the split-spoon sampler the final 12-inches of penetration, known as N-Value, is recorded in the appropriate column on the log. The samples were removed from the sampler and placed in sealable plastic bags to prevent moisture loss or gain and to be used in further testing. The borings were backfilled with on-site materials and bentonite pellets upon completion.

The soil classifications and descriptions are based on visual examination, as outlined in ASTM D2487-92, the Unified Soil Classification System in conjunction with Munsell Soil Color Charts, and should be considered approximate. Subsurface materials encountered are recorded on the boring logs, which depict soil classifications, descriptions, and penetration resistance and are included in Appendix B. The soil stratigraphy lines shown on the boring logs represent the approximate boundary between soil types and the transition may be gradual.

2.3 Scope of Laboratory Testing

Minus #200 sieve analysis (ASTM D1140-92), existing moisture content (ASTM D2216), and Atterberg Limits test (ASTM D4318-84) were performed on selected samples to assist in classification of subsurface materials and determination of engineering characteristics of the materials. All laboratory results are described on the Log of Borings located in Appendix B.

3.0 SITE AND SUBSURFACE CONDITIONS

3.1 Site Descriptions

The subject site is located in the East/Northeast corner of the playground area of the L.L. Brown Elementary School which is physically located at 520 W. 5th Street in Portales, Roosevelt County, New Mexico.

Ground vegetation on the project site is non-existent as the site is covered in concrete or mulch.

The topographical conditions at this site appear to be fairly level overall thus resulting in the site being poorly drained in its existing state. In the area of the proposed structure the terrain visibly appears to slope so very slightly away from the existing elementary school.

3.2 Subsurface Conditions

All data interpreted from the geotechnical borings is detailed in the Log of Borings located in Appendix B. As previously mentioned, the location of the test borings are pictured on Figure 2 in Appendix A.

The subsurface conditions discussed in the following paragraphs and those depicted in the Log of Borings are based solely on the information obtained from the geotechnical borings drilled at the site and represents an estimate of the subsurface conditions based on interpretation of the boring data using normally accepted geotechnical engineering judgements.

The soil borings encountered Clayey Sand and Silty Clayey Sand soils. These soil types are discussed in the following paragraphs. As mentioned previously, boring #1 was terminated at the 10' depth due to encountering rock. As also mentioned previously, no excessive moisture contents were encountered near the surface based on the soil types. The soils appear to be in a dry moisture state from the surface to 10' depth in the total 10' of the borings drilled.

3.2.1 Clayey Sand

Clayey Sands were encountered in boring #1 from the surface to full 10' depth and in boring #2 from the surface to 3' depth. The colors of this soil were Brown, Pinkish White, White and Pink.

The Plasticity Index (PI) of the Clayey Sands ranged from 11 to 16 which results in a degree of plasticity of moderate while the moisture contents ranged from 7.4 to 11.2 percent with the density varying from medium dense to very dense.

The Standard Penetration Test value (blow counts) for the Clayey Sands existing in the borings varied from 12 blows for 12 inches of penetration to being unable to seat the sampler six (6) with less than 50 blows.

3.2.2 Silty Clayey Sand (SC-SM)

Silty Clayey Sand was encountered in boring #2 from the surface to 3' depth. The color of this soil were Light Brown.

The Plasticity Index (PI) of the Silty Clayey Sand was 6 which results in a degree of plasticity of low while the moisture content was 12.2 percent.

3.2.3 Groundwater

As mentioned previously, groundwater was not noted on the drilling tools (augers) or in the open boreholes upon completion of the two (2) borings drilled. Groundwater at this deepest 10' depth is uncharacteristic for this area and is not expected to be encountered. It is unlikely that groundwater would be encountered during excavations such as spread footings which will be detailed later in this report.

The amount of water is expected to vary with seasonal rainfall, other climatic conditions, surface runoff, permeability of on-site soils, continuity of pervious soils, irrigation practices, and other factors. Once again, the excavation of spread footings which will be detailed later in this report are not expected to be affected by any groundwater.

These observations do not constitute a groundwater study nor was such a study authorized as a part of the scope of investigation. Several days of observation will be required to evaluate actual groundwater levels within the depth explored.

3.2.4 Frost Depth

The design frost depth for Roosevelt County, New Mexico is 18 inches. Because of this fact a minimum foundation depth of 24 inches is recommended.

3.2.5 Seismic Zone

According to the 2015 International Building Code (IBC) the site soil profile based on existing soil properties to the total depth of the borings would be S_E for the surface to 6' depth, then S_C for the 6' to 10' depth therefore a site soil profile of S_C should be utilized for design.

3.2.6 Settlement

Total settlement for this project should be of the magnitude of 1" or less if constructed as recommended with differential settlement estimated to be as low as 50% of total settlement and probably will not exceed 75% of total settlement. Approximately 50-60% of the expected settlement could occur during construction.

3.2.7 Shrink/Swell Potential

The tendency for a soil to shrink and swell with changes in soil moisture content is a function of the clay content and the type of clay material. These are reflected in soil consistency as indicated by the Liquid Limit and Plasticity Index of the Atterberg Limits tests. A generalized relationship between shrink/swell potential and the soil Plasticity Index (P.I.) is shown as follows:

<u>General Relationship Between P.I. and Shrink/Swell Potential</u>	
<u>P.I. Range</u>	<u>Shrink/Swell Potential</u>
0 to 15	Low
15 to 25	Medium
25 to 35	High
>35	Very High

The soils at this site possess a low shrink/swell potential.

Swelling Characteristics: An estimate of the magnitude of the possible ground surface movement caused by shrinking and swelling of the clay containing soils has been made through the use of the PVR procedure. As previously mentioned a PVR of up to 0.41" is expected if no modifications are made to the existing soils. The anticipated ground movements due to the possible swelling of the underlying soils at the site were estimated using existing moisture conditions. It is still recommended that the final grade be such that positive drainage exist away from the foundations. This could be achieved by select fill material placement process. It is estimated that less than 12 inches of select fill material placement will be necessary, based on the existing ground elevations after the existing mulch and concrete have been removed to achieve final soil elevation in order to provide positive drainage away from the structure and achieve the finished floor elevation that will match that of the existing elementary school. We estimate the PVR value will be reduced by about 1/8" for each foot of select fill material placed above the existing ground surface.

The low to moderate clay containing soils in the total 10' of the two (2) borings have potential for volume change with changes in the soils moisture content. The volume change is normally evidenced by the heaving and cracking of the concrete floor slab and/or foundations. The PVR at this site is on the order of up to 0.41" assuming the in-place soils are allowed to increase in moisture content from an existing condition to a relatively wet condition over a depth of 10 feet. It is not uncommon to assume differential movement as half of the PVR. Controlling the moisture content variation of a soil will reduce its variation in volume. A number of measures may be increased to attain a reduction in subsoil moisture content variations, thus reducing the shrink/swell potential. Some of the measures are listed below:

- 1) During construction, a positive surface drainage scheme should be implemented to prevent ponding of water on the subgrade.
- 2) The structure subgrade should not be allowed to dry out.

- 3) Positive surface drainage should be maintained around the structure through a roof/gutter system connected to piping or a paved surface around the addition structures, transmitting water away from the foundation perimeter, in addition to positive grades sloping away from the foundation. Proper grading and drainage in the foundation area to prevent ponding of water is essential. In no instance should water be allowed to pond in the foundation vicinity either during or after construction. The final ground surface should be sloped down and away from the edge of the foundation at a minimum of five percent (5%) slope (six inches drop in ten feet of run) to make sure water drains away from the foundation area during the life of the structure. The slope should extend at least ten feet from the foundation perimeter. Splash blocks are also required for hose bibs and water spigots.
- 4) Utility trenches should be backfilled with borrow materials having PI values of 15-20 to reduce the potential of the trenches acting as aqueducts and transmitting water beneath the structure due to excessive surface water infiltration. Another option would be the use of flowable fill.
- 5) A paved surface (mow strip) should extend beyond the structure line a minimum of 3' to serve as a barrier to soil moisture evaporation and infiltration. However, such surfaces should be structurally isolated from the foundation to prevent the transfer of stresses to the foundation from the paved surfaces.
- 6) Differential movements should be expected between the foundation and adjoining structures, such as sidewalks, driveways, or other appurtenances. Flexible joints should be used which account for such movement without adversely affecting the aesthetics and integrity of the joint and without allowing stress transfer.

This method utilizes correlations between Atterberg Limits test data to estimate the swell potential and as such, the result must be considered as giving approximate values of the shrink-swell potential. It should be noted that these PVR estimates are indicative of the relative magnitude of probable movement under seasonal moisture changes in the soil moisture content. Movements in excess of these values may be expected if increases in soil moisture occur as the result of broken water or sewer lines or improper drainage of surface water. The client is cautioned that the strength of soils can vary significantly with moisture content. When soils are dry the strength can be relatively high while the soils can lose their strength when they are wet.

Care must be taken not to create an excavation which traps water. Once again it is our belief that select fill material placement would need to be utilized to achieve final soil grade to provide positive drainage away from the foundation. The select fill material should extend out from foundation elements a distance at least equal to 5 feet. The select fill material should meet the specification and compaction requirements provided in a following subsection. Select fill material not under the structure should be covered around the structure perimeter with a relatively impermeable cover to minimize water infiltration into the select fill material. It is highly recommended that positive drainage exist away from the structure in order to prevent subjecting the foundation to a moisture increase. It is also important to prevent a significant moisture decrease. This would result in a shrinkage effect.

4.0 DESIGN RECOMMENDATIONS

The following design recommendations have been developed on the basis of the previously described project characteristics and subsurface conditions encountered. If there are any changes in the project criteria, this office should be notified immediately and a review made by DPTL to determine if any modifications in our recommendations would be required. The following conclusions and recommendations are based on our observations at the site, interpretation of the field data obtained during this exploration, and our experience with subsurface conditions. Subsurface conditions in unexplored locations may vary somewhat from those encountered in our investigation. If the structure location is changed from the previously mentioned understood proposed location, we request that we be notified immediately so that we may reevaluate our recommendations.

4.1 Proposed Construction

As mentioned previously, our understanding and knowledge of this project is based on information provided by Owen Kramme of Formative Architecture. We were issued a site plan of this project prior to drilling and sampling.

We understand this project consists of the construction of structural foundations for the childhood center addition structure. It is our belief that the typical construction of a structure of this nature should be supported by spread footings for the walls. Information concerning structural loads was not provided at the time this report was prepared therefore a value of 2,000 plf for the walls was estimated for report purposes only.

4.2 Spread Footings

For maximum load estimated to be 2,000 plf for the walls, the spread footings may be founded 2' below the existing soil grade and be sized based on an allowable in-place bearing capacity value of 2,000 pounds per square foot (psf) after the select fill material placement has been completed and accepted.

4.3 General Conclusions

The most significant soil related factors for design of the lightly loaded structure at this site are the bearing capacities of the soil layers and their expansion. The soils present at the site are moderate in plasticity and shallow foundations supported on these soils could be subject to movements due to moisture fluctuations in these soils. The most positive means to reduce the potential for foundation movement would be to support the proposed structure on a foundation system bearing below the freeze/thaw zone which for this area is considered 18-inches and on the recommended select fill material. It is recommended that the minimum depth for a foundation bearing depth be 24-inches below the finished exterior grade to protect against freeze/thaw only.

5.0 CONSTRUCTION RECOMMENDATIONS

All areas around the structure should be designed to prevent migration of water into the soils beneath the structure and other flatwork sensitive to movement. No excessive saturation or drying of soils around the foundations should be allowed to occur.

5.1 Site Preparation

- A. This site should be prepared by removing and clearing any mulch, concrete, loose soils and organic topsoils.

5.2 Subgrade Preparation

- A. The top 6-inches of in-place soil should be plowed or scarified, processed to near optimum moisture content ($\pm 2\%$), and compacted to at least 95% of maximum dry density as determined by a standard proctor (ASTM Designation D698) when tested in accordance with ASTM Designation D6938.
- B. The site should be proof rolled to detect soft areas which should be removed and properly replaced, processed, and recompacted to 95% of standard proctor maximum dry density (ASTM D698) and $\pm 2\%$ of optimum moisture content when tested in accordance with ASTM Designation D6938.
- C. Subgrade should be tested by a qualified laboratory technician under the supervision of a registered professional engineer specializing in geotechnical studies.

5.3 Foundation Preparation

- A. All select fill material should have a Plasticity Index of 4-15 and should be placed in 8-inch loose to 6-inch maximum compacted lifts. All soil for select fill material should be free of large rock (larger than 2") or other deleterious material and should be processed to near optimum moisture content ($\pm 2\%$) and compacted to a minimum of 95% of maximum dry density as determined by a standard proctor (ASTM Designation D698) and when tested in accordance with ASTM Designation D6938. Each lift must be tested and accepted prior to placing the next lift. The Plasticity Index and Liquid Limit of material used as select, less-expansive fill should be routinely verified during fill placement using laboratory tests. Visual observation and classification should not be relied upon to confirm

the material to be used as select, less-expansive fill satisfies the above Atterberg Limits criteria.

- B. The site should be proof rolled to detect soft areas which should be removed and properly replaced to 95% of standard proctor maximum dry density (ASTM D698) and $\pm 2\%$ of optimum moisture content when tested in accordance with ASTM Designation D6938.
- C. Due to the placement of select fill material, differing amounts of settlement can occur. This settlement can be as low as $\frac{1}{2}$ percent ($1/2\%$) for shallow amounts less than 3 feet to as much as $1\frac{1}{2}$ percent ($1\frac{1}{2}\%$) for thicknesses greater than 3 feet. Due to the amount of soil placement the designer should take into account measures necessary to reduce the amount of settlement.
- D. Each lift should be tested by a qualified laboratory technician under the supervision of a registered professional engineer specializing in geotechnical studies.
- E. The top 2-inches of fill should be sand, or other free draining soil, in the area beneath the slab. The sand cushion or other free draining soil, should be damp and compacted prior to placing the fresh concrete, and should have a Plasticity Index of 8 or less.
- F. Structural concrete should be placed as soon as possible when the soil preparation is completed.

5.4 Recommended Minimum Sampling and Testing Frequencies

It is recommended that the site preparation, foundation construction and floor slab construction be monitored by the geotechnical engineer or his representative. Following are recommended minimum sampling and testing frequencies.

Earthwork

- At least one moisture-density (proctor) test, Atterberg Limits test and percent finer than #200 sieve test should be performed per each soil type such as subgrade and select fill material.
- In the proposed structure area at least 1 density and moisture content test per 2,000 square feet of surface area should be performed on the subgrade soils and at least 1 density and moisture content test per 2,000 square feet of surface area should be performed for each compacted 6-inch thick layer of select fill material. Testing backfill trenches should be at least 1 density and moisture content test per 100 linear feet of trench per 6-inch compacted backfill thickness.
- A minimum of two (2) density and moisture content tests should be performed in the structure area on the subgrade soils and a minimum of two (2) density and moisture content tests should be performed per 6-inch compacted thickness of select fill material in the structure area. Testing of backfilled trenches should be at least 1 density and moisture content test per 100 linear feet of trench per 6-inch compacted backfill thickness.
- It is imperative that a qualified field technician be on-site during all soil processing and placement.

Concrete

- At least 1 slump, air content and temperature test should be performed per 50 cubic yards of each type of concrete placed each day including when concrete test cylinders are molded.
- At least 1 set of 4 concrete test cylinders should be molded for each type of concrete per 50 cubic yards or fraction thereof placed in a day.
- Each set of cylinders should be tested for compressive strength with 2 of the cylinders tested at 7 days and 2 of the cylinders tested at 28 days.
- Reinforcing steel should be checked for size of placement prior to concrete placement.

Foundations

- The dimensions of each foundation including reinforcing steel size and placement should be checked.
- The bearing material at each foundation should be checked to verify that the materials are suitable for foundation support.

6.0 PAVEMENT

The material encountered near the existing ground surface will probably constitute the subgrade for the parking and drive areas as it is our belief the civil drawings probably will not include fill material over the pavement areas of the site before flexible base is placed. Again, it is our belief fill material probably will not be required over the site for the pavement areas to achieve proper drainage due to the existing site elevations because the existing grade is close to the proposed grade. Therefore, it is recommended these subgrade materials need not be improved prior to construction of the pavement areas is not required. If fill material is required, it is recommended that the fill material be select fill type material. If it is not select fill type material, the top 6" (before flexible base) should be stabilized with enough lime to reduce the PI to 15 or less. Due to the wide spacing of the borings, division of the site into areas with similar subgrade conditions was not possible. Delineation of areas with similar subgrade conditions, if required, should be performed during construction after the subgrade material has been exposed. The specific type of improvement procedures required in given access drive and turnaround areas will be dependent upon the type of material present after final elevation has been achieved.

Recommendations for the required pavement thickness are based only on the physical and engineering properties of the materials and conventional thickness determination procedures. Pavement joining the structure should be constructed with a curb and the joint between the structure and curb should be sealed. Related civil design factors such as subgrade drainage, shoulder support, cross-sectional configurations, surface elevations, joint design and environmental factors will significantly affect the service life and must be included in preparation of the construction drawings and specifications, but were not included in the scope of this study. Normal periodic maintenance will be required for all pavement to achieve the design life of the pavement system.

If after achieving final soil elevation in the parking and drive areas before flexible base placement the soils possess PI values greater than 15, it is recommended the exposed surface of the soil be scarified to a depth of 6 inches and mixed with hydrated lime. The actual amount of lime required should be confirmed by additional laboratory testing but should be enough to reduce the PI to less than 15.

1. It is recommended the stabilization procedures extend at least 1 foot beyond the edge of the pavement to reduce effects of seasonal shrinking and swelling upon the extreme edges of pavement. The soil stabilization mixture should be compacted to at least 100 percent of standard proctor maximum dry density (ASTM D698) and within the range of 0 to +4 percentage points above the mixture's optimum moisture content.
2. In all areas where stabilization is used to stabilize the final soil, routine Atterberg Limit tests should be performed to assure the resulting Plasticity Index of the mixture is at/or below 15.

Light Duty Pavement

2.0 inches		Hot-Mix Asphaltic Concrete – Asphalt Institute MS-2 Sixth Edition Medium Traffic Marshall (50 Blows)
8.0 inches		Flexible Base – NMDOT Division 303
6.0 inches		Scarified, Stabilized (if necessary) and Recompacted Subgrade
	OR	
6.0 inches		Portland Cement Concrete (15-foot joint spacing)
4.0 inches		Flexible Base – NMDOT Division 303
6.0 inches		Scarified, Stabilized (if necessary) and Recompacted Subgrade

		<u>Heavy Duty Pavement (Truck Traffic Area)</u>
2.0 inches		Hot-Mix Asphaltic Concrete - Asphalt Institute MS-2 Sixth Edition Medium Traffic Marshall (50 Blows)
3.0 inches		Hot-Mix Asphaltic Concrete - Asphalt Institute MS-2 Sixth Edition Heavy Traffic Marshall (75 Blows)
8.0 inches		Flexible Base - NMDOT Division 303
6.0 inches		Scarified, Stabilized (if necessary) and Recompacted Subgrade
	OR	
8.0 inches		Portland Cement Concrete (15-foot joint spacing)
8.0 inches		Flexible Base - NMDOT Division 303
6.0 inches		Scarified, Stabilized (if necessary) and Recompacted Subgrade

6.1 Portland Cement Concrete Pavement Specifications

Pavement should be specified, constructed and tested to meet the following requirements:

1. Portland Cement Concrete: NMDOT Division 450. Specify a minimum compressive strength of 4,000 pounds per square inch (psi) at 28 days. Concrete should be designed with 5 ± 1 percent total air content.
2. The subgrade should be compacted to at least 100% of standard proctor maximum dry density (ASTM D698) and within $\pm 2\%$ if not stabilized or 0-+4% if stabilized of the material's optimum moisture content.
3. The flexible base should be placed in two (2) equal lifts for the heavy-duty section. Each lift should be compacted to a minimum of 100% and within $\pm 2\%$ of optimum moisture content as determined by ASTM D698. The first lift must be tested and accepted prior to placement of the next lift.

6.2 Hot-Mix Asphaltic Concrete Pavement Specifications

Pavement should be specified, constructed and tested to meet the following requirements:

1. Proven and accepted Asphalt Institute MS-2 Sixth Edition Table 5.2 Hot Mix Asphaltic Concrete Marshall Heavy Traffic (75 Blows) and Medium Traffic (50 Blows) Course.
2. The subgrade should be compacted to at least 100% of standard proctor maximum dry density (ASTM D698) and within $\pm 2\%$ if not stabilized or 0-+4% if stabilized of the material's optimum moisture content.
3. The flexible base should be placed in two (2) equal lifts. Each lift should be compacted to a minimum of 100% and within $\pm 2\%$ of optimum moisture content as determined by ASTM D698. The first lift must be tested and accepted prior to placement of the next lift.
4. The hot-mix asphaltic concrete shall be compacted to a minimum of 92% (8% air voids) but a maximum of 97% (3% air voids) of maximum theoretical specific gravity. The density must be field verified by cores.

Pavement and other flat work will have the same potential for movement as slabs constructed directly on the existing soils. Therefore, good perimeter surface drainage with a minimum slope of 2 percent away from the pavement is recommended. Normal maintenance of pavement should be expected over the life of the structures. Pavement surfaces should be maintained to help minimize surface ponding and to provide rapid sealing of any developing cracks. These measures will help reduce infiltration of surface water downward through the pavement section.

7.0 EXCAVATION SAFETY CONSIDERATIONS

If utility trenches or other excavations extend to or below a depth of 5-foot below construction grade, the contractor or others shall be required to develop a trench safety plan to protect personnel entering the trench or trench vicinity. The collection of specific geotechnical data and the development of such a plan which could include designs for sloping, benching or various types of temporary shoring, is beyond the scope of the current study. Any such designs and safety plans shall be developed in accordance with current OSHA guidelines and other applicable industry standard. The soils at the depths needed for excavation are classified as cohesive. The maximum allowable slope for excavations less than 5-feet are 3H:1V for a short term for the cohesive soils.

It is important for the design geotechnical engineer to be allowed to observe the excavations to make a determination as to the quality and competency of the soil materials. If sandy or clayey

material is observed not to be stable at a 1 horizontal to 1 vertical slope or if large pockets of non-cohesive soils are encountered, the excavations may require being sloped even more gentle. If any sloughing subsidence or tension cracks are observed in the soil, the contractor should stop all work and notify the design geotechnical engineer.

8.0 QUALIFICATION OF RECOMMENDATIONS

The recommendations in this report were developed from the information obtained from the test borings which give subsurface conditions only at the specified depths, the specified times of the boring logs and that there are no pre-existing deep excavated areas that have been backfilled on this site. It is also assumed that the moisture levels encountered at this site will not be permitted to materially increase over those shown on the logs. In addition, the laboratory test results for selected soil and rock samples relate only to the samples tested. Rock and soil conditions at other locations may vary from the indicated conditions and the nature and extent of the variations may not become noticeable until the course of construction. If variations do appear, it will be necessary to re-evaluate the recommendations of this report after making notes of all the variations. Also, if any changes occur in the proposed construction, including site location, this office should be notified so a review can be made.

It is important that a geotechnical engineer be retained to review the specifications and plans and also for testing and observations during the foundation construction and earthwork phases of the proposed construction to help confirm the design requirements are fulfilled.

Our professional geotechnical services have been performed, our findings logged and our report prepared in accordance with generally accepted geotechnical engineering practices. This warranty is in lieu of all other written warranties either expressed or implied. This report shall not be reproduced except in its entirety and with the express written permission of Dyess-Peterson Testing Laboratory, Inc.

APPENDICES

APPENDIX A – TEXT FIGURES

- | | |
|----------|-------------------------|
| Figure 1 | Site Location Map |
| Figure 2 | Location of Borings Map |

APPENDIX B – FIELD RESULTS

- Records of Subsurface Exploration Sheets
Key to Symbols and Classifications – Soil and Rock

APPENDIX A – TEXT FIGURES

Figure 1
Figure 2

Site Location Map
Location of Borings Map



Figure 1

Project:

DPTL No.

Site Location Map

Portales Municipal Schools District L.L. Brown Early
Childhood Center – Portales, New Mexico

4815



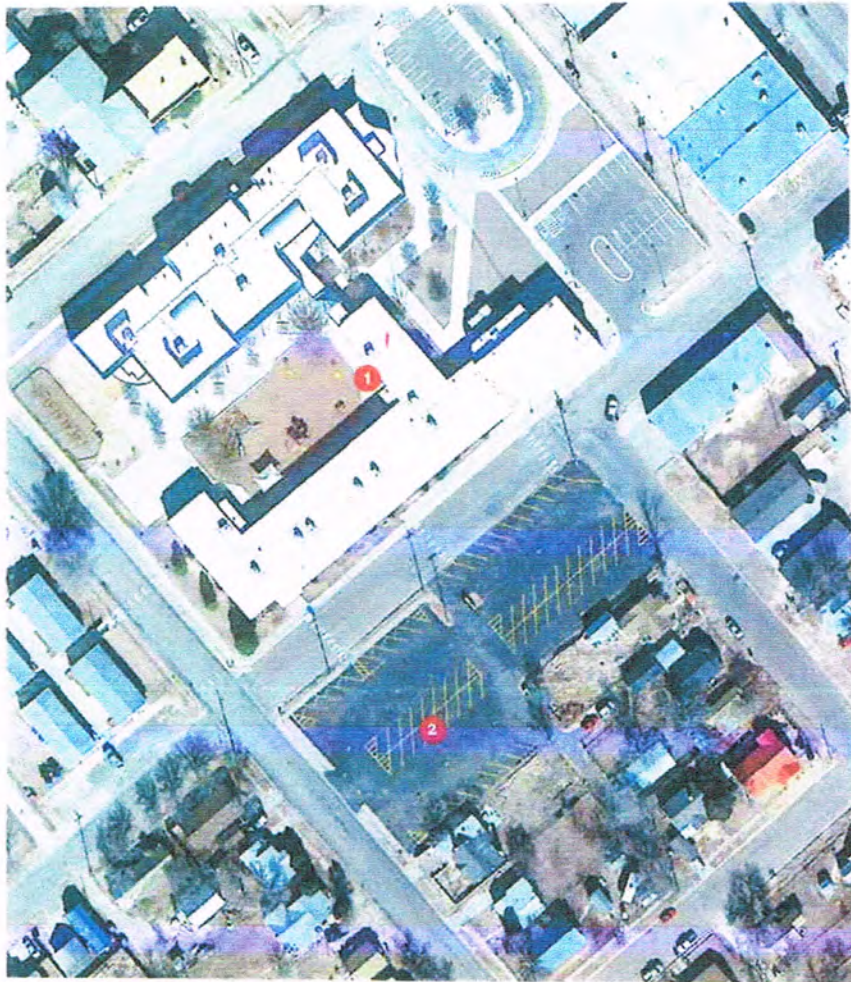


Figure 2

Project:

DPTL No.

Location of Borings Map

Portales Municipal Schools District L.L. Brown Early
Childhood Center – Portales, New Mexico

4815



APPENDIX B – FIELD RESULTS

Records of Subsurface Exploration Sheets
Key to Symbols and Classification – Soils and Rock

- 4. In submitting this Bid, the Bidder represents, as more fully set forth in the Agreement, that:
 - A. the Bidder has examined copies of all the Bidding Documents and of the following Addenda (receipt of all of which is hereby acknowledged):

No. _____ Title: _____ Date: _____

No. _____ Title: _____ Date: _____

No. _____ Title: _____ Date: _____

No. _____ Title: _____ Date: _____

No. _____ Title: _____ Date: _____

No. _____ Title: _____ Date: _____

- B. the Bidder has familiarized himself with the nature and extent of the Bidding Documents, Work, site, locality, and all local conditions, laws, and regulations that in any manner may affect cost, progress, performance, or furnishing of the Work;

- C. the Bidder has carefully studied all reports and drawings of subsurface conditions which are identified in the Information Available to Bidders and accepts the determination set forth in the Information Available to Bidders of the extent of the technical data contained in such reports and drawings upon which the Bidder is entitled to rely;

- D. the Bidder has correlated the results of all such observations, examinations, investigations, explorations, tests, reports, and studies with the terms and conditions of the Bidding Documents;

- E. the Bidder has given the Architect/Engineer written notice of all conflicts, errors, and discrepancies that he has discovered in the Bidding Documents, and the written resolution thereof by the Architect/Engineer is acceptable to the Bidder;

- F. this Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation; the Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; the Bidder has not solicited or induced any person, firm, or corporation to refrain from bidding; and the Bidder has not sought by collusion to obtain for himself any advantage over any other Bidder or over the Owner;

- G. the Bidder acknowledges that he has attended any mandatory pre-bid conference scheduled by the Owner and/or the Architect/Engineer pertaining to this project;

- H. the Bidder agrees to show clearly on the envelope in which the Bid is submitted the Project Name and Number and Invitation to Bid Number; and,

- I. the Bidder will complete the Work for the following price(s) (**do not include any gross receipts tax in the price(s)**).

- 5. Bids shall be presented in the form of a total Base Bid proposal under a Lump Sum Contract plus Bid Lots that are selected by the Owner. A bid must be submitted on all bid items and alternates; segregated bids will not be selected by the Owner.

BASE BID - Renovation of Nine Pre-K Classrooms (All work not included in Bid Lot 1, 2, 3, & 4)

(please use typewriter or print legibly in ink) (use words):

(\$ _____)

BID LOT 1 – System Upgrades to a Majority of the existing School:

(please use typewriter or print legibly in ink) (use words):

(\$ _____)

BID LOT 2 – Exterior Door Replacement:

(please use typewriter or print legibly in ink) (use words):

(\$ _____)

BID LOT 3 – Repave Parking Lot, Site Lighting, Site Drainage, and Walkways:

(please use typewriter or print legibly in ink) (use words):

(\$ _____)

BID LOT 4 – Items Outside Property Line (Above Adequacy):

(please use typewriter or print legibly in ink) (use words):

(\$ _____)

All specific cash allowances are included in the price(s) set forth above.

6. The Bidder agrees that:

A. The Work to be performed under this Contract shall be commenced not later than ten (10) consecutive days after the date of written Notice to Proceed, and that Substantial Completion shall be achieved not later than 395 days after the date of written Notice to Proceed, except as hereafter extended by valid written Change Order by the Owner.

B. Should the Contractor neglect, refuse, or otherwise fail to complete the Work within the time specified, the Contractor agrees to pay to the Owner in partial consideration for the award of this Contract the amount of one thousand five hundred Dollars (\$1,500) per consecutive day, not as a penalty, but as liquidated damages for such breach of the Contract.

C. The above prices shall include all labor, materials, removal, overhead, profit, insurance, taxes (not including gross receipts tax), etc., to cover the finished work of the several kinds called for. Changes shall be processed in accordance with the Contract Documents.

D. It is understood that the Owner reserves the right to reject any or all Bids and to waive any technical irregularities in the bidding.

7. The following documents are attached to and made a condition of this Bid:

- A. Bid Security with Agent's Affidavit;
- B. Subcontractors Listing; and,
- C. Other (list):

8. The terms used in this Bid and the Bidding and Contract Documents which are defined in the Conditions of the Construction Contract (General, Supplementary, and Other Conditions), included as part of the Bidding Documents, have the meanings assigned to them in those Conditions.

9. The Bidder is a(n):

A. INDIVIDUAL;

By: _____
(Individual's Signature)

Doing business as: _____

Business address: _____

Telephone: (____) _____

FAX: (____) _____

B. PARTNERSHIP:

By: _____
(Firm Name)

(General Partner's Signature)

Business address: _____

Telephone: (____) _____

FAX: (____) _____

C. CORPORATION:

Corporation Name: _____

State of Incorporation: _____

By _____ Title: _____
(Print Name of Person Authorized to Sign)

* _____
Signature of Authorized Person

If a New Mexico Corporation: _____
NM Certificate of Incorporation Number

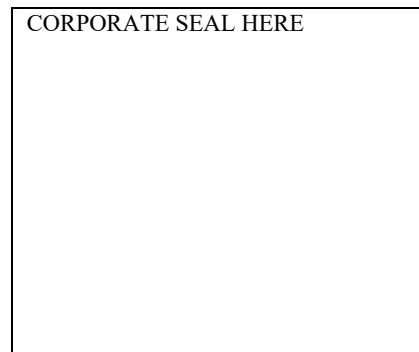
If a Foreign Corporation: _____
NM Certificate of Authority Number

Attest (Secretary): _____

Business address _____

Telephone: (____) _____

FAX: (____) _____



or,

D. JOINT VENTURE:

By _____
(Name)

Address: _____

Telephone: (____) _____

FAX: (____) _____

By _____
(Name)

Address: _____

Telephone: (____) _____

FAX: (____) _____

By _____
(Name)

Address: _____

Telephone: (____) _____

FAX: (____) _____

Each Joint Venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated in the appropriate category.

BIDDER MUST FILL IN THE FOLLOWING (if none, write none)

NM License Number _____ License Classification: _____

Dept. of Workforce Solutions Minimum Wage Act Registration Number
(DWS #) _____

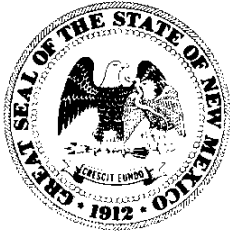
Resident Contractor's Preference Number: _____

OR

Veteran Contractor's Preference Number: _____

Please attach a copy of your valid preference certificate to the Bid Form.

AGENT'S AFFIDAVIT



THIS FORM MUST
BE USED BY
SURETY

(To be filled in by Agent)

STATE OF _____)
) ss.
COUNTY OF _____)

_____, being first duly sworn, deposes and says
that he /

she is the duly appointed agent for
and is
licensed in the State of New Mexico.

Deponent further states that a certain bond was given to indemnify the State of New
Mexico in connection with the construction of

dated the _____ day of _____, 20____, executed by
Contractor, as principal, and _____, as surety, signed by
this Deponent; and Deponent further states that said bond was written, signed, and
delivered by him/her; that the premium on the same has been or will be collected by
him/her; and that the full commission thereon has been or will be retained by him/her.

Subscribed and sworn to before me, a notary public in and for the County of,
, this _____ day of _____, 20____.
Notary Public

My Commission Expires:

AGENT'S ADDRESS:

Telephone

**COMBINED
LIST OF SUBCONTRACTORS
and
ASSIGNMENT OF ANTITRUST CLAIMS
by
CONTRACTOR, SUBCONTRACTORS,
SUBSUBCONTRACTORS, and SUPPLIERS**

EXAMPLE TRADES AND SUPPLIERS: SITE WORK, CONCRETE, MASONRY, FRAMING, LUMBER, STEEL, STEEL FABRICATION, ROOFING, EXTERIOR INSULATION AND FINISH, DRYWALL, DOORS, GLASS AND GLAZING, PLASTER, PAINTING, CARPET, RESILIENT, CONVEYING SYSTEMS, HVAC, CONTROLS, PLUMBING, SHEET METAL, ELECTRICAL

1. Subcontractor Listing shall be included with Bid as a condition of the Bid and be fully complete with regards to all Subcontractors providing services valued at \$5,000.00 or more, or one-half of one percent of the architect's or engineer's estimate of the total project cost, not including alternates, whichever is greater pursuant to Section 13-4-34, NMSA 1978.

Listing Threshold for this Project: \$238,266.95

a. Subcontractor Listing shall be expanded after Bid by apparent low bidder if Awarded, and before Contract, to include major Suppliers and, each entity listed shall be signed by individual empowered to obligate Supplier, Subcontractor, or Subsubcontractor.

b. Subcontractor Listing shall also be expanded after Bid by apparent low bidder if Awarded, and before Contract, to include the Department of Workforce Solutions labor enforcement fund registration number. See the Department of Workforce Solutions web site at www.dws.state.nm.us under "Public Works" for registration form, listings and information.

c. See Instructions to Bidders, Section 00 2113 Paragraph 4.5, Subcontractors, for rules regarding changes in this list after bidding.

PROJECT NAME: BROWN EARLY CHILDHOOD CENTER PRE-K AND SYSTEMS PROJECT

INVITATION TO BID NUMBER: 20-21-0001

The undersigned agrees that any and all claims which the firm may have or may inure to it for overcharges resulting from antitrust violations as to goods, services, and materials purchased in connection with the above-referenced project are hereby assigned to the Owner, but only to the extent that such overcharges are passed on to the Owner. It is agreed that the firm retains all rights to any such antitrust claims to the extent of any overcharges not passed on to the District, including the right to any treble damages attributable thereto.

INVITATION TO BID NUMBER:

20-21-0001

Sealed bid opening date:

03/22/2021 @ 4:00 P.M. MST

PORTALES MUNICIPAL SCHOOLS

Subcontractor Listing

*Signature not required until after Bid but before Award

TYPE OF WORK	ENTITY NAME	CITY & STATE	Labor enforcement fund registration # (if over \$60,000)	SIGNATURE *
SITE WORK				
CONCRETE				
MASONRY				
FRAMING				
STEEL ERECTION				
ROOFING				
INSULATION				
DRYWALL				
GLAZING				
PLASTER				
FLOORING				
PAINTING				
FURNISHINGS				
LANDSCAPE				
ELEVATOR				
HVAC				
CONTROLS				
PLUMBING				
ELECTRICAL				
SPECIAL SYST.				

PREQUALIFICATION

GENERAL

The Contractor represents to the Owner that the Contractor:

1. is financially solvent, able to pay debts, and has sufficient working capital to complete the Work;
2. is able to furnish the plant, tools, materials, supplies, equipment, skilled labor and sufficient experience and competence required to complete the Work equal to or exceeding industry standards;
3. shall, prior to bid, be properly licensed according to the requirements of the Construction Industries Licensing Act, Chapter 60, Article 13 NMSA 1978 and ensures to the Owner that such license shall remain in effect for the duration of the Work and warranty periods that the Contractor is authorized and properly licensed to do business in the State of New Mexico and in the locale where the Work is located;
4. execution of the agreement and performance thereof is within the Contractor's duly authorized powers; and
5. or assigns have visited the site of Work and has become familiar with the conditions under which the Work is to be performed, obtained all available information and have correlated observations and acquired information with the requirements of the Contract Documents including conditions:
 - a) bearing upon access to the site, accommodations required, transportation, disposal, handling and storage;
 - b) affecting availability of labor, materials, equipment, water, electricity, utilities and roads;
 - c) such as weather, river stages, flooding;
 - d) related to the apparent form and nature of the Work site, including the surface and sub-surface conditions; and,
 - e) that in general would be deemed by a prudent contractor to be material to the Work as to assess risk, contingencies and other circumstances;
6. has completed prior contracts with diligent and continuous effort and has been responsive to post-occupancy corrections.

PREQUALIFICATION FORMS

Not required.

DEBARRED OR SUSPENDED CONTRACTORS

A business (contractor, subcontractor, or supplier) that has either been debarred or suspended pursuant to the requirements of Sections 13-1-177 through 13-1-180 and 13-4-11 through 13-4-17, NMSA 1978 as amended, shall not be permitted to do business with the State and shall not be considered for award of contract during the period for which it is debarred or suspended.

Return completed form to address below:

State of New Mexico, PSFA
Contracts Administrator
1312 Basehart Road, SE
Suite 200
Albuquerque, NM 87106
Phone (505) 843-6272
Fax: (505) 988-5933

Form available on PSFA web site at:

http://www.nmpsfa.org/pdf/Admin/W9_Vendor_Authorization_Form.pdf



STATE OF NEW MEXICO
Taxation and Revenue Department



APPLICATION FOR PREFERENCE

GENERAL INSTRUCTIONS PLEASE READ BEFORE COMPLETING

Sections 13-1-21 and 13-1-22 NMSA 1978 authorize and set forth the criteria required for a business to qualify as a Resident Business or Resident Contractor. It is important to note, a resident preference is applicable to contracts, which typically call for, but are not limited to, the furnishing of tangible personal property, i.e. goods, supplies, materials, equipment, printed materials and certain services.

A "resident preference" is applicable only to procurements made pursuant to a formal bid process or formal Request For Proposals (RFP) process in accordance with Sections 13-1-21 and 13-4-2 NMSA 1978. Additionally, any person, firm, corporation, or other legal entity must have all required licenses at the time the application for preference is submitted to the Taxation and Revenue Department for consideration.

Please note: All certifications are subject to revocation in accordance with applicable rules. A certification merely establishes that the Taxation and Revenue Department has determined based upon the information provided in the application, as of the date of issuance, that the holder was entitled to treatment as a resident business and/or contractor by state agencies and local public bodies.

The attached application for preference is required by Section 13-1-22 NMSA 1978 as amended during the First Special Legislative Session of 2011. The application includes an **affidavit from a certified public accountant** setting forth certain eligibility criteria for businesses or contractors, as required by Section 13-1-22 NMSA 1978. The completed **application along with payment of Thirty Five (\$35) dollars** must be submitted to the Taxation and Revenue Department prior to issuance of a resident business preference or a resident contractor preference certificate.

In addition to the application, the Taxation and Revenue Department may require submission of additional information to ensure eligibility.

A certificate is valid for three (3) years from the date of its issuance; provided that if there is a change of ownership of more than fifty percent, a resident business or resident contractor shall reapply.

For questions concerning the application process please call (505) 827-0951. The application along with payment should be sent to:

New Mexico Taxation and Revenue Department
Santa Fe District Office
PO Box 5374
Santa Fe, NM 87502-5374



STATE OF NEW MEXICO
Taxation and Revenue Department



APPLICATION FOR RESIDENT VETERAN CONTRACTOR CERTIFICATION

SECTION I			General Information		
Name of Licensed Contractor		Doing Business As (DBA) if applicable			
Mailing Address - City, State, Zip Code					
Physical Address - City, State, Zip Code					
Name of Business Owner or Officer		Phone Number of Business Owner or Officer		E-mail of Business Owner or Officer	
Name of Business Contact		Phone Number of Business Contact		E-mail of Business Contact	
NM(CRS) Number:			Contractor License Number		FEIN/SSN
VIN of Vehicle Registered by Contractor with New Mexico			Name of Vehicle Owner		
SECTION II			Resident Veteran Contractor Status Information		
<p>Please choose the relevant business status category below and place a checkmark next to all statements that apply to the applicant's business under the relevant category. If any statement under the relevant category is not appropriate to or does not otherwise describe the applicant's business, it may not qualify for certification.</p>					
Existing Contractor					
<input type="checkbox"/> The contractor has been in existence for at least five years; and <input type="checkbox"/> The contractor is licensed as a contractor in New Mexico; and <input type="checkbox"/> The contractor has paid property taxes or rent on real property in New Mexico in <i>each</i> of the preceding five years; and <input type="checkbox"/> The contractor has paid at least one other tax administered by the State of New Mexico in <i>each</i> of the preceding five years; and <input type="checkbox"/> The contractor has paid unemployment insurance on at least three full-time New Mexico resident employees in <i>each</i> of the preceding five years or the contractor has been licensed as a contractor in New Mexico for ten consecutive years.					
New Contractor					
<input type="checkbox"/> The contractor did not exist as a business in any form and has been in existence for less than five years; and <input type="checkbox"/> The contractor is currently licensed as a contractor in New Mexico; and <input type="checkbox"/> The owner or majority of owners of the business have paid property taxes or rent on real property in New Mexico in <i>each</i> of the preceding five years; and <input type="checkbox"/> The owner or majority of owners of the business have paid at least one other tax administered by the State of New Mexico in <i>each</i> of the preceding five years; and <input type="checkbox"/> This contractor has not applied for a Resident Business Certificate or Resident Contractor Certificate during the preceding five years.					
Relocated Contractor					
<input type="checkbox"/> The contractor moved at least eighty (80%) percent of its total domestic personnel from another state to New Mexico in the past five years; and <input type="checkbox"/> The contractor is currently licensed as a contractor in New Mexico; and <input type="checkbox"/> Eighty (80%) percent or more of the total personnel of the business in the prior year were residents of New Mexico; and <input type="checkbox"/> The business has leased real property in New Mexico for ten years; or The business has purchased real property in New Mexico valued in excess of \$100,000.					

Previously Certified Contractor or a Contractor Previously Eligible for Certification			
<input type="checkbox"/> The contractor is licensed as a contractor in New Mexico; and <input type="checkbox"/> After January 1, 2012, but less than three years ago, the contractor obtained and was eligible for resident contractor certification. However, the contractor has since: (1) changed its name; (2) reorganized into one or more different legal entities; or (3) been purchased by or merged with another legal entity, but now operates in New Mexico as substantially the same commercial enterprise;			
OR			
After January 1, 2012, but less than three years ago, the contractor applied and was eligible for resident contractor certification. However, before the Department was able to issue certification, the business: (1) changed its name; (2) reorganized into one or more different legal entities; or (3) was purchased by or merged with another legal entity, but now operates in New Mexico as substantially the same commercial enterprise.			
SECTION III Annual Revenue and Documentation			
Please provide the business' previous year's annual revenues below and attach the required documents. If the required documents are attached, please place a checkmark next to the second statement below. An application submitted without the required information and documentation will be incomplete.			
<input type="checkbox"/> The previous year's annual revenues of the resident veteran business are \$ _____; and <input type="checkbox"/> Attached to this application is verification by the Federal Dept. of Veterans Affairs that the business is either a veteran-owned small business or a service-disabled veteran-owned small business;			
OR			
Attached to this application is proof that a veteran or veterans own a majority of the business and verification of either (1) veteran status as indicated by the U.S. Dept. of Defense DD Form 214 of release or discharge from active duty with an honorable discharge or (2) service disabled-veteran status by the Dept. of Veterans Affairs.			
AND			
<input type="checkbox"/> Any applicant provided a certificate of Resident Veterans Preference by the Taxation and Revenue Department as either a business or a contractor under the provisions of Sections 13-1-21 or 13-1-22 NMSA 1978, agrees that when awarded a contract involving a Veterans Preference during the last calendar year beginning on January 1 and ending on December 31, to report the award amount involved to the State Purchasing Division of the General Services Department. The report will be given under the penalty of perjury and indicate whether the awarded amount was as a purchase from a public body, or as a public works contract from a public body, as the case may be.			
SECTION IV Affidavit			
AFFIDAVIT FROM CERTIFIED PUBLIC ACCOUNTANT			
STATE OF _____ COUNTY OF _____		I hereby swear, <u>under oath</u> that it is my professional opinion that the applicant meets the required criteria set forth in NMSA 1978, Section 13-1-22 (2012) for Resident Veteran Business Certification and that ALL information provided and ALL checkmarked statements in the foregoing application are true and complete to the best of my knowledge.	
Name	CPA License #	State	Date
Signature			
NOTARY			
Subscribed and sworn to before me this _____ day of _____, 20____.			
Notary Public _____ <small>(NOTARY SEAL)</small>		My Commission Expires _____	
I am authorized to sign this application on behalf of the applicant and attest to the truthfulness of the information provided herein.			
Signature of Applicant			Date
Please see last of instructions; APPLICATION AND FEE SUBMISSION for correct mailing address and fee.			

SECTION IV**Affidavit**

This portion of the form is a sworn statement by the CPA indicating that the statements selected in Section II are accurate descriptions of the contractor, and that all other information provided in the form is true and correct to the best of the CPA's knowledge. The affidavit also provides a sworn statement that it is the CPA's professional opinion that the contractor meets the required criteria for resident veteran contractor certification.

The contractor, officer of the contractor business or the contractor's authorized representative must also sign the application, affirming that the statements made and information provided in the application are true and correct.

APPROVALS AND PENALTIES

TRD will examine the application and affidavit. If necessary, TRD may seek additional information to ensure the contractor's eligibility. If TRD determines that the contractor is eligible, it will issue a certificate to the contractor. If TRD determines that the contractor is not eligible, it will issue notification within 30 days. If such notification is not provided by the Department, the application is deemed approved.

A certificate is valid for three years from the date of issuance; provided that if there is a change of ownership of more than 50%, the applicant must reapply. A contractor must also reapply if it has changed its name, reorganized into one or more different legal entities or was purchased by or merged with another legal entity, but now operates in New Mexico as substantially the same commercial enterprise. In such a case, the certification of the contractor in its previous form will apply three years from the date of the previous certification, but only to the extent the contractor was eligible for certification in its previous form.

If an application is denied, the business has 15 days from the date of the denial to file an objection with TRD, submitting evidence to support the objection. TRD must review the evidence and issue a response to the objection within 15 days of the filing of the objection.

If following a hearing and an opportunity to be heard, TRD finds that a contractor provided false information to TRD in order to obtain a certificate or that a contractor used a certificate to obtain a preference and the contractor did not perform the percentage of the contract specified in the bid or proposal, the business:

1. Is not eligible to receive a certificate or preference for a period of five years from the date on which TRD became aware of the submission of the false information or the failure to perform the contract as specified in the bid or proposal; and
2. Is subject to an administrative penalty of up to \$50,000 for each violation.

REVOCATIONS

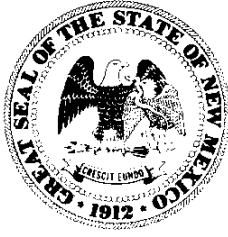
TRD will contemplate revoking an issued certificate if information is revealed that the holder's situation has changed and/or the business does not qualify as a resident veteran contractor. If TRD contemplates revocation, it will issue a Notice of Contemplated Action to the contractor. The contractor will be provided with an opportunity to request an administrative hearing on the matter.

APPLICATION AND FEE SUBMISSION

Submit the application along with \$35 application fee to:

New Mexico Taxation and Revenue Department
Santa Fe District Office
PO Box 5374
Santa Fe, NM 87502-5374

For questions concerning the application process please call (505) 827-0951.



STATE OF NEW MEXICO

PORTALES MUNICIPAL SCHOOLS
In Collaboration With
PUBLIC SCHOOL CAPITAL OUTLAY
PUBLIC SCHOOL FACILITIES AUTHORITY
Santa Fe, New Mexico 87502

MICHELLE LUJAN GRISHAM
GOVERNOR

JOE GUILLEN
CHAIR

JONATHAN CHAMBLIN
EXECUTIVE DIRECTOR
(505) 468-0301

NOTICE OF INTENT TO AWARD

TO:

DATE:

PROJECT: Brown Early Childhood Center Pre-K and Systems Project

PROJECT NO. K-18-011 & S-20-008

ITB REF NO. 20-21-0001

Ladies and Gentlemen:

THIS IS NOT AN AWARD. This letter is to advise you that the Portales Municipal Schools is still considering the offer with the intent to award the Project to you when all considerations and approvals are complete. Without authorizing you to incur any costs or obligation, with the exception of Building Permit Cost, the Portales Municipal Schools would like you to proceed with administrative procedures such as application for Building Permit, submittals and the like in anticipation of the Award and to minimize the time to Project start-up.

OTHER CONDITIONS PRECEDENT (if none, write none)

None

You are reminded that at Notice to Award, but not at this time, you will be asked to produce, along with executed Agreement the following within ten (10) calendar days of that notice:

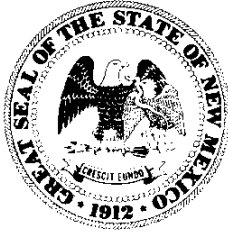
The Performance Bond, Labor and Material Payment Bond; Agent's Affidavit; Subcontractors List including contract amount of each, evidence of required bonds, costs of each bond, and beneficiary of each bond; evidence of DOL registration, evidence of CID licensure; Assignment of Antitrust Claims (required for the Contractor, all Subcontractors, and all Suppliers); Certificate of Insurance; State W-9; evidence of other bonds or documents as specified in the Bidding Documents; and, Schedule of Values.

Prior to the first Payment Application, the Project Schedule will be required and prior to the second Payment Application, a schedule of submittals will be required.

Sarah Stubbs, Director of Finance/CPO
District Representative

Distribution to:

- District Purchasing Agent (original)
- Design Professional of Record (copy)
- PSFA Contracts Administrator (copy)
- Other Bidders (copy)
- Other _____



STATE OF NEW MEXICO

PORTALES MUNICIPAL SCHOOLS
In Collaboration With
PUBLIC SCHOOL CAPITAL OUTLAY
PUBLIC SCHOOL FACILITIES AUTHORITY
Santa Fe, New Mexico 87505

MICHELLE LUJAN GRISHAM
GOVERNOR

JOE GUILLEN
CHAIR

JONATHAN CHAMBLIN
EXECUTIVE DIRECTOR
(505) 468-0301

NOTICE OF AWARD

TO:

DATE:

PROJECT: Brown Early Childhood Center Pre-K and Systems Project

PROJECT NO. K-18-011 & S-20-008

ITB REF NO. 20-21-0001

Ladies and Gentlemen:

This letter is to advise you that the Portales Municipal Schools, in conjunction with the Public School Capital Outlay Council – Public School Facilities Authority (PSFA), approved award of the construction contract to your firm for:

The Contract Price is as follows:

	Description	Amount: (General Contract)	Amount: (Other separate contract)
Base Bid Amount:	9 Pre-K Classrooms	\$	
Bid Lot #01	Systems Based Award	\$	
Bid Lot #02	Exterior Doors	\$	
Bid Lot #03	Parking Lot	\$	
Bid Lot #04	Work outside Property Line	\$	
Total Contract Amount:		\$	

Two (2) counterparts of each of the proposed Contract Documents (except Drawings) will be provided to you by the District for execution. Five sets of the Drawings will be delivered separately or otherwise made available to you by the Design Professional of Record.

You must comply with the following conditions within ten (10) calendar days of the date of this Notice of Award, that is, by

1. You must deliver to the Owner two fully executed counterparts of the Agreement, including all Contract Documents. Each of the Contract Documents must bear your signature on the appropriate page. Provide both your State of New Mexico and Federal Tax Identification Numbers on the signature page.
2. You must deliver with the executed Agreement; the Contractor's Performance Bond, Labor and Material Payment Bond; Agent's Affidavit; Subcontractors List including contract amount of each, evidence of required bonds, costs of each bond, and beneficiary of each bond, evidence of DWS registration, evidence of CID licensure; Assignment of Antitrust Claims (required for the Contractor, all Subcontractors, and all Suppliers); Certificate of Insurance; State W-9; evidence of other bonds or documents as specified in the Bidding Documents; and, Schedule of Values; and,
3. OTHER CONDITIONS PRECEDENT (if none, write none)

Failure to comply with these conditions within the time specified will entitle the Owner to consider your bid abandoned, to annul this Notice of Award, and to declare your bid security forfeited.

Within thirty (30) days after you comply with these conditions, the Owner will return to you one fully signed counterpart of the Agreement with the Contract Documents attached.

You are reminded that prior to the first Payment Application, the Project Schedule will be required and prior to the second Payment Application, a schedule of submittals will be required.

By: _____
SARAH STUBBS, DIRECTOR OF FINANCE/CPO
DISTRICT REPRESENTATIVE
PORTALES MUNICIPAL SCHOOLS

By: _____
JEREMY SANCHEZ
PSFA REGIONAL MANAGER

Distribution to:

- District Purchasing Agent (original)
- Design Professional of Record (copy)
- PSFA Sr. Construction Manager (copy)
- PSFA Contracts Administrator (copy)
- Other _____

Agreement between the Owner and the Contractor

2019 Edition, Version 3.5

THIS DOCUMENT HAS IMPORTANT LEGAL CONSEQUENCES; CONSULTATION WITH AN ATTORNEY IS ENCOURAGED WITH RESPECT TO ITS COMPLETION

Project (short title): Brown Early Childhood Center
Pre-K and Systems Project

Location: Portales, New Mexico

Contract No.:

PSFA Project No.: K-18-022 & S-20-008

Distribution to:



- District Representative (original)
- Contractor (original)
- Design Professional (copy)
- PSFA Regional Manager (copy)
- PSFA Contracts Administrator (copy)
- Other _____

This Agreement entered into this _____ day of _____, 20____, by and between the parties as follows:

THE OWNER:

PORTALES MUNICIPAL SCHOOLS
501 SOUTH ABILENE
PORTALES, NM 88130
Telephone: (575) 356-7000
Fax: (575) 356-4377

THE CONTRACTOR:

(NAME OF FIRM)
(ADDRESS 1)
(ADDRESS 2)
(CITY/TOWN), NM (ZIP CODE)
Telephone: (505) (PHONE)
Fax: (505) (FAX NUMBER)

and, hereinafter "Owner" and,
PSFA IS IS NOT a Co-Owner in this Agreement.

CO-OWNER with OVERSIGHT:

PUBLIC SCHOOL FACILITIES AUTHORITY
1312 BASEHART ROAD, SE
SUITE 200
ALBUQUERQUE, NM 87106
Telephone: (505) (843-6272)
Fax: (505) (843-9681)

DESIGN PROFESSIONAL OF RECORD:

OWEN KRAMME
FORMATIVE ARCHITECTURE
209 GOLD AVE SW
ALBUQUERQUE, NM 87102
Telephone: (505) 510-4600
Fax: NA

RECITALS

WHEREAS The Public School Capital Outlay Council (PSCOC) allocated funding from the Public School Capital Outlay Fund for the above referenced project on _____, 20__;

WHEREAS, the District, otherwise known as the Owner, has entered into Agreement with the PSCOC and its Public School Facilities Authority (PSFA) to act as Co-Owner, oversee and manage the work and make direct payment of Owner-approved expenses;

WHEREAS, the Owner may also oversee and manage the work and make direct payment of Owner-approved expenses in collaboration and agreement with the PSFA;

WHEREAS the Owner, through its School Board, is authorized to enter into a construction contract for the Project pursuant to Sections 13-1-100 and 22-5-4, NMSA 1978; and

WHEREAS the Owner has let this contract according to the established State purchasing procedures for contracts of the type and amount let.

The OWNER and the CONTRACTOR agree as set forth below.

ARTICLE 1

THE CONTRACT DOCUMENTS

The Contract Documents consist of the following:

Bid Form	Notice to Proceed
Agreement Between Owner and Contractor	Conditions of the Contract (General, Supplementary, and Other Conditions)
Performance Bond	Drawings
Labor and Material Payment Bond	Specifications
Agent's Affidavit	All Addenda Issued Prior to and All
Certificate of Insurance	Modifications Issued after Execution
Assignment of Antitrust Claims	of This Agreement
Notice of Award	

These documents form the Contract, and all are as fully a part of the Contract as if attached to this Agreement or repeated herein. An enumeration of the Contract Documents appears in Article 7.

ARTICLE 2

THE WORK

The Contractor shall perform all the Work required by the Contract Documents for the following:

ARTICLE 3

TIME OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

The Work to be performed under this Contract shall commence not later than ten (10) consecutive calendar days after the date of written Notice to Proceed. Substantial Completion shall be achieved not later than **395** calendar days after the date of written Notice to Proceed, except as hereafter extended by valid written Change Order by the Owner.

Should the Contractor neglect, refuse, or otherwise fail to complete the Work within the time specified for Substantial Completion, the Contractor agrees, in partial consideration for the award of this Contract, to pay to the Owner the amount of **One Thousand-Five Hundred Dollars (\$1,500)** per consecutive calendar day, not as a penalty, but as liquidated damages for such breach of this Contract.

ARTICLE 4

CONTRACT SUM

The Owner shall pay the Contractor in current funds for the performance of the Work, subject to additions and deductions by Change Order as provided in the Contract Documents, the Contract Sum of Dollars (\$).

The Contract sum is determined as follows:

	STATE TO ADEQUACY 0.00%	DISTRICT TO ADEQUACY 0.00%	DISTRICT ABOVE ADEQUACY 100.00%	TOTAL
Base Bid Amount	\$ -	\$ -	\$ -	\$ -
Alternates (if any)	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
Award Amount	\$ -	\$ -	\$ -	\$ -
Gross Receipts Tax @ 8.1875%	\$ -	\$ -	\$ -	\$ -
Contract Sum	\$ -	\$ -	\$ -	\$ -

Breakdown of required labor, material and performance and payment bond costs.

Total cost of Contractor bond*\$
 Total cost of all Subcontractor bonds
 Total cost of all project bonds.....\$

*Contractor labor, material and performance and payment bond costs shall be calculated on Award Amount exclusive of GRT.

ARTICLE 5

PROGRESS PAYMENTS

Based upon Applications for Payment submitted to the Design Professional by the Contractor and Certificates for Payment issued by the Design Professional, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided in the Contract Documents for the period ending the last day of the month as follows:

Not later than twenty-one (21) days following the end of the period covered by the Application for Payment of the portion of the Contract Sum properly allocable to labor, materials, and equipment incorporated in the Work and the portion of the Contract Sum properly allocable to materials and equipment suitably stored at the site or some other location agreed upon in writing for the period covered by the Application for Payment, less the aggregate of previous payments made by the Owner; less such amounts as the Design Professional shall determine for all incomplete Work and unsettled claims as provided in the Contract Documents.

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate provided by State statute regulating prompt payment.

ARTICLE 6

FINAL PAYMENT

Final payment, constituting the entire unpaid balance of the Contract Sum, shall be paid by the Owner to the Contractor within thirty (30) calendar days after notification of the Owner by the Design Professional that all incomplete and unacceptable work that was noted during the Substantial Completion Inspection and listed on the attachment to the Certificate of Substantial Completion has been corrected, and provided the Contract has been fully performed, a Certificate for Final Completion and final Certificate for Payment has been issued by the Design Professional; and the Contractor has provided to the Owner a certified statement of Release of Liens (AIA Document G706A or approved form) and Consent of Surety and such other documents required by the General Conditions.

ARTICLE 7

GENERAL AND SPECIAL PROVISIONS

7.1 This document shall be executed in no less than five (5) counterparts, each of which shall be deemed an original.

7.2 Owner Provided Insurance. The Owner will not provide Builder's Risk.

7.2.1 Property Insurance/Builder's Risk. Contractor shall provide insurance which will protect the interests of the Contractor and Subcontractors in the Work. Such property insurance shall be maintained,

unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, or until no person or entity other than the Owner has an insurable interest in the property required by this Paragraph to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, and Subcontractors in the Project.

7.3 This Agreement shall be governed exclusively by the provisions hereof and by the laws of the State of New Mexico as the same from time to time exist.

7.4 Terms used in this Agreement which are defined in the Conditions of the Contract shall have the meanings designated in those Conditions.

7.5 As between the parties to this Agreement: As to all acts or failures to act by either party to this Agreement, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the relevant Date of Substantial Completion of the Work; and as to any acts or failures to act occurring after the relevant Date of Substantial Completion, not later than the date of the Owner's approval of the Final Certificate of Payment.

7.6 The Contractor shall hold harmless and indemnify the Owner against any and all injury, loss, or damage, including cost of defense - including but not limited to court costs and attorneys' fees - arising out of the negligent acts, errors, or omissions of the Contractor.

7.7 This Agreement shall not become effective until:
A. approved by the Public School Facilities Authority; and,
B. signed by all parties required to sign this Agreement.

7.8 The Contractor and his agents and employees are independent contractors and are not employees of the Owner or the State of New Mexico. The Contractor and his agents and employees shall not accrue leave, retirement, insurance, bonding, use of State vehicles, or any other benefits afforded to employees of the Owner or the State of New Mexico as a result of this Agreement.

7.9 The Contractor, upon Final Payment of the amounts due under this Agreement, releases the Owner, his officers and employees, and the State of New Mexico from his liabilities and obligations arising from or under this Agreement, including but not limited to all damages, losses, costs, liability, and expenses, including but not limited to attorneys' fees and costs of litigation that the Contractor may incur.

7.10 The Contractor agrees not to purport to bind the Owner or the State of New Mexico to any obligation not assumed herein by the Owner or the State of New Mexico unless the Contractor has express written authority to do so, and then only within the strict limits of that authority.

7.11 Notices. All notices herein provided to be given, or which may be given, by either party to the other shall be deemed to have been fully given when made in writing and deposited in the United States mail postage prepaid, in the instance of Notice of Termination of Work, Certified Mail, Federal Express, or similar verifiable delivery method addressed as follows:

OWNER: PORTALES MUNICIPAL SCHOOLS
NAT GOMEZ

501 SOUTH ABILENE
PORTALES, NM 88130

CONTRACTOR: (NAME OF COMPANY)
(ADDRESS 1)
(ADDRESS 2)
(CITY/TOWN), NM (ZIP CODE)

Nothing herein contained shall preclude the giving of any such written notice by personal service. The address to which notices shall be mailed to either party may be changed by written notice given by such party to the other as herein above provided.

7.12 Gender, Singular/Plural. Words of any gender used in this Agreement shall be held and construed to include any other gender, and words in the singular number shall be held to include the plural, unless the context requires otherwise.

7.13 Captions and Section Headings. The captions and section headings contained in this Agreement are for convenience of reference only, and in no way limit, define, or enlarge the terms, scope, and conditions of this Agreement.

7.14 This document shall be executed in no less than five (5) counterparts, each of which shall be deemed an original.

7.15 Certificates and Documents Incorporated. All certificates and documentation required of the Contractor by the provisions of this Agreement shall be attached to this Agreement at the time of execution and are hereby incorporated by reference as though set forth in full in this Agreement to the extent they are consistent with its conditions and terms.

7.16 Separability. If any clause or provision of this Agreement is illegal, invalid, or unenforceable under present or future laws effective during the term of this Agreement, then and in that event it is the intention of the parties hereto that the remainder of this Agreement shall not be affected thereby.

7.17 Waiver. No provision of this Agreement shall be deemed to have been waived by either party unless such waiver be in writing signed by the party making the waiver and addressed to the other party; nor shall any custom or practice which may evolve between the parties in the administration of the terms hereof be construed to waive or lessen the right of either party to insist upon performance by the other party in strict accordance with the terms hereof. Further, the waiver by any party of a breach by the other party of any term, covenant, or condition hereof shall not operate as a waiver of any subsequent breach of the same or any other term, covenant, or condition thereof.

7.18 Entire Agreement. This Agreement represents the entire contract between the parties and, except as otherwise provided herein, may not be amended, changed, modified, or altered without the written consent of the parties hereto. This Agreement incorporates all of the conditions, agreements, and understandings between the parties concerning the subject matter of this Agreement, and all such conditions, understandings, and agreements have been merged into this written Agreement. No prior

condition, agreement, or understanding, verbal or otherwise, of the parties or their agents shall be valid or enforceable unless embodied in this written Agreement.

7.19 Interchangeable Terms. For purposes of all provisions within this Agreement and all attachments hereto, the terms "Agreement" and "Contract" shall have the same meaning and shall be interchangeable.

7.20 Words and Phrases. Words, phrases, and abbreviations which have well-known technical or trade meanings used in the Contract Documents shall be used according to such recognized meanings. In the event of a conflict, the more stringent meaning shall govern.

7.21 Relationship of Contract Documents. The Contract Documents are complementary, and any requirement of one contract document shall be as binding as if required by all.

7.22 Pursuant to Section 13-1-191, NMSA 1978, reference is hereby made to the Criminal Laws of New Mexico (including Sections 30-14-1, 30-24-2, and 30-41-1 through 3, NMSA 1978) which prohibit bribes, kickbacks, and gratuities, violation of which constitutes a felony. Further, the Procurement Code (Sections 13-1-28 through 13-1-199, NMSA 1978) imposes civil and criminal penalties for its violation.

7.23 The Contract Documents, which constitute the entire Agreement between the Owner and the Contractor, are listed in Article 1 and, except for Modifications issued after execution of this Agreement, are enumerated in this Paragraph 7.21.

7.24.1 The following documents bound in the Project Manual dated: **12/10/2019**

DOCUMENTS

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

00 1113	Legal Notice Invitation to Bid
00 1119	Request for Proposal
	Qualifications Questionnaire for General Contractors
	Attachments A Thru K
	Qualifications Questionnaire for Subcontractors
	Attachments A Thru J
00 2113	Instruction to Offerors - Part A
00 2114	Instruction to Offerors - Part B
00 3119	Existing Condition Information
00 3119.01	Hydrant Flow Test Results
00 3119.02	Existing Roof Warranty
00 3119.02	GAF Modification & Repair
00 3126	Existing Hazardous Material Information
00 3126.01	Limited AHERA Asbestos Survey
00 3126.02	Polarized Light Microscopy Asbestos Analysis Report
00 3132	Geotechnical Data
00 3132.01	Geotechnical Soils Investigation
00 4166	Bid Form (Bid Lots)
00 4317	Agent's Affidavit - Bid Bond
00 4334	Listing Form for Submission of Sub contractor Qualifications Questionnaire

00 4336	Combined List of Subcontractors and Assignment of Antitrust Claims
00 4513	Prequalification
00 4553	W-9 Form
00 4556	Application for Resident Preference
00 4557	Application for Veteran Preference
00 5101	Notice of Intent to Award
00 5102	Notice of Award
00 5213	Agreement Between the Owner and Contractor
00 5501	Notice to Proceed
00 6113	Performance Bond
00 6114	Labor and Material Payment Bond
00 6129	Agent's Affidavit – Construction Contract Bonds
00 6131	Bond Review Form – Construction Contract Bonds
00 6212	Letter of Transmittal / Owner-Contractor Agreement
00 6213	Letter of Transmittal / Change Order
00 6216	Certificate of Insurance
00 6360	Modification / Change Request (MCR) Form
00 6361	Modification / Change Request (MCR) Worksheet
00 6363	Change Order
00 6516	Certificate of Substantial Completion
00 6519	Certificate of Final Completion
00 7200	General Conditions of the Contract for Construction
00 7300	Supplementary Conditions
	Wage Rate Determinations
	MCR Policies

SPECIFICATIONS

DIVISION 01 - GENERAL REQUIREMENTS

01 1000	Summary
01 2310	Bid Lots
01 3100	Project Management and Coordination
01 3233	Photographic Documentation
01 3300	Submittal Procedures
01 3301	Submittal Transmittal Form
01 3516	Alteration Project Procedures
01 4000	Quality Requirements
01 5000	Temporary Facilities and Controls
01 5001	PSFA Project Sign
01 5639	Temporary Tree And Plant Protection
01 6300	Product Substitution Procedures
01 6301	Prior Approval Substitution Request Form
01 6302	Contractor Substitution Request Form
01 7000	Execution Requirements
01 7310	Cutting and Patching
01 7500	Starting and Adjusting

01 7700 Closeout Procedures
01 7800 Closeout Submittals
01 7801 Equipment Inventory and Roofing Data Collection
01 7810 Project Record Documents
01 7900 Demonstration and Training

DIVISION 02 - EXISTING CONDITIONS

02 4119 Selective Demolition

DIVISION 03 - CONCRETE

03 3000 Cast-In-Place Concrete

DIVISION 04 - MASONRY

04 2200 Reinforced Unit Masonry

DIVISION 05 - METALS

05 1200 Structural Steel Framing
05 2100 Steel Joist Framing
05 3100 Steel Deck
05 4000 Cold-Formed Structural Metal Framing
05 5000 Metal Fabrications
05 5213 Pipe and Tube Railings

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

06 1000 Rough Carpentry
06 4023 Interior Architectural Woodwork

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

07 2100 Thermal Insulation
07 5423 Thermoplastic-Polyolefin (TPO) Roofing
07 6200 Sheet Metal Flashing and Trim
07 8413 Penetration Firestopping
07 9200 Joint Sealants

DIVISION 08 - OPENINGS

08 1113 Hollow Metal Doors and Frames
08 1416 Flush Wood Doors
08 3113 Access Doors and Frames
08 4113 Aluminum-Framed Entrances And Storefronts
08 4523 Fiberglass-Sandwich-Panel Assemblies
08 7100 Finish Hardware

08 7113 Automatic Door Operators
08 8000 Glazing

DIVISION 09 - FINISHES

09 0170 Maintenance Of Wall Finishes
09 2116 Non-Structural Metal Framing
09 2400 Cement Plaster (Stucco) & Repair of Portland Cement Plaster (Stucco) Wall Assemblies
09 2900 Gypsum Board
09 3000 Tiling
09 5113 Acoustical Panel Ceilings
09 6513 Resilient Base & Accessories
09 6519 Resilient Tile Flooring
09 6813 Carpet Tile
09 7200 Wall Coverings
09 7700 Fiber Reinforced Plastic (FRP) Fabrications
09 9100 Painting

DIVISION 10 - SPECIALTIES

10 1100 Visual Display Surfaces
10 1400 Interior Signage
10 1416 Plaques
10 1416.01 Plaque Information
10 2113.19 Plastic Toilet Compartments
10 2123 Cubicle Curtain And Track
10 2601 Wall and Corner Guards
10 2813 Toilet Accessories
10 4400 Fire Protection Specialties

DIVISION 12 - FURNISHINGS

12 2413 Roller Window Shades

DIVISION 21 - FIRE SUPPRESSION

21 0500 Common Work Requirements for Fire Suppression
21 0503 Trenching and Backfill for Fire Suppression
21 0504 Pipe and Pipe Fittings for Fire Suppression
21 0505 Piping Specialties for Fire Suppression
21 0523 Valves for Fire Suppression
21 0548 Vibration and Seismic Controls for Fire Protection
21 0549 Fire Suppression and Electrical Installation Coordination
21 1313 Fire Protection System, Automatic Wet-Pipe Sprinkler

DIVISION 22 - PLUMBING

22 0500	Common Work Requirements for Plumbing
22 0501	Demolition for Plumbing
22 0503	Trenching and Backfill for Plumbing
22 0504	Pipe and Pipe Fittings for Plumbing
22 0505	Piping Specialties for Plumbing
22 0523	Valves for Plumbing
22 0549	Plumbing and Electrical Installation Coordination
22 0700	Plumbing Insulation
22 1100	Domestic Water Piping
22 1123	Facility Natural Gas System
22 1316	Sanitary Waste and Vent Piping
22 4000	Plumbing Fixtures and Trim
22 6801	Outside Utilities

DIVISION 23 – HVAC

23 0500	Common Work Requirements for HVAC
23 0504	Pipe and Pipe Fittings
23 0505	Piping Specialties
23 0523	Valves
23 0549	HVAC and Electrical Installation Coordination
23 0593	Testing, Balancing and Adjusting for HVAC
23 0700	Mechanical Systems Insulation
23 0810	Performance Assurance Contractor of HVAC Systems
23 0900	Automatic Controls for HVAC Systems
23 3000	Air Tempering System and Equipment
23 7413	Packaged Outdoor Central Station Air Handling Units

DIVISION 26 - ELECTRICAL

26 0500	Common Work Results for Electrical
26 0502	Demolition for Electrical Systems
26 0519	Low Voltage Electrical Power Conductors and Cables
26 0526	Grounding and Bonding for Electrical Systems
26 0529	Hangers and Supports for Electrical Systems
26 0533	Raceway and Boxes for Electrical Systems
26 0543	Underground Ducts and Raceways for Electrical Systems
26 0550	Installation Coordination
26 0553	Identification for Electrical Systems
26 0573	Overcurrent Protective Device Coordination Study
26 0574	Overcurrent Protective Device Arc-Flash Study
26 0800	Electrical Facility Startup/Commissioning
26 0880	Electrical Acceptance Testing
26 0913	Lighting Control Equipment
26 0923	Digital Occupancy & Daylight Management Control System
26 2213	Low Voltage Distribution Transformers
26 2413	Switchboards
26 2416	Panelboards

26 2726	Wiring Devices
26 2813	Fuses
26 2816	Enclosed Switches and Circuit Breakers
26 2820	Ground Fault Protection
26 2913	Enclosed Controllers
26 4313	Surge Protection Devices for Low Voltage Electrical Power Circuits
26 5618	Interior LED Luminaires
26 5619	LED Exterior Lighting

DIVISION 27 – COMMUNICATIONS

27 0500	Common Work Results for Communications
27 0502	Demolition for Communications Systems
27 0526	Grounding and Bonding for Communications Systems
27 0528	Pathways for Communications Systems
27 0536	Cable Trays for Communications Systems
27 0544	Sleeves and Sleeve Seals for Communications Pathways and Cabling
27 1500	Communications Horizontal Cabling
27 5123	Intercommunications and Program Systems

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

28 3100	Digital, Addressable Fire Alarm System
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DIVISION 31 – EARTHWORK

31 100000	Site Clearing
31 220000	Grading
31 231600	Excavation
31 232300	Fill

DIVISION 32 - EXTERIOR IMPROVEMENTS

32 112300	Aggregate Base Course
32 121600	Asphalt Paving
32 131300	Concrete Paving
32 172313.13	Painted Pavement Marking

7.24.3 The following Drawings, dated December 10, 2019

GENERAL

CV	COVER SHEET
GI000	PROJECT LOCATION, DRAWING INDEX, SYMBOLS
GI101	CODE PLAN
GI102	MOUNTING HEIGHTS
GI103	PHASING PLAN

CIVIL

V-101 EXISTING SITE SURVEY SOUTH PARKING LOT
CD-101 DEMOLITION PLAN SOUTH PARKING LOT - BID LOT #3
C-101 GRADING PLAN SOUTH PARKING LOT - BID LOT #3
C-102 STRIPING PLAN SOUTH PARKING LOT - BID LOT #3
C-501 CIVIL DETAILS
C-502 HANDICAP RAMP DETAIL

STRUCT

S101 FOUNDATIONS PLANS
S102 ROOF FRAMING PLAN
S103 TYPICAL DETAILS, EARTHWORK
S104 STRUCTURAL GENERAL NOTES

DEMOLITION

AD100A DEMOLITION FLOOR PLAN - AREA A
AD100B DEMOLITION FLOOR PLAN - AREA B
AD101A DEMOLITION FLOOR PLAN - AREA A - BID LOT #1
AD101B DEMOLITION FLOOR PLAN - AREA B - BID LOT #1
AD102 EXISTING SLAB DEMOLITION PLAN AND NEW SLAB PLAN
AD120A DEMOLITION REFLECTED CEILING PLAN - AREA A
AD120B DEMOLITION REFLECTED CEILING PLAN - AREA B
AD121A DEMOLITION REFLECTED CEILING PLAN - AREA A - BID LOT #1
AD121B DEMOLITION REFLECTED CEILING PLAN - AREA B - BID LOT #1
AD140A DEMOLITION ROOF PLAN - AREA A
AD140B DEMOLITION ROOF PLAN - AREA B
AD141A DEMOLITION ROOF PLAN - AREA A - BID LOT #1
AD141B DEMOLITION ROOF PLAN - AREA B - BID LOT #1

ARCHITECTURAL SITE

AS101 SITE PLAN
AS501 SITE DETAILS

ARCHITECTURE

AE010 PARTITION TYPES
AE100 FLOOR PLAN - OVERALL
AE100A FLOOR PLAN - AREA A
AE100B FLOOR PLAN - AREA B
AE101A FLOOR PLAN - AREA A - BID LOT #1
AE101B FLOOR PLAN - AREA B - BID LOT #1
AE120A REFLECTED CEILING PLAN - AREA A
AE120B REFLECTED CEILING PLAN - AREA B
AE121A REFLECTED CEILING PLAN - AREA A - BID LOT #1
AE121B REFLECTED CEILING PLAN - AREA B - BID LOT #1
AE140A ROOF PLAN - AREA A

AE140B ROOF PLAN - AREA B
AE141A ROOF PLAN - AREA A - BID LOT #1
AE141B ROOF PLAN - AREA B - BID LOT #1
AE201 EXTERIOR ELEVATIONS
AE221 INTERIOR ELEVATIONS
AE222 INTERIOR ELEVATIONS
AE223 INTERIOR ELEVATIONS
AE224 INTERIOR ELEVATIONS
AE301 BUILDING SECTIONS
AE321 WALL SECTIONS
AE322 WALL SECTIONS
AE341 WALL SECTION DETAILS
AE361 CASEWORK SECTIONS
AE401 ENLARGED PLANS
AE501 FLOOR PLAN DETAILS
AE521 CEILING DETAILS
AE541 ROOF DETAILS
AE581 OPENING DETAILS
AE582 OPENING DETAILS
AE621 SCHEDULES
AE681 OPENING TYPES

ARCHITECTURAL FINISHES

AF101A FINISH FLOOR PLAN - AREA A
AF101B FINISH FLOOR PLAN - AREA B

FIRE PROTECTION

FX001 FIRE PROTECTION LEGEND
FX101A FIRE PROTECTION FLOOR PLAN - AREA A - BID LOT #1
FX101B FIRE PROTECTION FLOOR PLAN - AREA B - BID LOT #1
FX501 FIRE PROTECTION DETAILS

PLUMBING

P-001 PLUMBING LEGEND
PD100A PLUMBING DEMOLITION FLOOR PLAN - AREA A
PD100B PLUMBING DEMOLITION FLOOR PLAN - AREA B
PD101A PLUMBING DEMOLITION FLOOR PLAN - AREA A - BID LOT #1
PD101B PLUMBING DEMOLITION FLOOR PLAN - AREA B - BID LOT #1
PL100A WASTE & VENT FLOOR PLAN - AREA A
PL100B WASTE & VENT FLOOR PLAN - AREA B
PL101A WASTE & VENT FLOOR PLAN - AREA A - BID LOT #1
PL101B WASTE & VENT FLOOR PLAN - AREA B - BID LOT #1
PL140A PLUMBING ROOF PLAN - AREA A
PL140B PLUMBING ROOF PLAN - AREA B
PL141A PLUMBING ROOF PLAN - AREA A - BID LOT #1

PL141B	PLUMBING ROOF PLAN - AREA B - BID LOT #1
PP100A	PRESSURE PIPING FLOOR PLAN - AREA A
PP100B	PRESSURE PIPING FLOOR PLAN - AREA B
PP101A	PRESSURE PIPING FLOOR PLAN - AREA A - BID LOT #1
PP101B	PRESSURE PIPING FLOOR PLAN - AREA B - BID LOT #1
PG100A	PIPED GASES FLOOR PLAN - AREA A
PG101A	PIPED GASES FLOOR PLAN - AREA A - BID LOT #1
P-501	PLUMBING DETAILS
P-701	PLUMBING SPECIFICATIONS

MECHANICAL

M-001	MECHANICAL LEGEND
MD100	MECHANICAL DEMOLITION FLOOR PLAN - OVERALL
MD100A	MECHANICAL DEMOLITION FLOOR PLAN - AREA A
MD100B	MECHANICAL DEMOLITION FLOOR PLAN - AREA B
MD101A	MECHANICAL DEMOLITION FLOOR PLAN - AREA A - BID LOT #1
MD101B	MECHANICAL DEMOLITION FLOOR PLAN - AREA B - BID LOT #1
MD140	MECHANICAL ROOF DEMOLITION PLAN - OVERALL
MD140A	MECHANICAL ROOF DEMOLITION PLAN - AREA A
MD140B	MECHANICAL ROOF DEMOLITION PLAN - AREA B
MD141A	MECHANICAL DEMOLITION ROOF PLAN - AREA A - BID LOT #1
MD141B	MECHANICAL DEMOLITION ROOF PLAN - AREA B - BID LOT #1
MH100	HVAC FLOOR PLAN - OVERALL
MH100A	HVAC FLOOR PLAN - AREA A
MH100B	HVAC FLOOR PLAN - AREA B
MH101A	HVAC FLOOR PLAN - AREA A - BID LOT #1
MH101B	HVAC FLOOR PLAN - AREA B - BID LOT #1
MH140	MECHANICAL ROOF PLAN - OVERALL
MH140A	MECHANICAL ROOF PLAN - AREA A
MH140B	MECHANICAL ROOF PLAN - AREA B
MH141A	MECHANICAL ROOF PLAN - AREA A - BID LOT #1
MH141B	MECHANICAL ROOF PLAN - AREA B - BID LOT #1
M-501	MECHANICAL DETAILS
M-701	MECHANICAL SCHEDULES

MECHANICAL CONTROLS

MI001	MECHANICAL CONTROLS LEGEND
MI601	MECHANICAL CONTROLS DIAGRAMS

ELECTRICAL

E-001	ELECTRICAL SYMBOL LEGEND
ED100	ELECTRICAL DEMOLITION FLOOR PLAN - OVERALL
ES100	ELECTRICAL SITE PLAN
EL100A	LIGHTING FLOOR PLAN - AREA A
EL100B	LIGHTING FLOOR PLAN - AREA B

EL101A LIGHTING FLOOR PLAN - AREA A - BID LOT #1
 EL101B LIGHTING FLOOR PLAN - AREA B - BID LOT #1
 EP100A POWER FLOOR PLAN - AREA A
 EP100B POWER FLOOR PLAN - AREA B
 EP101A POWER FLOOR PLAN - AREA A - BID LOT #1
 EP101B POWER FLOOR PLAN - AREA B - BID LOT #1
 EP140A ELECTRICAL ROOF PLAN - AREA A
 EP140B ELECTRICAL ROOF PLAN - AREA B
 EP141A ELECTRICAL ROOF PLAN - AREA A - BID LOT #1
 EP141B ELECTRICAL ROOF PLAN - AREA B - BID LOT #1
 FA101A FIRE ALARM FLOOR PLAN - AREA A - BID LOT #1
 FA101B FIRE ALARM FLOOR PLAN - AREA B - BID LOT #1
 E-401 ENLARGED POWER PLANS
 E-501 ELECTRICAL DETAILS
 ED601 ELECTRICAL DEMOLITION ONE-LINE DIAGRAM
 E-601 ELECTRICAL ONE-LINE DIAGRAM
 E-602 GROUNDING & FIRE ALARM RISER DIAGRAMS
 E-701 ELECTRICAL SCHEDULES
 E-702 ELECTRICAL PANEL SCHEDULES
 E-703 ELECTRICAL PANEL SCHEDULES

TECHNOLOGY

T-001 TECHNOLOGY LEGEND
 TD100 TECHNOLOGY SYSTEMS DEMOLITION FLOOR PLAN - OVERALL
 TS101 TECHNOLOGY SITE PLAN
 T-100A TECHNOLOGY SYSTEMS FLOOR PLAN - AREA A
 T-100B TECHNOLOGY SYSTEMS FLOOR PLAN - AREA B
 T-101A TECHNOLOGY SYSTEMS FLOOR PLAN - AREA A - BID LOT #1
 T-101B TECHNOLOGY SYSTEMS FLOOR PLAN - AREA B - BID LOT #1
 T-401 ENLARGED TECHNOLOGY PLANS
 T-501 TECHNOLOGY DETAILS
 T-502 TECHNOLOGY DETAILS
 T-601 TECHNOLOGY DIAGRAMS

7.24.3 Addenda

No. _____ Description _____ Date _____
 No. _____ Description _____ Date _____
 No. _____ Description _____ Date _____
 No. _____ Description _____ Date _____

END OF ARTICLE 7

Contract No.:

PSFA Project No.: K-18-022 & S-20-008

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

CONTRACTOR

By:
Printed Name:
Title: Date:

Federal Identification Number:
NM CRS Identification Number:

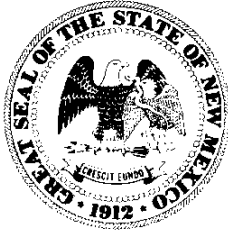
OWNER:

By:
Printed Name:
Title: District Representative Date:

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

PUBLIC SCHOOL FACILITIES AUTHORITY

By:
Printed Name:
Title: - Date:



STATE OF NEW MEXICO

PORTALES MUNICIPAL SCHOOLS
In Collaboration With
PUBLIC SCHOOL CAPITAL OUTLAY
PUBLIC SCHOOL FACILITIES AUTHORITY
Albuquerque, New Mexico 87106

MICHELLE LUJAN GRISHAM
GOVERNOR

JOE GUILLEN
CHAIR

JONATHAN CHAMBLIN
EXECUTIVE DIRECTOR
(505) 468-0301

NOTICE TO PROCEED

TO:

DATE:

PROJECT: Brown Early Childhood Center Pre-K and Systems Project

PROJECT NO. K-18-011 & S-20-008

ITB REF NO. 20-21-0001

CONTRACT NO.

Ladies and Gentlemen:

Enclosed is your copy of the Contract, which has been approved. Please consider this letter as official NOTICE TO PROCEED on the above-referenced project.

Your firm shall commence work within ten (10) calendar days of the above date and shall achieve Substantial Completion **395** calendar days thereafter, which shall be June 3rd, 2021, unless modified by Change Order.

It is essential that you make reference to the above stated project number on all documents sent to the Design Professional from your office. These documents shall include correspondence, modification change requests (MCR's), change orders, payment request statements, and all other project related material which you forward to the Design Professional for information and processing.

Before you may start any Work on the site, off the site, or otherwise incur expenses or liabilities, you have delivered all pre-Work documents required by the Construction Documents that include, but are not limited to, the Labor Material and Performance Bonds and Certificate of Insurance and you must have received a Purchase Order for the Work.

In addition, you must deliver (add any other requirements):

NOTICE TO PROCEED

00 5501 - 1

Invoicing for Work: Under no circumstances shall an invoice be received prior to Purchase Order date or prior to approval of Schedule of Values.

In addition, you must (add any other requirements):

PROJECT NO. K-18-011 & S-20-008
CONTRACT NO.

OWNER:

PORTALES MUNICIPAL SCHOOLS
501 SOUTH ABILENE
PORTALES, NM 88130
PHONE: (575) 356-7000
FAX: (575) 356-4377

CO-OWNER:

PUBLIC SCHOOL FACILITIES AUTHORITY
401 DON GASPAR
SANTA FE, NM 87505
PHONE: (505)988-5989
FAX: (505)988-5933

By: _____
SARAH STUBBS, DIRECTOR OF FINANCE/CPO
DISTRICT REPRESENTATIVE
PORTALES MUNICIPAL SCHOOLS

By: _____
JEREMY SANCHEZ
PSFA REGIONAL MANAGER

Distribution to:

- District Purchasing Agent (original)
- Design Professional of Record (copy)
- PSFA Sr. Facilities Manager (copy)
- PSFA Contracts Administrator (copy)
- Other _____

SAMPLE

THE AMERICAN INSTITUTE OF ARCHITECTS



AIA Document A312

Performance Bond

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

CONTRACTOR (Name and Address):

SURETY (Name and Principal Place of Business):

OWNER (Name and Address):

CONSTRUCTION CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Date (Not earlier than Construction Contract Date):

Amount:

Modifications to this Bond:

None

See Page 3

CONTRACTOR AS PRINCIPAL

Company:

(Corporate Seal)

SURETY

Company:

(Corporate Seal)

Signature: _____

Name and Title:

Signature: _____

Name and Title:

(Any additional signatures appear on page 3)

(FOR INFORMATION ONLY—Name, Address and Telephone)

AGENT or BROKER:

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

SAMPLE

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

2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except to participate in conferences as provided in Subparagraph 3.1.

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

3.1 The Owner has notified the Contractor and the Surety at its address described in Paragraph 10 below that the Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Construction Contract. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default; and

3.2 The Owner has declared a Contractor Default and formally terminated the Contractor's right to complete the contract. Such Contractor Default shall not be declared earlier than twenty days after the Contractor and the Surety have received notice as provided in Subparagraph 3.1; and

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

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

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

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

4.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and the contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by the Owner resulting from the Contractor's default; or

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

.1 After investigation, determine the amount for

which it may be liable to the Owner and, as soon as practicable after the amount is determined, tender payment therefor to the Owner; or

.2 Deny liability in whole or in part and notify the Owner citing reasons therefor.

5 If the Surety does not proceed as provided in Paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Subparagraph 4.4, and the Owner refuses the payment tendered or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

6 After the Owner has terminated the Contractor's right to complete the Construction Contract, and if the Surety elects to act under Subparagraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. To the limit of the amount of this Bond, but subject to commitment by the Owner of the Balance of the Contract Price to mitigation of costs and damages on the Construction Contract, the Surety is obligated without duplication for:

6.1 The responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

6.2 Additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 4; and

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

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

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

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

SAMPLE

able to sureties as a defense in the jurisdiction of the suit shall be applicable.

10 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page.

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

12 DEFINITIONS

12.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Con-

tractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

12.2 Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

12.3 Contractor Default: Failure of the Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Construction Contract.

12.4 Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

MODIFICATIONS TO THIS BOND ARE AS FOLLOWS:

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

CONTRACTOR AS PRINCIPAL
Company:

(Corporate Seal)

SURETY
Company:

(Corporate Seal)

Signature: _____
Name and Title:
Address:

Signature: _____
Name and Title:
Address:

SAMPLE

THE AMERICAN INSTITUTE OF ARCHITECTS



AIA Document A312

Payment Bond

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

CONTRACTOR (Name and Address):

SURETY (Name and Principal Place of Business):

OWNER (Name and Address):

CONSTRUCTION CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Date (Not earlier than Construction Contract Date):

Amount:

Modifications to this Bond:

None

See Page 6

CONTRACTOR AS PRINCIPAL

Company:

(Corporate Seal)

SURETY

Company:

(Corporate Seal)

Signature: _____

Name and Title:

Signature: _____

Name and Title:

(Any additional signatures appear on page 6)

(FOR INFORMATION ONLY—Name, Address and Telephone)

AGENT or BROKER:

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

SAMPLE

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

2 With respect to the Owner, this obligation shall be null and void if the Contractor:

2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants, and

2.2 Defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity whose claim, demand, lien or suit is for the payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, provided the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety, and provided there is no Owner Default.

3 With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.

4 The Surety shall have no obligation to Claimants under this Bond until:

4.1 Claimants who are employed by or have a direct contract with the Contractor have given notice to the Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

4.2 Claimants who do not have a direct contract with the Contractor:

.1 Have furnished written notice to the Contractor and sent a copy, or notice thereof, to the Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and

.2 Have either received a rejection in whole or in part from the Contractor, or not received within 30 days of furnishing the above notice any communication from the Contractor by which the Contractor has indicated the claim will be paid directly or indirectly; and

.3 Not having been paid within the above 30 days, have sent a written notice to the Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the Contractor.

5 If a notice required by Paragraph 4 is given by the Owner to the Contractor or to the Surety, that is sufficient compliance.

6 When the Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

6.1 Send an answer to the Claimant, with a copy to the Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

6.2 Pay or arrange for payment of any undisputed amounts.

7 The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

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

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

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

11 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the work or part of the work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Subparagraph 4.1 or Clause 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page. Actual receipt of notice by Surety, the Owner or the Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this

SAMPLE

Bond shall be construed as a statutory bond and not as a common law bond.

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

15 DEFINITIONS

15.1 Claimant: An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the

Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

15.2 Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

15.3 Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

MODIFICATIONS TO THIS BOND ARE AS FOLLOWS:

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

CONTRACTOR AS PRINCIPAL
Company:

(Corporate Seal)

SURETY
Company:

(Corporate Seal)

Signature: _____
Name and Title:
Address:

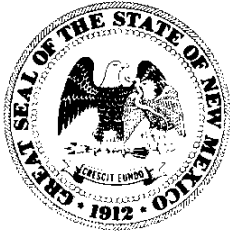
Signature: _____
Name and Title:
Address:

APPROVED MODIFICATIONS PAGE

Modification No.1:

Paragraph 6 of this Payment Bond is deleted in its entirety and replaced with the following provision: Within 45 days (1) after the claimant has satisfied the conditions of Paragraph 4 and (2) after the Surety has received at its home office all supporting documentation it requested to substantiate the amount of the claim, the Surety shall pay or arrange for payment of any undisputed amounts. Failure of the Surety to satisfy the above requirements shall not be deemed a forfeiture or waiver of the Surety's or the Contractor's defenses under this Bond or their right to dispute such claim. However in such event the claimant may bring suit against the Surety as provided under this Bond.

AGENT'S AFFIDAVIT



THIS FORM MUST
BE USED BY
SURETY

(To be filled in by Agent)

STATE OF _____)
) ss.
COUNTY OF _____)

_____, being first duly sworn, deposes and says
that he /

she is the duly appointed agent for
and is
licensed in the State of New Mexico.

Deponent further states that a certain bond was given to indemnify the State of New
Mexico in connection with the construction of
dated the _____ day of _____, 20____, executed by
Contractor, as principal, and _____, as surety, signed by
this Deponent; and Deponent further states that said bond was written, signed, and
delivered by him/her; that the premium on the same has been or will be collected by
him/her; and that the full commission thereon has been or will be retained by him/her.

Subscribed and sworn to before me, a notary public in and for the County of,
, this _____ day of _____, 20____.
Notary Public

My Commission Expires:

AGENT'S ADDRESS:

Telephone

Instructions:

1. **Contractor shall attach pre-signed or un-signed form to Performance Bond and Labor and Material Bond and submit to Design Professional with Post-Bid submittals (see Section 00 2113 - Instructions to Bidders).**
2. **District shall review Surety for acceptability and, if approved, sign form prior to approval of Contract.**
3. **After review and approval of bonds, District shall include signed form with approved Contract in transmittal to PSFA.**

REVIEW AND APPROVAL:

This Bond has been executed by a Surety named in the current list of "companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies," as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, United States Treasury Department.

APPROVED:

By: _____
Owner's Representative or Governing Authority

Date: _____



STATE OF NEW MEXICO
Public School Facilities Authority
1312 Basehart Road, SE
Suite 200
Albuquerque, NM 87106

Jonathan Chamblin, Director
 Martica Casias, Deputy Director

Telephone: (505) 843-6272
 Facsimile: (505) 843-9681

LETTER OF TRANSMITTAL / OWNER-CONTRACTOR AGREEMENT

TO:	FROM:
COMPANY:	COMPANY:
ADDRESS:	ADDRESS:
PHONE NUMBER:	PHONE NUMBER:
PROJECT & PROJECT NUMBER:	DATE:

Urgent As Requested For Review & Comment Please Reply Approval & Signature

Attached are two (2) original counterparts of the Agreements Between Owner and Contractor for your review, approval, and signature. Please return the signed Agreements together with 2 copies of the required documentation listed below to the District Representative for execution. An executed original of the Agreement Between Owner and Contractor will be returned to you upon final approval and signature.

- Performance Bond
- Labor and Material Payment Bond
- Agent's Affidavit
- Bid Day Information Packet which includes copies of the Bid Tabulation, Low Bid, Bid Bond and Subcontractors List. **(Responsibility of District)**
- Subcontractors List and Antitrust Claims (signed by Contractor, Subcontractors, and Suppliers as required)
- Certificate of Insurance
- State W-9 **OR** State W-9 currently on file with the PSFA
- PSFA / District responsibility percentage breakdown spreadsheet **(Responsibility of PSFA RM)**
- Other: **Complete Contractor and Subcontractor Bond Costs under Article 4 of the Contract.**
- Other: Builders Risk Insurance Policy (Binded)
- Other: Revised 007200 General Conditions of the Contract for Construction
- Other: Workforce Solutions Certificate of Registration

This letter of transmittal should accompany the Agreements and other required documentation and be returned to:

SARAH STUBBS, DIRECTOR OF FINANCE/CPO
 PORTALES MUNICIPAL SCHOOLS
 501 SOUTH ABILENE
 PORTALES, NM 88130

Date Transmitted: _____ By: _____

INSTRUCTIONS TO DISTRICT REPRESENTATIVE

Please review the Agreement and Exhibits with your assigned PSFA Regional Manager. If in agreement, please sign two (2) originals of the Agreement and return to your PSFA Regional Manager. Upon final approval, an executed original will be returned to you.

Tracking:

1. Architect / District Representative provides above transmittal and supporting documents to PSFA Regional Manager;
2. PSFA Regional Manager reviews, approves, signs and forwards to the PSFA Santa Fé Office for review;
3. Santa Fé Office reviews transmittal confirming all supporting documentation attached; and
4. Upon final PSFA approval a Purchase Order will be issued.

OWNER-CONTRACTOR AGREEMENT TRANSMITTAL FORM

00 6212- 1

00_6212-O-CAgreemTransm_psf_a_DBB_version_3.000 - COMPLETE

Reviewed and Approved:

By: _____
District Representative

Date: _____

By: _____
PSFA Regional Manager

Date: _____

Tracking:

1. Architect / District Representative provides above transmittal and supporting documents to PSFA Regional Manager;
2. PSFA Regional Manager reviews, approves, signs and forwards to the PSFA Santa Fé Office for review;
3. Santa Fé Office reviews transmittal confirming all supporting documentation attached; and
4. Upon final PSFA approval a Purchase Order will be issued.

M O D I F I C A T I O N / C H A N G E R E Q U E S T

PROJECT NAME: Brown Early Childhood Center PROJECT NUMBER: K-18-011 & S-20-008

M/CR LOG NUMBER _____ (Assigned by DP or PSFA) Current Date _____

REQUESTED BY DISTRICT REP (DR) CONTRACTOR DP PSFA INITIAL _____

WHO HAS REQUESTED THE WORK BE DONE _____
ie; user group name/individual/contractor/subcontractor/ etc.

DESCRIPTION OF CHANGE ATTACHMENT(S) YES NO
First why, then how.

OWNER REVIEW OF CONTENT AND/OR FEASIBILITY INITIAL _____ DATE _____
DR
INITIAL _____ DATE _____
PSFA

- DO NOT PROCEED
- PROCEED WITH ESTIMATE OF COSTS ONLY (within 10 calendar days of receipt of this MCR)!
- PROCEED WITH WORK, ESTIMATES OF COSTS TO FOLLOW (estimate within 10 days of receipt of this MCR)!

A/E – ESTIMATED COST OF REQUIRED DESIGN WORK: (estimate within 5 days; Include breakdown of costs)
\$ _____ Initial _____ Date _____
Project DP

PROCEED WITH DESIGN: (Forward proposed costs of work to OWNER for approval, include GRT)
APPROVED AMOUNT \$ _____ Initial _____ Date _____
DR PSFA

CONTRACTOR'S PROPOSED COST: (Include backup, include GRT)
APPROVED AMOUNT \$ _____ Initial _____ Date _____
DR PSFA

MUST BE COMPLETED TO FINALIZE: INITIAL _____ DATE _____
DR
INITIAL _____ DATE _____
PSFA

- PROCEED WITH MODIFICATION OF WORK AND TO CONTRACT SUM (INCLUDE IN CHANGE ORDER)
- REJECTED BUT, REPLACED BY MCR # _____
- REJECTED – STOP ALL ACTION ON THIS REQUEST _____

MODIFICATION / CHANGE REQUEST NO. _____

DATE: _____

PROJECT NO. _____

DESCRIPTION OF PROPOSED WORK:

--

NOTE: Fill out a separate worksheet for each subcontractor on this MCR. The GC shall use this same form to summarize the total of all subcontractor proposals while adding GC costs. Attach all worksheets and breakdowns to summary sheet for each MCR.

SUBCONTRACTOR'S COSTS (ATTACH SUBCONTRACTOR'S SHEET AND COST BREAKDOWNS):*		
1	Total of subcontractor's material (attach itemized breakdown):	\$ -
2	Total of subcontractor's labor cost including fringe benefits and labor burden (attach itemized breakdown):	\$ -
3	Other directly attributable costs allowed (attach itemized breakdown):	\$ -
4	Subtotal:	\$ -
5	Subcontractor's O&P (0 % of Item 4)	\$ -
6	Subcontractor's Bond:	\$ -
7	Permits paid by subcontractor:	\$ -
8	Subcontractor's Total Costs:	\$ -

GENERAL CONTRACTOR'S COSTS (ATTACH WORKSHEETS)*		
9	GC's material (attach itemized breakdown):	\$ -
10	General Contractor's labor cost including fringe benefits and labor burden (attach itemized breakdown) @ (0 %):	\$ -
11	Construction equipment (rental):	\$ -
12	Directly attributable field supervision, insurance, etc. (attach itemized breakdown):	\$ -
13	Subtotal:	\$ -
14	General Contractor's Overhead and Profit on subcontractor (0 % of Item 8)	\$ -
15	General Contractor's Overhead and Profit on work by General Contractor's own forces (0 % of Item 13):	\$ -
16	Subtotal (sum of Items 13,14, and 15):	\$ -
17	Permits paid by General Contractor:	\$ -
18	Subtotal (sum of Items 8,16, and 17):	\$ -
19	Insurance (0 % of Item 18):	\$ -
20	Subtotal (sum of Items 18 and 19):	\$ -
21	Bond (0 % of Item 20):	\$ -

22	MCR Subtotal (sum of Items 20 and 21):	\$ -
23	Gross Receipts Tax (7.0000 % of Item 22):	\$ -
24	General Contractor's total cost (sum of Items 22 and 23):	\$ -

* Allowable costs and percentages shall not exceed those indicated in Article 7.2.5.

PSFA PROJECT # 0

PROJECT NAME: 0

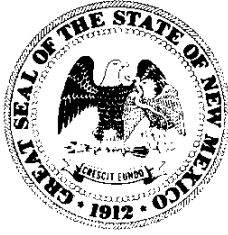
CHANGE ORDER # 0

CONTRACTOR: 0

CHANGE ORDER TOTAL \$ - STATE SHARE TO ADEQUACY \$ - TOTAL DISTRICT \$ -

By: _____ Name of District Representative School District	By: _____ Name of Signatory 0	By: _____ Name of Signatory 0
Date: _____	Date: _____	Date: _____

Reviewed By: _____ Name of Regional Manager PSFA REGIONAL MANAGER	Approved By: _____ Martica Casias PSFA DEPUTY DIRECTOR
Date: _____	Date: _____



STATE OF NEW MEXICO

PORTALES MUNICIPAL SCHOOLS
In Collaboration With
PUBLIC SCHOOL CAPITAL OUTLAY
PUBLIC SCHOOL FACILITIES AUTHORITY
Santa Fe, New Mexico 87505

Michelle Lujan Grisham
GOVERNOR

Joe Guillen
CHAIR

Jonathan Chamblin
DIRECTOR
(505) 468-0301

CERTIFICATE OF SUBSTANTIAL COMPLETION

PROJECT NUMBER: K-18-011 & S-20-008 CONTRACT DATED:

PROJECT NAME: Brown Early Childhood Center Pre-K and Systems Project

WORK SUBSTANTIALLY COMPLETE: (Clearly state if in WHOLE or PART)

SUBSTANTIAL COMPLETION is defined, in accordance with Article 9 of the General Conditions, as the date certified by the Design Professional when all the Work, or portion of the Work, is complete except for minor items so that the Owner can completely occupy or fully utilize the Work for it's intended use.

The Design Professional also certifies that Contractor's Punch List of items to be completed or corrected prior to Final Completion, and Close-out List, have been reviewed by the Design Professional's best effort and found to be accurate. The Design Professional and the Contractor certify that attached are; 1) any agreed upon modifications or exceptions to Warranties stated in the Contract Documents, 2) Punch List, and 3) Close-out List and Schedule .

The DESIGN PROFESSIONAL therefore has determined that the Date of Substantial Completion for that Work defined above was _____, 20__ .

DESIGN PROFESSIONAL:

By:

Date:

The CONTRACTOR certifies that the above is true and in agreement and to be responsible for any Liquidated Damages due related to Substantial Completion date in accordance with the Contract Documents.

CONTRACTOR:

By:

Date:

The OWNER hereby accepts the above defined Work as being Substantially Complete on said date.

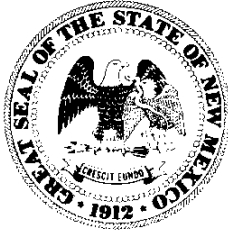
By: _____
Philip Fields
DISTRICT REPRESENTATIVE
PORTALES MUNICIPAL SCHOOLS

By: _____
JEREMY SANCHEZ
PSFA REGIONAL FACILITIES
MANAGER

- Distribution to:
- District Purchasing Agent
 - Design Professional of Record
 - Sr. Facilities Manager, PSFA
 - Contracts Administrator, PSFA
 - Other

Date: _____

Date: _____



STATE OF NEW MEXICO

PORTALES MUNICIPAL SCHOOLS
In Collaboration With
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PUBLIC SCHOOL FACILITIES AUTHORITY
Santa Fe, New Mexico 87505

Michelle Lujan Grisham
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CHAIR

Jonathan Chamblin
DIRECTOR
(505) 468-0301

CERTIFICATE OF FINAL COMPLETION

PROJECT NUMBER: K-18-011 & S-20-008

CONTRACT DATED:

PROJECT NAME: Brown Early Childhood Center Pre-K and Systems Project

SUBSTANTIAL COMPLETION DATE:

FINAL COMPLETION is defined, in accordance with Article 9 of the General Conditions, as the date certified by the Design Professional when all the Work of the Project is fully complete, the Close-Out requirements of Paragraph 9.10 of the General Conditions have been completed, the Contract fully performed in accordance with the Contract Documents, and the Contractor entitled to final payment.

The DESIGN PROFESSIONAL has inspected the Work and has determined that the Date of Final _____, 20__ . Completion was

DESIGN PROFESSIONAL:

By:

Date:

ONE YEAR INSPECTION: Approximately thirty days prior to _____, the one-year anniversary of the Date of Substantial Completion, the Design Professional, the Owner, and the Contractor shall conduct an inspection of the Project to determine any correction of the Work which may be required at that time.

The CONTRACTOR certifies that the Work is fully completed and was completed on or before _____, and submits herewith:

- Application for Final Payment (AIA G702 or equal)
- Affidavit of Payments (AIA G706 or equal)
- Consent of Surety (AIA G707 or equal)
- Release of Liens (AIA G706A or equal)

CONTRACTOR:

By:

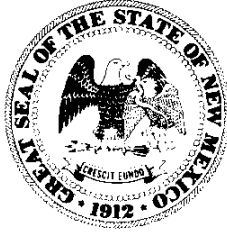
Date:

The OWNER hereby accepts the Work as fully complete and will make final payment.

By: _____
PHILIP FIELDS
DISTRICT REPRESENTATIVE
PORTALES MUNICIPAL SCHOOLS
Date: _____

By: _____
JEREMY SANCHEZ
PSFA REGIONAL MANAGER
Date: _____

- Distribution to:
- District Purchasing Agent
 - Design Professional of Record
 - Sr. Facilities Manager, PSFA
 - Contracts Administrator, PSFA
 - Other



STATE OF NEW MEXICO

PUBLIC SCHOOL FACILITIES AUTHORITY

PUBLIC SCHOOL CAPITAL OUTLAY COUNCIL

General Conditions of the Contract for Construction

2019 Edition, Version 3.1a

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2.3, 2.4, 3.3.1, 3.9, 3.12.9, 3.12.10, 4.3, 4.4.8,
4.6.5, 5.2.1, 8.2.2, 9.7, 9.10, 10.2.2, 10.3,
11.1.3, 11.4.6, 12.2.2, 12.2.4, **13.3**, 14

Written Orders
1.1.1, 2.3, 3.9, 4.3.6.7, 8.2.2, 11.4.9, 12.1,
12.2, 13.5.2, 14.3.1

ARTICLE 1 GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

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

Modifications are (1) a written amendment to the Contract signed by Owner and Contractor, (2) Modification / Change Request hereinafter referred to as MCR approved by Owner, Contractor and Design Professional, (3) Change Order, or (4) a written order for a minor change in the Work, hereinafter referred to as Supplemental Instruction issued by the Design Professional. Unless specifically enumerated in the Agreement, the Contract Documents do not include other documents such as bidding requirements (advertisement or Invitation to Bid, Instructions to Bidders, sample forms, the Contractor's bid or portions of Addenda relating to bidding requirements).

1.1.2 THE CONTRACT

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

1.1.2.1 Each and every provision of law and clause required by law to be inserted in this Contract shall be read and enforced as though it were included herein; and if through error or otherwise any such provision is not inserted, or is not correctly inserted, then upon the written application of either party the Contract shall be amended without cost to make such insertion or correction and that the remainder of this Contract shall remain in effect and not be affected thereby.

1.1.3 THE WORK

The term "Work" means the construction and services required by or reasonably inferable from the Contract Documents, whether completed or partially completed, and includes all labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the results indicated by the Contract Documents in a safe, expeditious, orderly and workmanlike manner in keeping with current standards of the industry. The Work may constitute the whole or a part of the Project. .

1.1.4 THE PROJECT

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

1.1.5 THE DRAWINGS

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

1.1.6 THE SPECIFICATIONS

The Specifications are the written requirements of the Contract Documents for products, materials, workmanship, and performance of related services.

1.1.7 THE PROJECT MANUAL

The Project Manual is the volume of written Construction Documents typically containing Bidding Requirements, contract forms, Conditions of the Contract and Specifications.

1.1.8 PUNCH LIST

A punch list is a comprehensive list of incomplete, defective or incorrect Work prepared by the Contractor, Design Professional or Owner to indicate Work required to be completed. Specific punch lists required by the Contract Documents include the Substantial Completion Punch List created by the Contractor prior to application for Substantial Completion in accordance with Paragraph 9.8, and that includes the Close-Out Punch List as required by Paragraph 9.10, and any other punch list created by the Owner or Design Professional for the purposes of this Paragraph and otherwise successful completion of the Work.

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

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

1.2.2 Reasonably Inferable, as used in this Contract, shall mean information or knowledge that is derivable or evident by prudent and diligent examination of the Contract Documents and other information reasonably available by the Contractor or Subcontractor knowledgeable in their field and includes items:

- 1.** specified in the Contract Documents required to complete the Work, but not graphically indicated. Contractor shall provide the minimum product or work necessary to fulfill the specifications or otherwise the requirements of any industry standards, such as, but not limited to, final function of Work such as strength, profile, or use as indicated by the Contract Documents; and,
- 2.** shown or graphically indicated as required to complete the Work but not specified. Contractor shall provide the minimum product or work necessary to complete the depicted Work, such as, but not limited to, final function of Work such as strength, profile, or use as indicated by the Contract Documents.

1.2.3 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings are for convenience of reference only and shall not control the Contractor in dividing the

Work among Subcontractors or in establishing the extent of Work to be performed by any trade. Such separation will not operate to make the Owner or Design Professional an arbiter of labor disputes or work agreements.

1.2.4 Words shall be first interpreted within the context they are used and by definition, if any, provided by the Contract Documents themselves. Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in accordance with such recognized meanings. If the meaning of a word is not clear from the Contract Documents or have a well-known technical or construction industry meaning, the Webster's Collegiate Dictionary, current at time of contract, meaning shall apply.

1.2.5 INCONSISTENCIES

In the event of conflicts in the Contract Documents, the most restrictive or otherwise most beneficial to the Owner shall apply to all similar conditions. Other rules for conflicts in the Contract Documents shall be that:

1. Addenda shall govern over all other Contract Documents and subsequent Addenda shall govern over prior Addenda only to the extent modified;
2. between drawings and specifications, the specifications shall govern;
3. within the drawings:
 - a) schedule, when identified as such, shall govern over notes or other directions included within the drawings.
 - b) specific note shall govern over general note.
 - c) note evidently intended to be used as a general or typical note, shall be used as such throughout.
 - d) dimensions provided shall take precedence over scaled measurements.
 - e) large scale drawings shall take precedence over smaller scale drawings; and
4. General Conditions shall govern over all sections of the Contract Documents, except as modified by Supplementary General Conditions or Addenda.
5. The Contractor shall comply with the provisions of Article 3.2 in providing notification of conflict within the Contract Documents, regardless of rules governing such conflicts and contained in this subparagraph.

1.3 CAPITALIZATION

1.3.1 Within the General Conditions, these terms are capitalized when they are used specifically in relations to the Agreement: Owner and Contractor who are parties to this Agreement, Design Professional who performs services under agreement with the Owner, Subcontractors who perform work under subcontract at any tier with the Contractor, the various Bidding and Contract Documents, Project, Work, titles of numbered Articles and Paragraphs within the Contract Documents, and names used to identify parts of the Project. When these terms are used generically and not specifically associated with the Project, they are not capitalized.

1.4 INTERPRETATION

1.4.1 In the interest of brevity, the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent

from one statement and appears in another is not intended to affect the interpretation of either statement.

1.5 EXECUTION OF CONTRACT DOCUMENTS

1.5.1 The Contract Documents shall be signed by the Owner and Contractor. If either the Owner or Contractor does not sign all the required documents of the Contract Documents, the Design Professional shall identify such unsigned documents.

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

1.6 OWNERSHIP AND USE OF DRAWINGS AND SPECIFICATIONS

1.6.1 Drawings, specifications and copies thereof shall remain the Owner's property. They are not to be used on another project. Neither the Contractor nor any Subcontractor, material supplier or equipment supplier or any person or entity shall own or claim a copyright to any Drawings, Specifications or any other documents prepared or developed for definition of the Work. The Owner will retain all common law, statutory and other reserved rights, in addition to the copyrights. The Contractor, Subcontractors, material suppliers and equipment suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents for use in the execution of their Work under the Contract Documents. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Owner's copyrights or other reserved rights.

2.1 GLOSSARY OF COMMONLY-USED TERMINOLOGY

2.1.1 These General Conditions utilize specific terms which relate to the Owner's organization, systems, and standard forms and documents. Examples of such terms are listed and defined as follows:

- 1. "Modification Change Request (MCR)"** is a written document required by the Owner on matters involving changes in the Work, and as defined by Paragraph 7.2.
- 2. "PSFA-CIMS"** is the PSFA internet-based project communications system required for use on the Project, as defined in Subparagraph 4.2.4.3..
- 3. "Public School Capital Outlay Council (PSCOC)"** is the body with responsibility to approve allocations for public school capital outlay assistance.
- 4. "Public School Facilities Authority (PSFA)"** is the agency, under the Public School Capital Outlay Council (PSCOC) charged with the responsibility for overseeing projects.

ARTICLE 2 OWNER

2.1 GENERAL

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

2.1.2 If Project includes PSCOC funding then:

1. the Owner, referred to throughout the Contract Documents, shall be interpreted to be both the School District and the Public School Facilities Authority (PSFA) as if singular in number; and,
2. there shall be two (2) Owner representatives - ONE REPRESENTING School District and one representing PSFA. Agreement by both representatives shall be required in all instances where the Contract Documents require Owner approval; and,
3. provisions of Subparagraph 4.2.4.3 requiring use of the PSFA CIMS system shall apply; and,
4. Work shall be fully in accordance with the Contract Documents, including all contractual and implied responsibilities; and,
5. after Final Completion in accordance with Paragraph 9.11 the Contract requirements shall recognize only the School District as the Owner.

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

2.2.1 The Owner shall, at the written request of the Contractor, prior to commencement of the Work and thereafter, furnish to the Contractor reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. Furnishing of such evidence shall be a condition precedent to commencement or continuation of the Work. After such evidence has been furnished, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

2.2.2 Except for permits and fees, including those required under Subparagraph 3.7.1, which are the responsibility of the Contractor under the Contract Documents, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities that shall include utility expansion charges but, not tapping fees.

2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner, but shall exercise proper precautions relating to the safe performance of the Work.

2.2.4 Unless stated otherwise in the Contract Documents, the Owner shall furnish in accordance with Article 6 specific testing, adjusting and compliance monitoring and explicitly:

1. geotechnical testing and analysis including soil testing and compaction, but excluding load testing for caissons and piers; and,
2. concrete testing including slump analysis and compression testing with, at the Owner's request, the Contractor responsible for forming test cylinders or similar; and

3. testing and balancing of heating and air-conditioning systems with the Contractor responsible for timely, diligent and coordinated corrections to Work required until performance is compliant with the Contract Documents.

The Contractor shall be responsible for testing and costs as defined by Paragraph 13.5 and Subparagraph 12.2.1.1.

2.2.5 Information or services required of the Owner by the Contract Documents shall be furnished by the Owner with reasonable promptness. Any other information or services relevant to the Contractor's performance of the Work, under the Owner's control, shall be furnished by the Owner after receipt from the Contractor of a written request for such information or services.

2.2.6 Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, five (5) copies of Drawings and Project Manuals; however, the Contractor may have more copies free of charge if they are available without additional cost to the Owner.

2.3 OWNER'S RIGHT TO STOP THE WORK

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

2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

2.4.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven (7) day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may after such seven (7) day period, without prejudice to other remedies that the Owner may have, correct such deficiencies. In such case, an appropriate Modification in accordance with Article 7 shall be issued deducting from payments then or thereafter due the Contractor for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Design Professional's additional services made necessary by such default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

2.4.2 If in the event that the Contractor defaults or neglects to carry out the Work to final completion in keeping with the Substantial Completion Schedule provided in accordance with Subparagraph 9.8.2 and, fails within a seven (7) day period after receipt of written notice from the Owner to correct such default with diligence and promptness, the Owner may after such seven (7) day period, without prejudice to other remedies, correct Punch List and Close-Out deficiencies to achieve project completion without further notice to the Contractor or its surety. In such case, an appropriate Modification in accordance with Article 7 shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Design Professional's additional services made necessary

by such default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

2.4.3 In carrying out the Owner's right to complete the Work in accordance with Paragraph 2.4, the Owner shall have the right to exercise the Owner's sole discretion as to the manner, methods and reasonableness of costs of completing the Work.

ARTICLE 3 CONTRACTOR

3.1 GENERAL

3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Contractor" means the Contractor or the Contractor's authorized representative.

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

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

3.1.4 The Contractor shall, prior to bid, be properly licensed according to the requirements of the Construction Industries Licensing Act, Chapter 60, and Article 13 NMSA 1978 and shall ensure to the Owner that such license shall remain in effect for the duration of the Work and warranty periods.

3.1.5 Debarred or Suspended Contractors: A business (Contractor, Subcontractor, or supplier) that has either been debarred or suspended pursuant to the requirements of Sections 13-1-177 through 13-1-180, and 13-4-11 through 13-4-17, NMSA 1978, shall not be permitted to do business with the State and shall not be considered for award of contract during the period for which it is debarred or suspended.

3.1.6 Bribes, Gratuities and Kickbacks

3.1.6.1 It is illegal in the State of New Mexico for any public employee to solicit or accept anything of value in connection with award of contract for this Bid and for any person to offer or pay anything of value to any such public employee (30-24-1 and 30-24-2, NMSA 1978).

3.1.6.2 Pursuant to Section 13-1-191, NMSA 1978, reference is hereby made to the Criminal Laws of New Mexico (including 30-24-1, 30-24-2, and 30-41-1 through 30-41-3, NMSA 1978), which prohibit bribes, kickbacks, and gratuities, and violation of which constitutes a felony. Further, the Procurement code (13-1-28 through 13-1-199, NMSA 1978) imposes civil and criminal penalties for its violation.

3.1.7 Assignment of Antitrust Claims

3.1.7.1 The Contractor agrees that any and all claims that the Contractor may have or that may inure to the Contractor for overcharges resulting from antitrust violations as to goods, services, and materials purchased in connection with this Bid are hereby assigned to the State of New Mexico, but only to the extent that such overcharges are passed on to the State. The Contractor further agrees to require each of its Subcontractors and suppliers to assign any and all such claims for overcharges to the State by executing an assignment on the form provided by the Owner for such purpose. The executed forms (see Section 00 4336 of the Bid Documents) shall be submitted prior to the commencement of the Work or the supplying of any materials by the supplier or Subcontractor. The submission of this executed form may be waived by the Owner upon a showing of a good-faith effort by the Contractor to obtain agreement in writing from its supplier or Subcontractor. Waiver by the Owner will not unreasonably be denied.

3.1.7.2 It is agreed that the Contractor retains all rights to any such antitrust claims to the extent of any overcharges not passed on to the State, including the right to any treble damages attributable thereto.

3.1.8 Contracts with Nonresident Persons or Partnerships or Un-admitted Foreign Corporations; Agent for Service of Process

If Contractor is a non-resident person or partnership or a foreign corporation not admitted to do business in the State, Contractor will comply with all requirements of NMSA 1978 §§ 13-4-21 through 13-4-24 for designation of an agent for service of process.

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.2.1 Since the Contract Documents are complementary, before starting each portion of the Work, the Contractor shall carefully study and compare the various Drawings and other Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Subparagraph 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating construction by the Contractor and for the purpose of discovering errors, omissions in the Contract Documents; any errors, inconsistencies or omissions discovered by the Contractor shall be reported promptly in writing to the Design Professional as a Request for Interpretation in accordance with Subparagraph 3.2.4.

3.2.1.1 Before ordering any materials or proceeding with Work, the Contractor and Subcontractors shall verify measurements at the Work site and shall be responsible for the correctness of such measurements.

3.2.2 Any design errors or omissions noted by the Contractor during this review shall be reported promptly in writing to the Owner and to the Design Professional, but it is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed Design Professional, unless otherwise specifically provided in the Contract Documents. The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations, but any suspected non conformity discovered by or made known to the Contractor shall be reported promptly in writing to the Owner and to the Design Professional. If the Contractor performs Work knowing it to be contrary to laws,

statutes, ordinances, building codes, and rules and regulations without such notice to the Design Professional and Owner, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

3.2.3 If the Contractor believes that additional cost or time is involved because of clarifications or instructions issued by the Design Professional in response to the Request for Interpretation pursuant to Subparagraphs 3.2.1 and 3.2.1.1, the Contractor shall make Claims as provided in Subparagraphs 4.3.6 and 4.3.7. If the Contractor fails to perform the obligations of Subparagraphs 3.2.1 and 3.2.1.1, the Contractor shall pay such costs and damages resulting from errors, inconsistencies or omissions in the Contract Documents or for differences between field measurements or conditions and the Contract Documents as would have been avoided if the Contractor had performed such obligations.

3.2.4 REQUEST FOR INTERPRETATION

3.2.4.1 Any question concerning a variation or deviation from the Contract Documents, including a minor change in the Work found necessary due to actual field conditions, shall be submitted to the Design Professional as a Request for Interpretation (RFI) for review and resolution before proceeding with the Work. When submitting an RFI, the Contractor must provide all information necessary for the Design Professional to promptly process, including detailed:

1. reference(s) to Specification number, Drawing page and detail, and the like;
2. description of issue;
3. drawings, photos or sketches of conditions, if necessary; and,
4. submittals or other information as necessary to facilitate resolution.

3.2.4.2 Request for Interpretation may be initiated only by the Contractor and shall be answered by Design Professional within **ten (10) days**, or other reasonable time agreed upon between the parties. All Subcontractor RFI's must be initiated through the Contractor. All answers to RFI's by the Design Professional's consultants or Owner must be initiated through the Design Professional.

3.2.4.3 If substitutions are allowed after the contract award, RFI shall not be used for any substitution request (see Subparagraph 3.4.2).

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Design Professional and shall not proceed with that portion of the Work without further written instructions from the Design Professional with concurrence from the Owner. 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 not due to negligence of the Contractor, its employees, subcontractors or their agents or employees. This paragraph shall not be deemed to create a duty on the part of the Design Professional or the Owner to the Contractor, Subcontractor or their employees to monitor for jobsite safety.

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

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

3.4 LABOR AND MATERIALS

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

3.4.2 The Contractor may request substitution of material only if:

1. allowed after the contract award;
2. all supporting information has been evaluated and approved by the Contractor;
3. includes a detailed itemized comparison of the proposed substitution with the specified product;
4. acceptance does not include substantial revision of Contract Documents, unless Contractor agrees to reimburse the Owner for those costs; and,
5. substitution request is submitted as a formal MCR with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order.

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

3.5 WARRANTY

3.5.1 The Contractor warrants to the Owner and Design Professional that materials and equipment furnished under the Contract will be of good quality and new, unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance and improper operation, or normal wear and tear and normal usage. If required by the Design Professional, the Contractor shall furnish satisfactory evidence as to kind and quality of materials and equipment.

3.6 TAXES

3.6.1 Gross Receipts Tax (GRT)

3.6.1.1 Section 7-10-4, NMSA 1978 provides that any person (as defined in Section 7-10-3, NMSA 1978) performing services for the State, as those terms are used in the Gross Receipts Tax Registration Act (Chapter 7, Article 10, NMSA 1978), must be registered and be issued an identification number with the Taxation and Revenue Department to pay the GRT.

3.6.1.2 The identification number is needed to properly complete the approval process of the Contract; therefore, so as to cause no delay in the processing, the Contractor must register with the Department. For information:

Taxation and Revenue Department
P.O. Box 630
Santa Fe, New Mexico 87504-0630
TELEPHONE: (505) 827-0700

TRD Website: www.state.nm.us/tax/

or, TRD District Office in Albuquerque, Farmington, Las Cruces, Santa Fe or Roswell.

3.6.1.3 The Contractor shall pay New Mexico Gross Receipts and other applicable taxes specific for the Work provided by the Contractor which are legally enacted when bids are received or negotiations concluded.

Exception: Contractor shall not be responsible for any Tribal Employment taxes, such as, NBAT or TERO taxes.

3.6.1.4 Failure of the Contractor to be registered with TRD for payment of Gross Receipts Tax will result in all payment to Contractor to be withheld until Contractor provides adequate evidence of registration with TRD.

3.6.2 Nonresident Contractor's Requirements for Gross Receipts Tax Surety Bond

3.6.2.1 Section 7-1-55A, NMSA 1978 provides that any person (as defined in Section 7-1-3, NMSA 1978) engaged in the construction business who does not have his principal place of business in New Mexico and enters into a prime construction contract to be performed in this State shall, at the time such contract is entered into, furnish the Taxation and Revenue Department with a surety bond or other acceptable security in a sum equivalent to the gross receipts to be paid under the contract multiplied by the applicable rate of the GRT to secure payment of the tax imposed on the gross receipts from the Contract. He shall obtain a certificate from the Taxation and Revenue Department that the requirements of this paragraph have been met.

3.6.2.2 If the total sum to be paid under the Contract is changed by ten percent (10%) or more after the date the surety bond or other acceptable security is furnished to the Director or his delegate, such person shall increase or decrease, as the case may be, the amount of the bond or security within fourteen (14) days after the change (7-1-55B, NMSA 1978).

3.6.2.3 In addition to the above requirements, the Contractor will be subject to all the requirements of Section 7-1-55, NMSA 1978.

3.7 PERMITS, FEES AND NOTICES

3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the Building Permit and other permits and governmental fees, licenses and inspections and Certificate of Occupancy necessary for proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required when bids are received, negotiations concluded, and facilities occupied. Changes or modifications to the work shall include all requirements of this paragraph.

3.7.2 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and lawful orders of public authorities applicable to performance of the Work. Certificates of Inspection, use and occupancy will be delivered to the Owner upon completion of the Work in sufficient time for occupation of the facility in accordance with the approved schedule for the Work. Contractor shall deliver a photocopy of the Building Permit will be delivered to the Design Professional and Owner as soon as it is obtained.

3.8 ALLOWANCES

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

3.8.2 Unless otherwise provided in the Contract Documents:

1. allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts.
2. Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances;
3. whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by appropriate Modification in accordance with Article 7. The amount of the Change Order shall reflect:
 - a) the difference between actual costs and the allowances under Clause 3.8.2.1; and,
 - b) changes in Contractor's costs under Clause 3.8.2.2.

3.8.3 Materials and equipment under an allowance shall be selected by the Owner in sufficient time to avoid delay in the Work.

3.9 SUPERINTENDENT

3.9.1 The Contractor shall employ a competent Superintendent, who is acceptable to the Owner, and necessary assistants who shall be in attendance at the Project site during performance of the Work. The Superintendent shall represent the Contractor, and communications given to the Superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

3.9.2 Within **ten (10) days after Notice of Award** and commencement of the Work, the Contractor shall submit to the Design Professional, for the Owner's consideration for approval, a resume and Statement of Qualification of proposed Superintendent(s) and assistants. During construction, the Contractor shall replace individuals who are no longer acceptable to the Owner and shall submit a resume and Statement of Qualification for proposed replacements.

3.10 CONTRACTOR'S SCHEDULES, LOGS, MEETINGS AND REPORTS

3.10.1 The Contractor, promptly after being awarded the Contract and before the first payment application, shall prepare and submit for the Owner's and Design Professional's information a Critical Path Construction Schedule for the Work that indicates the intended start and completion of the various construction activities, which shall be implemented and adhered to by the Contractor, Subcontractors, material suppliers and equipment suppliers. At a minimum, the schedule shall be a GANTT type schedule and shall not exceed time limits allowed by the Contract Documents with no fewer work breakdown events than line items of the Schedule of Values. The Schedule will incorporate and make provisions for significant known Owner activities, holidays and other special occasions. The Contractor will acknowledge that a reduction in activity may be necessary during the time prior to and during periods of special Owner events or occasions. The schedule shall be revised to indicate Work complete before each payment application and at appropriate intervals as required by the conditions of the Work and progress of the Work. The revised schedule shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work including, but not limited to time recovery strategies and Recovery Plan, if progress of the Work is behind schedule.

3.10.1.1 The Contractor shall perform the Work in general accordance with the most recent schedule submitted to the Owner and Design Professional.

3.10.2 The Contractor shall prepare before the second payment application and keep current, for the Design Professional's approval, a schedule of submittals which is coordinated with the Contractor's construction schedule and allows the Design Professional **fourteen (14) days**, or as otherwise agreed between the parties, to review submittals. A Submittal Log shall be maintained by the Contractor indicating for each scheduled submittal, the appropriate specification number, the date of submission, the date of approval and any re-submittals.

3.10.3 Weekly Meeting: Prior to the start of Work on the site and in no event later than the first payment application, the Contractor shall establish a weekly meeting time with the Owner and Design Professional and shall establish an agenda for the meeting. Contractor shall host the weekly job site meeting and shall maintain meeting minutes and distribute such notes to all parties in attendance and to those requested at the next meeting within **three (3) days** of the meeting. The meetings shall include but not be limited to:

1. adoption of previous week's meeting notes that include list of attendees;
2. new business;
3. old business;
4. items requiring action with those assigned to action and expected action date;
5. outstanding RFI's;
6. outstanding submittals; and,

7. other business including review of Progress Report or Payment Application if appropriate. Meetings shall be open forum, chaired by the Contractor and shall include any Subcontractors doing work or anticipating work in the near future or for any other reason, Owner, any entities that the Owner would like to attend, including User Representative or users of completed project, Design Professional, any consultant(s) to the Design Professional who have or will have any work under way associated with the consultant's specialty. The Contractor shall alert the Owner and Design Professional as to which consultants are requested to attend the next meeting and include request in the meeting minutes. Phone or web conferencing may be used if effective in the opinion of the Owner.

3.10.3.1 Progress Report: Each month, at the regularly scheduled weekly meeting that is just prior to the Contractor submitting the Payment Application for that month; the Contractor shall present a Progress Report. The Contractor prepared Progress Report shall review the Project Schedule, review the Schedule Recovery Plan if necessary, and review the Three-Week-Look-Ahead Schedule.

3.10.3.2 The Contractor prepared Three-Week-Look-Ahead Schedule shall include specific details of Work expected to be accomplished three weeks into the future, identify critical path Work to be completed, and identify potential obstacles including RFIs, submittals, material deliveries, utility hook-ups or any other event or task that might hinder the progress of the Work.

3.10.4 Emergency Contact List: The Contractor shall at the first weekly meeting, deliver to the Owner and the Design Professional an Emergency Contact List that will include emergency contacts for every company that has worked or will do work on the Project. List shall include company, main office number, after hours office number(s); and, both a primary and secondary contact name, cell number and home number. The Contractor shall keep the Emergency Contact List current and distribute the most current version to Owner and Design Professional.

3.10.5 Daily Report: The Contractor shall prepare a Daily Report each day that Contractor, Subcontractors or any other entity are on the Project. The Daily Reports shall be maintained at the site, be well organized and include:

1. report date and who prepared the report;
2. weather conditions - low temp, high temp, visibility, humidity, wind, wind direction, cloud conditions, precipitation amount, other notes;
3. companies present by name and their - number of workers, work location, total man hours that day for each company;
4. equipment - type, source, units of work done, location of work, hour meter reading;
5. material brought to site - description, units, quantity, quality, location, time;
6. visitors to site - name, company, time;
7. safety concerns - company, contact, noticed by, work activity, safety issue, requirement, outcome; and,
8. quality assurance and control - company, description of issue, specification section, issued by.

3.11 DOCUMENTS AND SAMPLES AT THE SITE

3.11.1 The Contractor shall maintain at the site for the Owner, one record copy of the As-Built Drawings, Specifications, Addenda, Modification / Change Requests, and other Modifications, in good order and marked currently to record field changes and selections made during construction, as well as, one record copy of approved Shop Drawings, Product Data, Samples and similar required submittals, and Meeting Notes and Daily Job Reports. These shall be available to the Design Professional and the Owner and shall be delivered to the Design Professional for submittal to the Owner upon completion of the Work. Information maintained in PSFA-CIMS in accordance with Subparagraph 4.2.4.1 with web access at the site shall be considered "at the site".

3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

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

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

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

3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. The purpose of their submittal is to demonstrate for those portions of the Work for which submittals are required by the Contract Documents the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review by the Design Professional is subject to the limitations of Subparagraph 4.2.7. Informational submittals upon which the Design Professional is not expected to take responsive action may be so identified in the Contract Documents. Submittals which are not required by the Contract Documents may be returned without action.

3.12.4.1 Shop Drawings, Product Data, Samples and similar shall not be submitted on a "piece meal" basis and shall be submitted in packages, in accordance with the Construction Documents, so that like or interrelated submittals, that must be compared or correlated one to another, are submitted together. Submittals not submitted as a package so that they may be compared one to another for approval or other action shall be returned to the Contractor without review but, with explanation by the Design Professional as why and what is required when re-submitted. For example, finish materials such as tile, carpet, wall covering and paint shall be submitted as a package.

3.12.4.2 If substitutions are allowed after the contract award, a submittal shall not be used for any substitution request (see Subparagraph 3.4.2).

3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Design Professional Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. Submittals which are

not marked as reviewed for compliance with the Contract Documents and approved by the Contractor may be returned by the Design Professional without action.

3.12.6 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Design Professional and, if required, by the Jurisdiction Having Authority.

3.12.8 The Work shall be in accordance with approved submittals, except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Design Professional's approval of Shop Drawings, Product Data, Samples or similar submittals, unless the Contractor has substitution approved in accordance with Subparagraph 3.4.2, or unless the Contractor informed the Design Professional in writing of such deviation at the time of submittal and the Design Professional has given written approval to the specific deviation as a minor change as a Supplemental Instruction. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Design Professional's approval thereof.

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

3.12.10 The Contractor shall not be required to provide professional services which constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a Design Professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Design Professional will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed Design Professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. The Owner and the Design Professional shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such Design Professionals, provided the Owner and Design Professional have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Subparagraph 3.12.10, the Design Professional will review, approve or take other appropriate action on submittals

only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

3.12.11 The Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

3.13 USE OF SITE

3.13.1 The Owner assumes no responsibility or liability for the physical conditions or safety of the Work site or for any improvements located on the Work site. The Contractor shall be solely responsible for providing a safe place for the performance of the Work. The Owner shall not be required to make any adjustment to either the Contract Sum or Contract Time concerning any failure by the Contractor or Subcontractor to comply with the requirements of this Paragraph 3.13.

3.13.2 The Contractor will bear the cost and make the necessary arrangements and provisions for all construction water required during the entire construction period through the Owner or otherwise.

3.13.3 The Contractor will bear the cost and make the necessary arrangements and provisions for all construction electricity including distribution required during the entire construction period through the Owner or otherwise.

3.13.4 The Contractor will bear the cost and be responsible for temporary lighting, heating and cooling for the entire project.

Exception: If available and at no premium cost to the Owner, the Owner will at no cost to the Contractor, allow the Contractor to utilize the Owner's existing lighting, heating and cooling providing Contractor will return systems to like or better condition that shall include, but not be limited to, new lamping, new filters, and the like.

3.13.5 Any temporary utility or other work done by the Contractor to accommodate Work requirements shall be removed at the conclusion of the Work and all finishes shall be repaired to match the existing, or in the areas of new construction, equal to or exceeding the requirements of the Contract Documents.

3.13.6 The Contractor shall request in writing any utility shut downs well in advance of necessity of any shut down and shall not proceed with any shut down without prior Owner approval. The Owner shall not be required to make any adjustment to either the Contract Sum or Contract Time concerning any failure by the Contractor or Subcontractor to comply with the requirements of this Subparagraph 3.13.3.

3.13.7 The Contractor shall provide and maintain a suitable temporary main field office at the Project site. The Office may be in, or a part of, the existing facility, provided that prior approval is obtained from the Owner. The Contractor will move or remove their office from the existing facility at the request of the Owner.

3.13.8 The Contractor may, if space is available, allow Subcontractors, material suppliers and equipment suppliers to provide and maintain field offices or storage trailers on the Project site for their own use. Locations and size of any office or storage trailers shall be as approved by the Contractor and Owner prior to their placement on site. The Owner or Contractor may at any time require any temporary building or trailer to be moved or removed

3.13.9 The Contractor shall conduct and confine operations at the site to areas as permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

3.13.10 All project related vehicles either company or personal vehicles may park on-site only in areas designated by the Owner and Design Professional. Parking will only be provided to the extent space on site will allow. All Contractors' parking must be well removed from normal facility traffic, and especially away from any pedestrian crossings, walkways, or drop off or loading areas.

3.13.11 All Contractor access to the Project site shall be by a designated construction entrance as directed by the contract documents, the Design Professional and the Owner, and shall be enforced by the Contractor.

3.13.12 Access to existing facility work areas, either occupied or not occupied, shall be controlled by the Owner. Every effort will be made by the Contractor to cooperate with the Owner's security requirements and policies. Access to a work area must be in accordance with the times and conditions scheduled and agreed to by all parties. Any access, other than at normally scheduled work times, must be coordinated with the Owner or Owner's appointee at least 48 hours in advance. The Owner has the right to restrict or limit access as necessary to meet their needs, especially in regard to security and safety. Each Contractor, Subcontractor, or supplier's full cooperation is required.

3.13.13 The Project working hours shall be those established by the Contract Documents and as agreed by the Owner. Any changes in project working hours such as adding shift work, extending work day hours or other similar changes must be submitted least forty-eight (48) hours in advance to the Owner for consideration.

3.13.14 Contractor shall make every effort to minimize disruptions such as noise or dust and shall provide safe access and egress to the Owner's operations, facility, portion of facility, or surrounding areas, including, but not limited to neighborhood or community, and shall, to inform and gain approval from the Owner of planned work, prepare and present to the Owner and Design Professional for Owner approval prior to beginning construction or using the site a:

1. schedule for the work, to include phasing plans, proposed hours of operations, and activities to take place on weekends, school holidays and/or other special access requirements;
2. site logistics plan, showing proposed secure and fenced areas, locations and types of temporary barricades, material storage and staging areas, school property entrances used for material deliveries, and special material or equipment storage requirements. This plan will include a description and proposed location for the Contractor's temporary office, storage trailers, Subcontractor's trailers, sanitary facilities, employee parking areas, etc.;
3. detailed construction and phasing plan, to include locations of proposed temporary dust or noise partitions, alternate emergency egress routes, temporary facilities, means and path of moving materials and equipment into the facility, and provisions for maintaining and supplying required utility services; and,
4. routing plan to maintain safe ingress and egress to all areas at all times for students, staff and public either nearby or within the Project site that shall include re-routing pedestrian ways, re-routing traffic, erect routing signs, building of bridges, barricades, pedestrian tunnels, or whatever effort that will best accommodate Owner operations and provide required protection while work is in progress ensuring that no entrances or exits are blocked, closed off, or restricted

in any way unless prior approval is granted by the Owner and the Fire Marshall or other jurisdiction having authority.

3.13.15 Contractor shall ensure that any and all of the Contractor's flammable liquids are stored outside of the building, and transported in approved containers. Paint, paint thinners, gasoline, oil, roofing materials or other flammable materials shall be stored fifty (50) feet, or more, outside of all buildings, marked as to contents and properly protected. The Contractor shall not pour flammable or toxic solvents, thinners, etc., into drains and sewers.

3.13.16 Whenever electric light for illumination purposes is found necessary for the safe progress of the work, the Contractor shall provide such lights as may be required to properly execute the work. This temporary lighting shall be constructed and arranged as not to interfere with the progress of other trades or Contractors working in the facility. This system of temporary lighting shall be erected and maintained strictly in accordance with the controlling codes and OSHA standards. The Contractor shall furnish all bulbs and temporary lighting devices required to carry on the work for all Trades under their Contract.

3.13.17 In accordance with Paragraphs 3.15, 6.3, 10.2 and others of the General Conditions, the Contractor shall be responsible for the daily removal and disposal of all rubbish, debris and trash from the site and building which results from Work. The Contractor shall provide a dumpster, or other trash removal facility, for use by their Subcontractors and all rubbish, debris and trash shall be deposited in Contractor provided containers located at an approved location on the site. There shall be no burning of trash or other open fires on the site. If in the opinion of the Owner neatness is not maintained, the Owner may following appropriate notice to the Contractor, have the area cleaned and withhold cost from any amounts owing to Contractor.

3.13.18 The Contractor shall, at the completion of Work in a given area, expeditiously remove all surplus material, equipment, and debris of every nature resulting from their operations, and put the areas in a neat, clean, and orderly condition. At Final Completion of the Project or an area of the Project, the Contractor shall final clean from top to bottom inside and out everything to the Owner's satisfaction that including plumbing fixtures, equipment, windows, floors, walls, light fixtures and the like in accordance with Paragraph 3.15 of the General Conditions.

3.13.19 The Contractor shall in accordance with Article 10, afford protection to all adjacent areas, buildings, roads, walks, and all other property adjacent to their work. Any portion of a building or other property damaged during construction operations shall be promptly, properly and thoroughly repaired and replaced without cost to the Owner.

3.13.20 Contractor shall maintain a safety plan that includes how the Contractor proposes to meet all OSHA and related requirements, details on safety equipment to be utilized, how the potential for fire and other potential hazards will be addressed, welding and cutting procedures and, how the Contractor will maintain safety related systems such as fire alarms, intercoms, and sprinklers while the Work is proceeding in accordance with Paragraph 3.3 and other parts of the General Conditions.

3.13.21 Jobsite Requirements Pertaining to Personnel:

1. All personnel on site, directly or indirectly in the employ of Contractor, are restricted from any interaction with any Owner Staff, Students, or other members of the public while on, or adjacent to Owner property except through jobsite meetings in accordance with Subparagraph 3.10.3 or as otherwise determined by the Owner;

2. shall remain in their designated work areas. Communications with any non-project related persons on or near the site shall be through project Superintendent;
3. no firearms or any other types of weapons, of any sort will be allowed on site. If any person is found to be in possession of any Firearm, of any kind, they will be directed to leave immediately and will not be allowed to return. This includes any firearms found in Company or Private vehicles, tool boxes or brought on site in any other manner;
4. it is the policy of the Owner to prohibit smoking on any occupied school campus and on a new, un-occupied, site to limit smoking to designated areas;
5. it is the policy of the Owner to prohibit use, possession, sale, and distribution of alcohol, drugs, or other controlled substances on its premises and to prohibit the presence of an individual with such substances in their body from the workplace, the Contractor shall enforce this policy; and,
6. Contractor agrees that any employee who is found in violation of requirements of this Paragraph, or of the Contract Documents, or who refuses to permit inspection shall be barred from the Project site at the discretion of the Owner in accordance with Subparagraph 13.8.4.1.

3.14 CUTTING AND PATCHING

3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

3.14.1.1 Cutting and patching shall be done by individuals skilled in working the materials involved so to prevent a reduction of visual qualities or resulting in substantial evidence of the cut-and-patch work.

3.14.2 The Contractor shall not damage or endanger a portion of the Work, fully or partially completed, or existing construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor will not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

3.15 CLEANING UP

3.15.1 The Contractor on a daily basis shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove from and about the Project waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials and shall then thoroughly clean the premises and the site to the Owner's satisfaction.

3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the cost thereof shall be charged to the Contractor in accordance with Paragraph 6.3.

3.16 ACCESS TO WORK

3.16.1 The Contractor shall provide the Owner and Design Professional access to the Work in preparation and progress wherever located.

3.17 ROYALTIES, PATENTS AND COPYRIGHTS

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

3.18 INDEMNIFICATION

3.18.1 To the fullest extent permitted by law and to the extent claims, damages, losses or expenses are not covered by Project Management Protective Liability insurance purchased by the Contractor in accordance with Paragraph 11.3, the Contractor shall indemnify and hold harmless the Owner, Design Professional, Design Professional's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Paragraph 3.18.

3.18.2 In claims against any person or entity indemnified under this Paragraph 3.18 by an employee of the Contractor, a Subcontractor, or anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Subparagraph 3.18.1 shall not be limited by a limitation on amount or type of damages compensation or benefits payable by or for the Contractor, Subcontractor under any Liability Insurance, Workers' Compensation Acts, Disability Benefit Acts or other employee benefit acts.

3.19 REPRESENTATIONS AND ASSURANCES

3.19.1 The Contractor, in addition to the requirements of the Contract Documents, represents to the Owner, as an inducement to the Owner to execute the Owner-Contractor Agreement, which representations will survive the execution and delivery of the Agreement and the completion of the Work that Contractor:

1. is financially solvent, able to pay debts, and has sufficient working capital to complete the Work;
2. is able to furnish the plant, tools, materials, supplies, equipment, skilled labor and sufficient experience and competence required to complete the Work equal to or exceeding industry standards;
3. in accordance with Subparagraph 3.1.4, is authorized and properly licensed to do business in the State of New Mexico and in the locale where the Work is located;

4. in execution of the Agreement and performance thereof is within the Contractor's duly authorized powers; and,
5. Subcontractors, material suppliers and equipment suppliers have visited the site of Work and have become familiar with the conditions under which the Work is to be performed, obtained all available information and have correlated observations and acquired information with the requirements of the Contract Documents including conditions:
 - a) bearing upon access to the site, accommodations required, transportation, disposal, handling and storage;
 - b) affecting availability of labor, materials, equipment, water, electricity, utilities and roads;
 - c) such as weather, river stages, flooding;
 - d) related to the apparent form and nature of the Work site, including the surface and sub-surface conditions; and,
 - e) that in general would be deemed by a prudent contractor to be material to the Work as to assess risk, contingencies and other circumstances.

ARTICLE 4 ADMINISTRATION OF THE CONTRACT

4.1 DESIGN PROFESSIONAL

4.1.1 The term "Design Professional" means the Architect, Engineer or other professional person lawfully licensed to practice the profession within the State of New Mexico and can fulfill the requirements of the Contract Documents within that person's licensed authority. If lawfully allowed, the Design Professional shall also mean the Design Professional's authorized representative unless the Owner has a reasonable objection.

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

4.1.3 If the employment of the Design Professional is terminated, the Owner shall employ a new Design Professional against whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the former Design Professional.

4.1.4 If there is no Design Professional, the Owner shall assume the responsibilities for Administration of the Contract Documents.

4.2 DESIGN PROFESSIONAL'S ADMINISTRATION OF THE CONTRACT

4.2.1 The Design Professional will provide administration of the Contract as described in the Contract Documents, and will be an Owner's representative (1) during construction, (2) until final payment is due and (3) with the Owner's concurrence, from time to time during the one-year period for correction of Work described in Paragraph 12.2. The Design Professional will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

4.2.2 The Design Professional, as a representative of the Owner, will visit the site at intervals appropriate to the stage of the Contractor's operations (1) to become familiar with and to keep the Owner informed about the progress and quality of the Work completed, (2) to use all reasonable efforts to guard the Owner against defects and deficiencies in the Work, and (3) to determine in general if the Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. The Design Professional will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work that is the responsibility of the Contractor to provide. The Design Professional 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 Documents, except as provided in Subparagraph 3.3.1. However, if the Design Professional becomes aware of the failure of the Contractor, Subcontractors or any other person or entity performing any of the Work to use proper construction means, methods, techniques, sequences, procedures, safety precautions and programs or failure of any of the foregoing parties to carry out the Work in accordance with the Contract Document, the Design Professional shall promptly notify the Contractor and the Owner of the deficiency.

4.2.3. The Design Professional will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Design Professional will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

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

4.2.4.2 English is the language that will be used on site to issue all directions, used in all project related meetings, and used in all project related correspondence. Contractor, Subcontractors, material suppliers and equipment suppliers' foremen and supervisory staff, must be able to read and converse in English, and be able to receive and understand all directions issued by the Owner and Design Professional.

4.2.4.3 In accordance with Subparagraph 2.1.2, with the Contract Documents, or otherwise required by Owner, the Contractor, Design Professional and Owner shall utilize PSFA-CIMS for project communications and shall:

1. create and respond to all contractual communications through the PSFA-CIMS including, but not limited to, Daily Reports, RFI's, MCR's, Meeting Minutes, Submittal Log and Punch Lists;
2. provide an adequate number of users to properly manage the Project in accordance with the Contract Documents and the Project Schedule;

3. have access to the Internet and an Internet e-mail address, of their own choice, and provide to the PSFA the names, positions, and e-mail addresses of all individuals who will have access to the PSFA-CIMS;
4. contract directly with a PSFA authorized training vendor if the limited PSFA training is not deemed sufficient to correctly and consistently use the PSFA-CIMS;
5. have adequate computing hardware and software (listed below) to run PSFA-CIMS; and,
 - a) Browser – **Internet Explorer 6.0 SP2 or 7.0**
 - b) Operating system - **Windows® XP SP2**
 - c) Display – **1024x768**
 - d) CPU – **1.4 GHz or greater**
 - e) Connection – **ISDN, T1, broadband, or DSL**
 - f) RAM – **1024 MB/1 GB or higher**
6. agree that use of this PSFA-CIMS software will not replace or change any contractual responsibilities of the Contract Documents; and,
7. have installed Adobe Acrobat 7.0, or higher .pdf converter or equal; and,
8. optionally have, but not required to have, as a benefit to sending images to Design Professional and Owner as an attachment to an RFI or other CIMS document instead of faxing or mailing, an attached scanner minimum 800 x 600 pixels and a digital camera minimum resolution of one (1) mega pixels.

For PSFA-CIMS information on installation and use of the PSFA-CIMS or for scheduling training contact the PSFA-CIMS administrator at (505)843-6272 or e-mail question to training_support@nmpsfa.org and include PSFA-CIMS support in subject line.

4.2.5 Based on the Design Professional's evaluations of the progress and quality of the Work, Contractor's Application for Payment and all other information available to the Design Professional, the Design Professional shall within **five (5) days** of receipt of a properly completed Application for Payment certify to the Owner the undisputed amount recommended for payment to the Contractor and shall provide specific reasoning for denial of disputed amounts.

4.2.6 The Design Professional will have authority to reject Work that does not conform to the Contract Documents, and shall do so unless, after consultation with the Owner, Owner instructs otherwise. Whenever the Design Professional considers it necessary or advisable, the Design Professional will have authority, subject to the Owner's approval, to require 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 Design Professional nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Design Professional to the Contractor, Subcontractors, material and equipment suppliers, their agents or employee, or other persons or entities performing portions of the Work.

4.2.7 Unless rejected in accordance with Subparagraph 3.12.4.1 or is otherwise not in compliance with Section 3 of this Agreement, the Design Professional, shall within a reasonable time not to exceed **fourteen (14) days**, or other reasonable time agreed upon by the parties, review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, for the purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Review of such submittals is conducted solely in the interest of the Owner, and shall not relieve the Contractor of responsibility for determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Design Professional's review of the Contractor's submittals shall not relieve the Contractor of any obligations of these General Conditions. The Design Professional's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Design Professional, of any construction means, methods, techniques, sequences or procedures. The Design Professional's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

4.2.7.1 The Contractor shall be responsible for cost of inordinate re-reviews, exceeding two, by Design Professional due to non-compliance with Subparagraph 3.12.6.

4.2.7.2 Rejection of any submittal due to non-compliance with Subparagraph 3.12.6 shall not be the basis for claim for a project delay.

4.2.8 The Design Professional may prepare for Owner consideration, Modification / Change Requests and Change Orders. The Design Professional shall review Contractor proposals for adjustment to the Contract Sum or Contract Time relative to a Modification / Change Request and shall either approve, reject or suggest compromise to such proposals.

4.2.8.1 The Design Professional may authorize Supplemental Instructions for minor changes in the Work as provided in Paragraph 7.4, provided there is no material change to the time, cost, specification or scope of the Work.

4.2.9 The Design Professional will conduct inspections to make recommendations to the Owner of the date or dates of Substantial Completion and the date of Final Completion, will receive, approve and forward to the Owner, for the Owner's records, written warranties, Certificates of Insurance and related documents required by the Contract and assembled by the Contractor and will issue a final Certificate for Payment upon compliance with the requirements of the Contract Documents.

4.2.10 If the Owner and Design Professional agree, the Design Professional will provide one or more project representatives to assist in carrying out the Design Professional's responsibilities at the site.

4.2.11 Subject to the claims procedures set forth in Paragraph 4.3, the Design Professional will, in the first instance, interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Design Professional's response to such requests will be made in writing within any time limits agreed upon

or otherwise with reasonable promptness. If no agreement is made concerning the time within which interpretations required of the Design Professional shall be furnished in compliance with this Paragraph 4.2, then delay shall not be recognized on account of failure by the Design Professional to furnish such interpretations until **ten (10) days** after written request is made for them.

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

4.2.13 The Design Professional's decisions on matters relating to aesthetic effect will, with the Owner's consent, be final if consistent with the intent expressed in the Contract Documents.

4.3 CLAIMS AND DISPUTES

4.3.1 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 and Contractor arising out of or relating to the Contract. Claims must be initiated by written notice. The responsibility to substantiate Claims shall rest with the party making the Claim.

4.3.2 Time Limits on Claims. Claims by either party must be initiated within **twenty-one (21) days** after occurrence of the event giving rise to such Claim or within **five (5) days** after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be initiated by written notice to the Design Professional and the other party.

4.3.3 Continuing Contract Performance. Pending final resolution of a Claim except as otherwise agreed in writing or as provided in Subparagraph 9.7.1 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

4.3.4 Claims for Concealed or Unknown Conditions. If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than **twenty-one (21) days** after first observance of the conditions. The Design Professional will promptly investigate such conditions and if they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Design Professional determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Design Professional shall so notify the Owner and Contractor in writing, stating the reasons. Claims

by either party in opposition to such determination must be made within **twenty-one (21) days** after the Design Professional has given notice of the decision. If the conditions encountered are materially different, the Contract Sum and Contract Time shall be equitably adjusted, but if the Owner and Contractor cannot agree on an adjustment in the Contract Sum or Contract Time, the adjustment shall be referred to the Design Professional for initial determination, subject to further proceedings pursuant to Paragraph 4.4.

4.3.5 Claims for Additional Cost. If the Contractor wishes to make Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Paragraph 10.6.

4.3.6 If the Contractor believes additional cost is involved for reasons including but not limited to (1) a written interpretation from the Design Professional, (2) an order by the Owner to stop the Work where the Contractor was not at fault, (3) a written order for a minor change in the Work issued by the Design Professional, (4) unjustified failure of payment by the Owner, (5) termination of the Contract by the Owner, (6) Owner's suspension or (7) other reasonable grounds, Claim shall be filed in accordance with this Paragraph 4.3.

4.3.7 CLAIMS FOR ADDITIONAL TIME

4.3.7.1 If the Contractor wishes to make Claim for an increase in the Contract Time, it shall be submitted as a Modification / Change Request in accordance with Article 7. In the case of a continuing delay only one Claim is necessary.

4.3.7.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction. Substantiation must include supporting evidence from the U.S. Weather Bureau or similar for the previous ten (10) year averages for the locale of the Project, as well as, evidence supported by original project schedule and daily job logs that specific Work events falling on the critical path were delayed.

4.3.8 Injury or Damage to Person or Property. If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding **five (5) days** after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

4.3.8.1 The Contractor shall promptly notify the Owner and Design Professional in writing of any claims received by the Contractor for personal injury or property damage related to the Work.

4.3.9 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are changed in a proposed Modification / Change Request by more

than fifteen percent (15%), the applicable unit prices shall be equitably adjusted in accordance with Article 7.

4.3.10 Claims for Consequential Damages. The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes damages incurred by the:

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

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Subparagraph 4.3.10 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

4.4 RESOLUTION OF CLAIMS AND DISPUTES

4.4.1 Decision of Design Professional. Claims, including those alleging an error or omission by the Design Professional, but excluding those arising under Paragraphs 10.3 through 10.5, shall be referred initially to the Design Professional for decision. An initial decision by the Design Professional shall be required as a condition precedent to mediation, arbitration or litigation of all Claims between the Contractor and Owner arising prior to the date final payment is due, unless **thirty (30) days** have passed after the Claim has been referred to the Design Professional with no decision having been rendered by the Design Professional. The Design Professional will not decide disputes between the Contractor and persons or entities other than the Owner.

4.4.2 The Design Professional will review Claims and within **ten (10) days** of the receipt of the Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Design Professional is unable to resolve the Claim if the Design Professional concludes that, in the Design Professional's sole discretion, it would be inappropriate for the Design Professional to resolve the Claim.

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

4.4.4 If the Design Professional requests a third party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within **ten (10) days** after receipt of such request, and shall either provide a response on the requested supporting data, advise the Design Professional when the response or supporting data will be furnished or advise the Design

Professional that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Design Professional will either reject or approve the Claim in whole or in part.

4.4.5 The Design Professional will approve or reject Claims by written decision, which shall state the reasons therefore and which shall notify the parties of any change in the Contract Sum or Contract Time or both. The approval or rejection of a Claim by the Design Professional shall be final and binding on the parties but subject to mediation and arbitration.

4.4.6 A written decision of the Design Professional shall state that (1) the decision is final, but subject to mediation and arbitration and (2) a demand for arbitration of a Claim covered by such decision must be made within **thirty (30) days** after the date on which the party making the demand receives the final written decision, then failure to demand arbitration within said **thirty (30) days** period shall result in the Design Professional's decision becoming final and binding upon the Owner and Contractor. If the Design Professional renders a decision after arbitration proceedings have been initiated, such decision may be entered as evidence, but shall not supersede arbitration proceedings unless the decision is acceptable to all parties concerned.

4.4.7 Upon receipt of a Claim against the Contractor or at any time thereafter, the Design Professional or the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Design Professional or the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

4.5 MEDIATION

4.5.1 Any Claim arising out of or related to the Contract, except those waived as provided for in Subparagraph's 4.3.10, 6.2.3, 9.11.4, and 9.11.5 shall, after initial decision by the Design Professional or **thirty (30) days** after initial decision by the Design Professional or **thirty (30) days** after submission of the Claim to the Design Professional, be subject to mediation as a condition precedent to arbitration or the institution of legal or equitable proceedings by either party.

4.5.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be in accordance with the procedures of the New Mexico Public Works Mediation Act (NMSA §13-4C-1 et seq.) except that before any party may select a mediator it must confer in good faith with the other party concerning the selection of a mutually acceptable mediator. The request may be made concurrently with the filing of a demand for arbitration but, in such event, mediation shall proceed in advance of arbitration or legal or equitable proceedings, which shall be stayed pending mediation for a period of **sixty (60) days** from the date of notice of mediation session, unless stayed for a longer period by agreement of the parties or court order.

4.5.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Settlement Agreements reached in mediation and signed by all parties involved in the dispute shall be enforceable in any court having jurisdiction thereof.

4.6 ARBITRATION

4.6.1 Any Claim arising out of or related to the Contract, except those waived as provided for in Subparagraphs 4.3.10, 6.2.3, 9.11.4 and 9.11.5, shall after decision by the Design Professional or **thirty (30) days** after submission of the Claim to the Design Professional, be subject to arbitration. Prior to arbitration, the parties shall endeavor to resolve disputes by mediation in accordance with the provisions under Paragraph 4.5.

4.6.2 Claims not resolved by mediation shall be decided by arbitration which, unless the parties mutually agree otherwise, shall be in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association currently in effect. The Demand for Arbitration shall be filed in writing with the other party to the Contract and with the American Arbitration Association, and a copy shall be filed with the Design Professional.

4.6.3 A Demand for Arbitration shall be made within the time limits specified in Subparagraphs 4.4.6 and 4.6.1 as applicable, and in other cases within a reasonable time after the Claim has arisen, and in no event shall it be made after the date when institution of legal or equitable proceedings based on such Claim would be barred by the applicable statute of limitations as determined pursuant to Paragraph 13.7.

4.6.4 Claims and Timely Assertion of Claims. The party filing a Notice of Demand for Arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

4.6.5 Arbitration proceedings under this Agreement may be consolidated or joined with arbitration proceedings pending between other parties if the arbitration proceedings arise out of the same transaction or relate to the same subject matter. Consolidation will be by order of the arbitrator, in any of the pending cases, or if the arbitrator fails to make such an order, the parties may apply to any court of competent jurisdiction for such an order. Inclusive to this Subparagraph are the Owner, the Design Professional, the Contractor, all subcontractors, material suppliers, equipment suppliers, engineers, designers, lenders, sureties, and all other parties concerned with the construction of the Project are bound, each to each other, by this Subparagraph, provided such party has signed this Agreement or has signed an agreement which incorporates this Agreement by reference or signs any other agreement to be bound by this arbitration clause.

4.6.6 Judgment on Final Award. The award rendered by the arbitrator or arbitrators shall be final and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

ARTICLE 5 SUBCONTRACTS

5.1 DEFINITIONS

5.1.1 A Subcontractor is a person or entity who has a direct or indirect contract with the Contractor to perform a portion of the Work regardless of contractual tiers below the prime contract between the Owner and Contractor. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the

Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

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

5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after Notice of Intent to Award, shall furnish in writing to the Owner through the Design Professional the names of entities and key personnel (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Design Professional will promptly reply to the Contractor in writing stating whether or not the Owner or the Design Professional, after due investigation, has reasonable objection to any such proposed entity or person. Failure of the Owner or Design Professional to reply promptly shall constitute notice of no reasonable objection. The requirements of this Subparagraph 5.2.1 shall supplement Subcontractor listing at bid as required by §13-4-34 NMSA 1978.

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

5.2.3 If the Owner or Design Professional has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Design Professional has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by the change, and an appropriate Modification in accordance with Article 7 shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

5.2.4 The Contractor shall not change a Subcontractor, person or entity previously selected if the Owner or Design Professional makes reasonable objection to such substitute. Any substitutions of a Subcontractor will comply with the New Mexico Subcontractor Fair Practices Act to the extent that the Subcontractors Fair Practices Act is applicable.

5.3 SUBCONTRACTUAL AND SUPPLIER RELATIONS

5.3.1 By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including performance of Work, responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Design Professional. Each subcontract and supplier agreement shall preserve and protect the rights of the Owner and Design Professional under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each

Subcontractor to enter into similar agreements with suppliers. The Contractor shall make available to each proposed Subcontractor and supplier, prior to execution of the Agreement, copies of the Contract Documents to which the Subcontractor and suppliers where appropriate will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement which may be at variance with the Contract Documents.

5.3.2 Nothing contained in Subparagraph 5.3.1 or elsewhere in the Contract Documents shall create any contractual relationship with or cause of action in favor of a third party against the Owner.

5.3.3 Each entity intending to do work on the Project shall, prior to bid, be properly licensed according to the requirements of the Construction Industries Licensing Act, Chapter 60, Article 13 NMSA 1978 and shall ensure to the Contractor and to the Owner that such license shall remain in effect for the duration of the Work and warranty periods.

5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS AND SUPPLIER AGREEMENTS

5.4.1 Each subcontract or supplier agreement for a portion of the Work may be assigned by the Contractor to the Owner provided that assignment is:

1. effective only after termination of the Contract by the Owner for cause pursuant to Paragraph 14.2 and only for those subcontract or supplier agreements which the Owner accepts by notifying the Subcontractor, supplier and the Contractor in writing: and
2. subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

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

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these, including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Paragraph 4.3.

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

6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The

Contractor and Subcontractors shall participate with other separate contractors, the Owner's own forces and the Owner in reviewing and coordinating their construction schedules when directed to do so. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised. The Contractor and Subcontractors shall not delay or cause additional expense to another contractor by neglecting to perform correctly or to an agreed schedule. In the absence of a schedule mutually agreed upon by all parties, the Owner may create a binding schedule for all parties or take other appropriate action to avoid unnecessary delay and damages.

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

6.1.5 Unless otherwise provided in the Contract Documents, the Owner's separate contractor shall test, adjust, and balance (TAB) the HVAC system to design requirements in coordination with the Contractor's or Subcontractors own forces. The TAB work shall integrate with the Contractor's or Subcontractor's installation of the Work, equipment start-up and operational testing as required by the Contract Documents. Coordination and cooperation for this work and other similar Owner contractor work shall be in accordance with Paragraph 6.2.

6.2 MUTUAL RESPONSIBILITY

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

6.2.2 If part of the Contractor's Work depends on proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Design Professional and Owner apparent discrepancies or defects in such other construction that would render it unsuitable for proper execution and results. Failure of the Contractor to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

6.2.3 The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a separate contractor because of delays, improperly timed activities or defective construction of the Contractor. The Owner shall be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities and damage to the Work or defective construction of the Owner or a separate Owner contractor. Should the Contractor sustain any personal injury or damage to property through any act or omission of any other Contractor having a contract with the Owner, the Contractor sustaining damage will have no claim or cause of action against the Owner for such damage and hereby waives any such claim.

6.2.4 The Contractor shall promptly remedy damage caused by the Contractor to completed or partially completed or existing construction or to property of the Owner or separate contractors as provided in Subparagraph 10.2.5.

6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Subparagraph 3.14.

6.3 OWNER'S RIGHT TO CLEAN UP

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

ARTICLE 7 CHANGES IN THE WORK

7.1 GENERAL

7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Modification / Change Request, or by Supplemental Instruction for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

7.1.2 Any material change in the Work require a Modification / Change Request (MCR) that has been finalized by agreement by the Owner and based on proposal from the Contractor and recommendation of the Design Professional. A Change Order, required to modify the Purchase Order, shall accumulate approved MCRs, and must be approved by the Owner, Contractor and Design Professional. Supplemental Instruction for a minor change in the Work, will not create cost or time effect on the Project in accordance with Subparagraph 7.4.1, and may be issued only by the Design Professional.

7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Modification / Change Request or Supplemental Instruction.

7.2 MODIFICATON / CHANGE REQUEST

7.2.1 A Modification / Change Request or MCR is a written document that may be initiated by the Contractor, Design Professional or Owner that identifies why there is a potential change in the Work that may require an adjustment, to the Contract Sum or Contract Time, or both, and suggests how that the change should take place. Following the initiation of a MCR by one of the parties, the Owner:

1. must agree to MCR's content and feasibility and if in agreement may authorize the MCR to; proceed with estimates of costs only; or proceed with the Work with estimates of costs to follow in accordance with Subparagraph 7.2.4;
2. will consider proposal(s) from the Contractor in accordance with Article 7 for adjustment to Contract Sum or Contract Time, if any; and,

3. shall authorize the Work to proceed if not previously authorized in accordance with Subparagraph 7.2.4 and authorize adjustment to Contract Sum in accordance with Paragraph 7.2 or, shall reject the MCR and replace with another or, stop all action on the MCR.

7.2.1.1 A MCR is required for any modification or change in the Work that:

1. may affect the Contract Sum or Time;
2. alters the Work by substitution or any other way not considered minor as defined by Paragraph 7.4; or,
3. otherwise materially affect the Work or intended function of the Project including a change to aesthetics.

7.2.1.2 A MCR when finalized by Owner approval, may modify the Contract without invalidating the Contract and may order changes in the Work within the general scope of the Contract with Contract Sum and Contract Time. Owner approval of a MCR:

1. shall adjust the Contract Sum accordingly; and,
2. will begin Owner consideration of related adjustment to Contract Time, if any;
3. and shall be included into a Change Order upon approval of the parties in accordance with Paragraph 7.3.

7.2.2 A MCR shall be used to:

1. approve a modification or change to the Work;
2. accumulate data such as cost and time impacts before authorizing a modification or change to the Work;
3. direct Work to be done with cost, time, etc. to follow in the absence of total agreement on the terms of a modification or change to the Work or to prevent delay of the Work; and,
4. stop all action on a proposed modification or change to the Work.

7.2.3 If Work defined by a MCR requires an adjustment to Contract Sum or Contract Time, the Contractor shall, within **ten (10) days** of the date of Owner issuance of MCR or delivery of MCR to Contractor if that date is later, prepare and deliver to the Design Professional a proposal for such adjustment based on:

1. unit prices or lump sum allowances stated in the Contract Documents;
2. unit price or lump sum determined in accordance with Subparagraph 7.2.5;
3. provision in the MCR as determined by the Owner and in accordance with Subparagraph 7.2.5; or,
4. a manner agreed upon by the parties and consistent with Subparagraph 7.2.5 and these General Conditions.

7.2.4 Upon receipt of a Modification / Change Request authorized by the Owner to "Proceed with the Work with costs to follow", the Contractor shall consider the MCR a directive and promptly proceed with the change in the Work involved and, provide a proposal for adjustment to Contract in accordance with Subparagraph 7.2.3.

7.2.5 Allowable Costs and Fees: If a proposal to adjust the Contract Sum exceeds \$200 and if not otherwise provided in the MCR or Contract Documents, the Contractor, shall provide an itemized accounting* together with appropriate supporting data that include :

1. quantities and unit costs of materials, including cost of transportation, whether incorporated or consumed;
2. quantities and unit costs of labor, including labor burdens such as social security and unemployment insurance, fringe benefits such as health insurance required by agreement or custom (Labor Burdens shall not include retirement plans qualified by minimum employment time, organizational fees or dues, legal or related expenses, information technology training and the like);
3. quantities and unit utilization or rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
4. quantities and unit costs of on-site supervision and field office personnel directly attributable to production of the change and not included in Subparagraph 7.2.5.6;
5. quantities and unit costs of and insurance, use tax or similar related to the Work;
6. Overhead and Profit**;
7. quantities and unit premiums for all bond costs and permit fees on items 1 through above; and,
8. State Gross Receipts Tax (GRT); and,

* If pricing compounds, the compounding order shall be the same as listed items 1 - 8 of this Sub-paragraph.

** Overhead and Profit (O&P): Overhead may include, but is not limited to, project management costs such as time keeping, project accounting, main office expenses, estimating, processing of documents, computers, minor tools and incidentals, may be added on top of items 1 through 5 above it shall include the Fee proposed by the CM at Risk in its response to the Request for Proposals plus an allowance for Overhead, provided that combined they do not exceed the following:

Subtotal before applying overhead and profit	Under \$2000	\$2000 to \$10,000	\$10,001 to \$50,000	Over \$50,001
Contractor - For work performed by own forces	18%	16%	14%	12%
Contractor - For subcontracted work.	11%	9%	6%	5%
For work performed by 1 st tier Subcontractor	18%	15%	12%	9%
For work performed by 2 nd tier Subcontractor	10%	8%	5%	4%
Subcontractor - Maximum aggregate O&P allowed over cost regardless of number of	29%	24%	18%	14%

tiers.

7.2.6 Time-and-Material: If for the purpose of authorizing Work to proceed upon issuance on an MCR prior to the Owner receiving proposal of costs, so that labor or material costs are to be accumulated for later inclusion into a proposal to adjust the contract sum, the MCR must clearly state conditions and limitations of time-and-material work to proceed under the change in Work with costs to follow provision of the MCR. At a minimum, the MCR shall state the maximum allowable cost. In addition, the Daily Job Report must reflect all appropriate detail on related Work, such as work performed that day, number of workers, materials received and similar. A separate daily worker log must also be maintained that will be included in the proposed cost of the MCR. The daily worker log for each MCR, must list each worker, the type of work performed and the hours worked, and must be signed-off daily by an individual, agreed upon in the MCR, that may be the Project Superintendent. In accordance with this Paragraph 7.2, proposal of costs shall be delivered by the Contractor within Ten (10) days of issuance of MCR.

7.2.7 Audit: The Owner shall be entitled to audit the books and records of a Contractor or any Subcontractor for any time-and-material or negotiated cost, such as those associated with a change in the Work, to the extent that such books and records relate to the proposal or performance of such Work. Such books and records shall be maintained by the Contractor for a period of three years from the date of final payment under the prime Contract and by the Subcontractor for a period of three years from the date of final payment under the subcontract, unless a shorter period is otherwise authorized in writing.

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

7.2.9 A proposed adjustment to Contract Sum and Contract Time submitted by Contractor for a MCR indicates agreement of the Contractor therewith for the proposed Modification. The Design Professional shall make recommendation to the Owner on the appropriateness of the proposed adjustment. The Owner may, after evaluation of the proposal and review of the Design Professional's recommendation, accept the Contractor's proposed adjustment to Contract Sum and finalize the MCR. If Owner approves MCR, it shall be recorded for inclusion into a Change Order.

7.2.10 If the Contractor does not respond promptly with a proposal for adjustment to Contract Sum and Contract Time relative to an MCR or disagrees with the method for adjustment, or; if there are amounts or terms in dispute for such changes in the Work; the Design Professional on the basis of reasonable expenditures or savings of those performing the Work attributable to the change in the Work shall make a determination for purpose of settlement of dispute. That determination of adjustment to the Contract Sum and Contract Time shall be presented to the Owner and the Contractor for consideration. If the Owner or the Contractor do not agree with the Design Professional's determination, the provisions of Subparagraph 7.2.11 shall apply. When the Owner and Contractor agree with the determination made by the Design Professional concerning the

adjustments in the Contract Sum, such agreement shall be effective immediately upon Contractor's acceptance in writing and Owner's approval of MCR.

7.2.11 The Owner shall, within **fifteen (15) days** of the determination made by the Design Professional regarding adjustment to Contract Sum or Contract Time in accordance with Subparagraph 7.2.10, either:

1. accept the Design Professional's determination and, approve the MCR with the adjustment recommended by the Design Professional and record the MCR as approved by the Owner to be included into a Change Order; or
2. approve the MCR with an adjustment the Owner determines to be appropriate based on available information and record the MCR as approved by the Owner to be included into a Change Order.

Adjustment to Contract Sum in accordance with this Subparagraph 7.2.11 shall be subject to the right of Contractor to disagree and assert a claim in accordance with Paragraph 4.3.

7.2.12 Partial agreement of an adjustment to Contract Sum or Contract Time relative to a MCR may be allowed by the Owner only if adjustment to Work, requested by the MCR, can be subdivided into independent parts. In the event of such subdivision; MCR shall be broken into separate parts with alpha suffixes such as MCR 2A, MCR 2B and so on.

7.2.13 Periodically, approved MCR's shall be accumulated by the Owner or Design Professional into a Change Order in accordance with Paragraph 7.3.

7.3 CHANGE ORDERS

7.3.1 A Change Order is a written instrument prepared by the Design Professional and signed by the Owner, Contractor and Design Professional, stating their agreement upon:

1. change in the work as made by finalized Modification / Change Request(s) that has been previously approved by the Owner or authorized in accordance with Sub-paragraphs 7.2.8 or 7.2.9.;
2. amount of the adjustment, if any in the Contract Sum resultant of approved MCR(s);
3. extent of the adjustment, if any, in the Contract Time related to approved MCR(s); or,
4. if disagreement on adjustment in the Contract Time, parties agree to postponement of inclusion of any adjustment to Contract Time into a Change Order; however, all Contractor proposed or Owner offered adjustment(s) to time shall be incorporated into a Change Order prior to Substantial Completion in accordance with Subparagraph 9.8.6.

POSTPONEMENT OF ADJUSTMENT TO CONTRACT TIME LANGUAGE:

"At the time of this Change Order, there is no agreement on adjustment to the Contract Time related to MCR(s) XX, XX, XX and XX. The Contractor, without prejudice and without waiving any rights to such claim for adjustment to Contract Time in relation to these MCR(s), agrees to postpone claim in accordance with Paragraph 7.3 of the General Conditions."

7.3.2 Methods used in determining adjustments to the Contract Sum include those listed in Paragraph 7.2. Proposals submitted that do not follow the requirements under Paragraph 7.2 will be returned to be resubmitted prior to processing.

7.4 MINOR CHANGES IN THE WORK

7.4.1 The Design Professional will have authority to order Supplemental Instructions for minor changes in the work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

ARTICLE 8 TIME

8.1 DEFINITIONS

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

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

8.1.3 The date of Substantial Completion is the date certified by the Design Professional in accordance with Paragraph 9.8.

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

8.2 PROGRESS AND COMPLETION

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

8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance. Unless the date of commencement is established by the Contract Documents, a Notice to Proceed shall be given by the Owner that shall establish the commencement of the Contract Time as provided by the Contract Documents.

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

8.2.4 The Owner shall not be liable to the Contractor for additional time or money if the Contractor submits a progress report or construction schedule expressing an intention to achieve completion of the Work prior to the Contract Time and then is not able to achieve intended accelerated schedule regardless of the reason.

8.3 DELAYS AND EXTENSIONS OF TIME

8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Design Professional, or of a separate contractor employed by the Owner, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control, or by delay authorized by the Owner pending mediation and arbitration, or by other causes which the Design Professional and the Owner determine may justify delay, then the Contract Time shall be extended by Modification in accordance with Article 7 for such reasonable time as the Design Professional in concurrence with the Owner may determine.

8.3.2 Extensions of time not associated with modifications or changes to the Work shall not be allowed to increase the Contract amount for overhead or for any other reason and shall strictly apply toward liquidated damages.

8.3.3 Claims relating to time shall be made in accordance with applicable provisions under Paragraph 4.3.

8.4 CONTRACT TIME AND LIQUIDATED DAMAGES

8.4.1 The Contractor agrees that the Work will be prosecuted regularly, diligently and without interruption at such rate of progress as will ensure completion within the Contract Time. It is expressly understood and agreed, by and between the Contractor and the Owner, that the Contract Time is a reasonable time for completion of the Work, taking into consideration the average climate range and usual industrial conditions prevailing in the locality of the Project. If the Contractor neglects, fails or refuses to complete the Work within the Contract Time, or any proper extension granted by the Owner, then the Contractor agrees to pay the Owner the amount specified in the Contract Documents, not as a penalty, but as liquidated damages.

8.4.2 The parties agree that the amount of the likely damage to the Owner for such delay is difficult to ascertain at the time of execution of this Agreement, but that a reasonable estimate of such damages for delay is set forth in the contract Documents. Liquidated damages may be deducted from any monthly progress payments due to the Contractor or from other monies being withheld from the Contractor when a reasonable estimate of expected Substantial Completion can be determined by the Owner.

8.4.3 Final accounting of Liquidated Damages shall be determined at Substantial Completion and the Contractor and Surety are liable for any liquidated damages over and above unpaid balance held by the Owner.

ARTICLE 9 PAYMENTS AND COMPLETION

9.1 CONTRACT SUM

9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

9.2 SCHEDULE OF VALUES

9.2.1 Before the first Application for Payment, the Contractor shall submit to the Design Professional a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Design Professional may require. Support data shall include accounting of all Project costs distributed to Level 2 UniFormat™ convention. The schedule of values, upon acceptance by the Design Professional with the Owner's prior approval, shall be used as a basis for reviewing the Contractor's Application for Payment.

9.2.1.1 Gross Receipts Tax shall be indicated for the total amount of all items included in the Schedule of Values. In the event of a GRT rate change, the Contractor shall submit an MCR requesting an adjusted amount on balance to complete the Contract.

9.2.1.2 If Public Schools Capital Outlay Public School Facilities Authority (PSFA) funding is provided to the Project, individual line items of the Schedule of Values shall be allocated to the various portions of the PSFA Work, prepared in such form and supported by such data to substantiate its accuracy as the Design Professional and the PSFA may require.

9.2.2 To protect the Owner from the significant liability and arduous accounting efforts required by lingering documentation and close-out work, the Schedule of Values shall provide a separate line item titled "Documentation and Close-Out" to provide a value consistent with and appropriate to required documentation provisions throughout the Contract including those required by Subparagraph 4.2.4.3 and Paragraph 9.10. The value of the Documentation and Close-Out line item shall not be less than the following:

For a total Contract amount excluding tax of:	Documentation and Close-Out amount
less than \$20,000	\$0
20,001 - 75,000	6,000
75,001 - 100,000	8,000
100,001 - 200,000	10,000
200,001 - 350,000	15,000
350,001 - 500,000	25,000
501,001 - 1,000,000	50,000
1,000,001 - 1,500,000 -	70,000
1,500,001 - 2,000,000	90,000
2,000,001 - 3,000,000	120,000
for each additional million	add 30,000

9.2.2.1 If requested in writing by the Contractor, and in the sole opinion of the Owner, the Contractor is in full compliance with the documentation requirements of the Contract including the provisions of Subparagraph 4.2.4.3, the Documentation and Close-Out Schedule of Value line item may be reduced each month prior to Substantial Completion up to five percent (5%) of the originally scheduled amount or one thousand dollars (\$1,000), whichever is greater, providing that the Documentation and Close-Out line item is not reduced to less than fifty percent (50%) of the original amount required until which time that Close-Out is complete as required by Paragraph 9.10.

9.3 APPLICATIONS FOR PAYMENT

9.3.1 No later than the 25th of each month, the Contractor shall submit to the Design Professional an itemized Application for Payment for operations completed in accordance with the Schedule of Values for that month. Such application shall be supported by such data substantiating the Contractor's right to payment as the Owner or Design Professional may require such copies of requisitions from Subcontractors and material suppliers. No Applications for Payment will be processed until the initial Schedule of Values is received and approved by Design Professional with concurrence from the Owner and for subsequent payment applications; the Project Schedule has been updated in accordance with Subparagraph 3.10.1.

9.3.1.1 No Application for Payment may include more than:

1. ninety-five percent (95%) of the scheduled value of any work requiring testing prior to testing and verification of testing by the Design Professional to meeting requirements of the Contract Documents;
2. ninety percent (90%) of the scheduled value for systems that require, as a part of acceptance of the Work, testing or balancing including, but not limited to, mechanical heating, air-conditioning and electrical distribution until testing, balancing or other verification required by the Contract Documents has been completed and verified as acceptable by the Design Professional.

9.3.1.2 Such applications may not include requests for payment for portions of the Work for which the Contractor does not intend to pay to a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation into the Work. Any payments for such materials or equipment shall be conditioned upon the Contractor's demonstration that they are adequately protected from weather, damage, vandalism and theft and that such materials or equipment have been inventoried and stored in accordance with procedures established by or approved by the Owner. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing and with sufficient Contractor provided insurance against loss, and with Owner named as co-insured, to cover the value of stored materials and their transport to the Project.

9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall be free and clear of claims, security

interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, material suppliers and equipment relating to the Work. The Contractor additionally warrants that all As-Built drawings accurately depict completed Work covered by an Application for Payment, inclusive of all trades and inclusive of, but not be limited to, actual locations and installed types, brand, model number and similar of all Work including ducts, pipes, conduit, equipment, walls and site utilities.

9.4 CERTIFICATES FOR PAYMENT

9.4.1 Application for Payment must be submitted to the Design Professional no later than the 25th of the month for which the application is being made. The Design Professional will review with the Owner the accuracy and appropriateness of the application and, within **five (5) days** after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Design Professional determines is properly due, or notify the Contractor and Owner in writing of the Design Professional's reasons for withholding certification in whole or in part as provided in Subparagraph 9.5.1. In no event will the Owner accept or process a Certification for Payment received after the 10th of the month following the month for which the application is being made. Certifications for Payment received after the 10th of the month "owner-cut-off-date" will be processed along with the following month's applications and will not be considered in default of the provisions of Subparagraph 9.4.3,

9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Design Professional to the Owner, based on the Design Professional's evaluation of the Work and the data comprising the Application for Payment, that the Work has progressed to the point indicated and that, to the best of the Design Professional's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents and that As-Built drawings are current to actual Work completed. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Design Professional. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified.

9.4.3 The Owner will issue payment to the Contractor in the amount certified in the approved Certificate for Payment within **twenty-one (21) days** from the end of the progress payment period which shall be the end of the month for which the Certificate of Payment is made. The **five (5) days** allowed the Design Professional for review in Subparagraphs 4.2.5 and 9.4.1 are partially included in the **twenty-one (21) day** period.

9.5 DECISIONS TO WITHHOLD CERTIFICATION

9.5.1 The Design Professional may withhold a Certificate for Payment and may assess Liquidated Damages in accordance with Paragraph 8.4, in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Design Professional's opinion the representations to the Owner required by Subparagraph 9.4.2 cannot be made. If the Design Professional is unable to certify payment in the amount of the Application, the Design Professional will notify the Contractor and Owner as provided in Subparagraph 9.4.1. If the Contractor and Design Professional cannot agree on a revised amount, the Design Professional will promptly issue a Certificate for Payment for the amount for which the

Design Professional is able to make such representations to the Owner. The Design Professional may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Design Professional's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Subparagraph 3.3.2, because of:

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

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

9.6 PROGRESS PAYMENTS

9.6.1 After the Design Professional has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents.

9.6.2 The Contractor shall promptly pay each Subcontractor and supplier, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled, reflecting percentages actually retained, if any, from payments to the Contractor on account of such Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments in a similar manner. It is the Contractor's responsibility to comply with § 57-28-5(C) of the New Mexico Retainage Act, requiring Contractors to make prompt payment to Subcontractors for work performed within **seven (7) days** after receipt of payment from the Owner or pay interest for failing to make prompt payment.

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

9.6.4 Neither the Owner nor Design Professional shall have an obligation to pay or to see to the payment of money to a Subcontractor except as may otherwise be required by law.

9.6.5 Payment to material suppliers shall be treated in a manner similar to that provided in Subparagraphs 9.6.2, 9.6.3 and 9.6.4.

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

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

9.7 FAILURE OF PAYMENT

9.7.1 If the Owner does not pay the Contractor the amount approved by the Design Professional or the Design Professional does not approve the application for payment then, within **forty-five (45) days** from the end of the progress payment period, Contractor may, upon **seven (7) additional days** written notice to the Owner and Design Professional, stop the Work until payment of the amount owing has been received. Unless Contractor's action was improper or if the amount claimed is shown not to have been due, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents. In the event of a wrongful Stop-Work, the Contractor shall remain responsible to the Owner for delivering the Project in accordance with the Contract Documents.

9.8 SUBSTANTIAL COMPLETION

9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is complete and in compliance with the Contract Documents except for minor items so that the Owner can completely occupy or fully utilize the Work for its intended use. Owner's Occupancy under conditional approval by public authorities having jurisdiction over the Work, or occupancy of a facility or otherwise utilizing the Work under duress, shall not be considered Substantial Completion.

9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall promptly prepare and submit to the Design Professional a comprehensive Contractor's Punch List inclusive and all incomplete and non-compliant Work to be completed or corrected prior to final payment, as well as, the requirements of Subparagraph 9.10.2.

9.8.3 The Contractor shall submit along with the punch list a separate and detailed Closeout Schedule indicating the date of Final Completion and all work to be completed before Final Completion including Close-Out requirements as provided in Paragraph 9.10. Failure to include any item on punch list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

9.8.4 Upon receipt of the Contractor's Punch List and Closeout Schedule, the Design Professional will within **ten (10) days** make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Design Professional's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof, as it is fully intended and designed to be used, the Contractor shall complete or correct such item upon inspection by the Design Professional to determine Substantial Completion. In the event the Work does appear Substantially Complete, the Design Professional will review the Contractor's Punch List for completeness required for issuance of Substantial Completion. The Contractor shall be responsible for cost of excessive Design Professional time and effort in completing list of incomplete and non-compliant Work not included in Contractor's Punch List or otherwise due to Contractor's neglect of responsibilities of Subparagraph 9.8.2.

9.8.5 When the Work or designated portion thereof is substantially complete, the Design Professional will prepare a Certificate of Substantial Completion, with the Owner's prior approval, which shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate in accordance with Subparagraph 9.8.2..

9.8.6 Warranties shall be in accordance with this Subparagraph 9.8.6 and Paragraph 12.2 and shall include all components and equipment required by the Contract Documents. All Work shall be warranted for the greater of:

1. a minimum of one (1) year from the date of Substantial Completion;
2. one (1) year from the date of first installation in accordance with Subparagraph 12.2.2.2;
3. one (1) year from the date of replacement due to failure such that; each component of the Work must not fail for a one (1) year period regardless of the date of Substantial Completion;
4. that required by the Contract Documents; or,
5. that provided in the Certificate of Substantial Completion that will become an addendum to the Contract.

Owner and Contractor may, by mutual agreement, amend the Contract at Substantial Completion to include Performance Bonding, extended warranty, on-site maintenance, subsequent testing, scheduled replacement or other mutually agreeable terms.

9.8.7 Any postponement(s) of inclusion(s) of adjustment(s) to Contract Time in accordance with Subparagraph 7.3.1.4 shall be included into a MCR for agreement and then into a Change Order prior to Certificate of Substantial Completion. If the Contractor and the Owner do not agree on Contractor proposal, the Design Professional on the basis of evidence that critical path of work flow was reduced or expanded attributable to the change(s) in the Work with evidence being differences in Contractor's initial and current schedules and other evidence, shall make an determination for purpose of settlement of dispute. That determination of adjustment to the Contract Time shall be presented to the Owner and the Contractor for consideration. When the Owner and Contractor agree with the determination made by the Design Professional concerning the adjustments in the Contract Time such agreement shall be effective immediately, upon Contractor's written approval, and shall be recorded by preparation and execution of an appropriate MCR that shall be approved by the Owner. If after **five (5) days** the Owner or Contractor cannot agree with the determination made by the

Design Professional regarding adjustment to Contract Time, then the Design Professional may order the preparation and execution of an appropriate MCR and:

1. if the Contractor is in disagreement, the MCR shall be recorded as approved by the Owner to be included in a Change Order;
2. if the Owner is in disagreement, the MCR shall be recorded as "approved by dispute resolution authority of the Design Professional" in accordance with this Subparagraph 9.8.7 to be included into a Change Order; and,
3. either approval shall be subject to the right of either party to disagree and assert a claim in accordance with Article 4.

9.8.8 Liquidated Damages shall be determined in accordance with Paragraph 8.4.

9.8.9 The Certificate of Substantial Completion shall be submitted to the Contractor and Contractor shall submit for consent of surety, if required, for written acceptance and following acceptance, the Owner shall make payment to Substantial Completion. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

9.9 PARTIAL OCCUPANCY OR USE

9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage provided such occupancy or use is consented to by the insurer as required under Clause 11.4.1.3 and authorized by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have communicated in writing the responsibilities for payments, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties, if different from the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Design Professional as provided under Subparagraph 9.8.2. The stage or the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, then by decision of the Design Professional.

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

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

9.10 CLOSE-OUT REQUIREMENTS

9.10.1 Before final completion in accordance with Paragraph 9.11 can be achieved all Work must be complete and accepted including the requirements under Paragraph 9.10 including:

1. Substantial Completion in accordance with Paragraph 9.8;
2. Work associated with Punch List(s);
3. testing, balance or performance operations complete and in agreement that associated work is in compliance with the Contract Documents and verified as such by the Design Professional;
4. one hard copy and one electronic copy in .pdf format of final approved test, balance or performance report(s) complete with directory of contents submitted to Owner;
5. As-Built drawings delivered in accordance with Subparagraph 3.11.1;
6. written certification signed by Owner of delivery and stocking of extra material, equipment or components required by the Contract Documents at a location established by the Owner;
7. delivery of all warranties required by the Contract Documents;
8. all keys, passes, codes, software or other methods or components of control or security which have been correctly and adequately accounted for and closed-out; and,
9. up-loading of all Close-Out documents into CIMS including scans of Building Code Approvals and other code certifications, Substantial Completion documents, Punch Lists, Warranties, O&M Manuals, Training Sign-off, Extra Stock Sign-off, Final Completion documents, and Equipment inventory information as required in Division 01.

Exception: Up-loading of Final Completion documents shall be loaded into CIMS within **seven (7) days** of availability.

9.10.2 The Contractor shall prepare a separate Close-Out Punch List listing all requirements of Subparagraph 9.10.1 and the status of each, whether completed or not and the expected completed date of each component of the list. The Close-Out Punch List shall be a separate part and a subset of the Contractor's Punch List required for Substantial Completion in accordance with Subparagraph 9.8.2. At completion of the List, the Contractor shall state in writing to the Design Professional that the Close-Out Punch List has been completed and request a Close-Out Meeting with the Design Professional and the Owner. The Design Professional shall schedule such meeting within **ten (10) days** of the request, or otherwise reply in writing to the Contractor why the request is pre-mature. At the Close-Out Meeting, all requirements to achieve close-out will be verified, and if Work is found to be complete, the Design Professional, with concurrence from the Owner, shall provide written approval of Contractor's completion of close-out requirements within **five (5) days** of the conclusion of the meeting.

9.10.3 The balance at Substantial Completion of the Schedule of Values line item for Documents and Close-Out in accordance with Subparagraph 9.2.2 shall only be approved for payment when all requirements under Paragraph 9.10 are complete. No partial payment of the Close-Out balance will be considered. Contractor agrees that Close-Out Requirements, in accordance with Paragraph 9.10, are part of the value of Work defined by the Contract Documents and shall not be construed to mean retainage. Any variation or deviation from this Paragraph 9.10 shall be made through an appropriate Modification in accordance with Article 7.

9.11 FINAL COMPLETION AND FINAL PAYMENT

9.11.1 Following completion of close-out requirements in accordance with Paragraph 9.10, and upon receipt of a written notice from the Contractor that the Work is ready for final inspection and

acceptance and upon receipt of a final Application for Payment, the Design Professional will promptly make such inspection and, when the Design Professional finds the Work acceptable under the Contract Documents and the Contract fully performed, the Design Professional will promptly, with the Owner's prior approval, issue a Certificate of Final Completion and following approval by all parties, a final Certificate for Payment each stating that to the best of the Design Professional's knowledge, information and belief and on the basis of the Design Professional's or Design Professional's Project Representative's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Design Professional's issuance of Certificate of Final Completion and final Certificate for Payment will constitute a further representation that conditions listed in Subparagraphs 9.10 and 9.11.2 have been fulfilled as precedent to the Contractor's being entitled to final payment.

9.11.2 Final payment shall not become due until the Contractor submits to the Design Professional:

1. an affidavit that payrolls, bills for subcontracts, materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied;
2. a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least **forty-five (45) days** following written notice to the Owner;
3. a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents;
4. consent of surety, if any, to final payment;
5. releases and waivers of claims of all Subcontractors, and suppliers; and,
6. if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor or other entity refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify and protect the Owner.

If any claim remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such claim, including all costs and reasonable attorney's fees.

9.11.3 If, after Substantial Completion of the Work, Final Completion thereof is materially delayed through no fault of the Contractor or by issuance of changes in the Work affecting Final Completion, and the Design Professional so confirms, the Owner shall, upon application by the Contractor and certification by the Design Professional, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Design Professional prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

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

1. Claims, security interests or encumbrances arising out of the Contract and unsettled;
2. failure of the Work to comply with the requirements of the Contract Documents; or
3. terms of special warranties required by the Contract Documents.

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

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

10.1.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. The Owner may, but is under no obligation, point out unsafe conditions or operations.

10.1.2 The Contractor shall at all times conduct operations and take precautions under this Contract in a manner to avoid risk or bodily harm to persons on or around the Work site and to avoid risk of damage to any property. The Contractor shall continuously inspect the construction operations and shall cause Subcontractors and all other entities on or around the Project to be aware of dangers or risks and to comply with applicable health or safety laws, codes, standards and regulations applicable to the locale where the Project is located.

10.2 SAFETY OF PERSONS AND PROPERTY

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

1. employees on the Work and other persons who may be affected thereby and shall include clean work site, well maintained equipment, barricades, safety awareness programs or whatever effort that will best accomplish required protection;
2. students, staff and public either nearby or within the Project site that shall include re-routing pedestrian ways, re-routing traffic, providing signage, building of bridges, barricades, pedestrian tunnels, or whatever effort that will best accomplish required protection;
3. Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors; and
4. other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

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

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

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

10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contractor Documents) to property referred to in Subparagraphs 10.2.1.3 and 10.2.1.4 caused in whole or in part by the Contractor, a Subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible, except damage or loss attributable to acts or omissions of the Owner or Design Professional or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations stated throughout the Contract Documents.

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

10.2.7 The Contractor shall report in writing to the Owner and the Design Professional within **five (5) days** of an accident arising out of or in connection with the Work which caused lost time injury, personal injury, death or property damage, giving full details and statements of any witnesses. In cases of serious bodily injury, death or serious property damage, Contractor shall immediately contact the proper authorities, as well as, Owner and Design Professional by the most expeditious means.

10.3 HAZARDOUS MATERIALS

10.3.1 If reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and immediately report the condition to the Owner and Design Professional in writing.

10.3.2 The Owner shall obtain the services of a properly licensed testing laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to obtain the services of a remediation contractor to remove the hazard and to verify that it has been rendered harmless. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. The Contract Time adjusted as provided in Article 7. "Rendered Harmless"

shall mean that the levels of such materials are less than any applicable exposure levels, including but not limited to EPA regulations.

10.4 The Owner shall not be responsible under Paragraph 10.3 for materials and substances brought to the site by the Contractor.

10.5 If, without negligence on the part of the Contractor, the Contractor is held liable for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Contract shall be equitably adjusted in accordance with Article 7.

10.6 EMERGENCIES

10.6.1 In an emergency affecting safety of persons or property, the Contractor shall use its best efforts to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Paragraph 4.3 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

11.1 LIABILITY INSURANCE

11.1.1 The Contractor and Subcontractors shall purchase from and maintain in a company or companies lawfully authorized to transact insurance in New Mexico, insurance that shall protect the Contractor and Subcontractors from claims set forth below, which may arise out of or result from operations under the Contract and for which the Contractor and Subcontractors may be legally liable, whether such operations be by the Contractor and Subcontractors or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

1. claims under Workers' Compensation, Disability Benefit and other similar Employee Benefit Acts, which are applicable to the Work to be performed;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
4. claims for damage for personal injury;
5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting there from;
6. claims for damages because of bodily injury, death of a person property damage arising out of ownership, maintenance or use of a motor vehicle;
7. claims for bodily injury or property damage arising out of completed operations; and
8. claims involving contractual liability insurance applicable to the Contractor's obligations under Paragraph 3.18.

Provision of insurance does not limit the liability of the Contractor under 3.18.1 herein.

11.1.2 The Contractor shall ensure that liability insurance is maintained in accordance with Article 11 and may, at Contractor's option, either insure the activities of Subcontractors or require them to maintain insurance to cover all claims in Article 11. If the Owner is damaged by the failure or neglect of the Contractor to maintain insurance as described above, then the Contractor shall be liable for all costs and damages properly attributable thereto.

11.1.3 The insurance required by Subparagraph 11.1.1 shall be written for not less than limits of liability specified herein or required by law, whichever coverage is greater. Coverage, shall be written on an occurrence basis and shall be maintained without interruption from the date of commencement of the Work until date of Final Payment and termination of any coverage required to be maintained after final payment.

11.1.4 Certificates of Insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. These certificates and the insurance policies required by this Paragraph 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least **forty-five (45) days** prior written notice has been given to the Owner. If any of the foregoing insurance coverages are requested to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment as required by Subparagraph 9.10.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both shall be furnished by the Contractor with reasonable promptness.

11.1.4.1 The Certificates of Insurance shall clearly state the coverages, limits of liability, covered operations, effective dates and dates of expiration of policies of Insurance. The Contractor will promptly notify and furnish to the Owner copies of any endorsements that are subsequently issued amending coverage or limits. The Certificates of Insurance shall be in the appropriate ACORD form, or similar format acceptable to the Owner and shall include the following statements:

1. "The State of New Mexico, the (*the name(s) of the Owner whose name(s) appear on the Agreement*), its agents, servants and employees are recognized as Additionally Insured."
2. "The insurance coverage certified herein will not be canceled or materially changed, except after **forty-five (45) days** written notice has been provided to the Owner"
3. "The insured will not violate, or permit to be violated, any conditions of this policy, and will at all times satisfy the requirements of the insurance company transacting the policy."
4. "The coverage provided by this certificate is primary."
5. "Nothing in this certificate of coverage will be construed to affect the State of New Mexico or owner, agents, servants and employees defenses, immunities or limitations of liability under the New Mexico Tort Claims Act."

11.1.5 Minimum Required Coverages:

11.1.5.1 Worker's Compensation Insurance shall be provided as required by applicable State law for all employees engaged at the site of the Project under this Contract, including Subcontractor employees. In case any class of employee engaged in work on the Project under this Contract is not protected under the Worker's Compensation Statute, the Contractor shall provide, and cause each Subcontractor to provide Employer's Liability Insurance in an amount not less than five hundred

thousand (\$500,000). Failure to comply with the conditions of this Subparagraph 11.1.5.1 will subject this Contract to termination.

11.1.5.2 Public Liability Insurance shall not be less than the liability amounts set forth in the New Mexico Tort Claims Act, §41-4-1 et seq. NMSA 1978, as it now exists or may be amended.

11.1.5.3 Comprehensive Vehicle Liability Insurance, for both owned and non-owned vehicles, shall be one million dollars (\$1,000,000) per occurrence combined single limit for both personal injury and property damage.

11.2 OWNER'S LIABILITY INSURANCE

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

11.3 PROJECT MANAGEMENT PROTECTIVE LIABILITY INSURANCE

11.3.1 Optionally, the Owner may provide Project Management Protective Liability Insurance, otherwise known as Project Insurance, as primary coverage for the Owner's, Contractor's and Design Professional's vicarious liability for construction operations under the Contract. The minimum limits of liability purchased with such coverage shall be equal to the limits required for Contractor's Liability Insurance under Clauses 11.1.1.2 through 11.1.1.5.

11.3.2 To the extent damages are covered by Project Management Protective Liability insurance, the Owner, Contractor and Design Professional waive all rights against each other for damages, except such rights as they may have to the proceeds of such insurance. The policy shall provide for such waivers of subrogation by endorsement or otherwise.

11.4 PROPERTY INSURANCE

11.4.1 Unless Builder's Risk coverage is furnished by the Owner as indicated in Paragraph 7.2 of the Agreement between the Owner and the Contractor, the Contractor shall provide insurance which will protect the interests of the Contractor and Subcontractors in the Work. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until Final Payment has been made as provided in Paragraph 9.11 or until no person or entity other than the Owner has an insurable interest in the property required by this Paragraph 11.4 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, and Subcontractors in the Project.

11.4.1.2 This property insurance may not cover portions of the Work stored off the site or any portions of the Work in transit. Insurance covering Work or materials stored off site shall be in accordance with sub-paragraph 9.3.2.

11.4.1.3 Partial occupancy or use in accordance with Paragraph 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written

consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

11.4.2 Boiler and Machinery Insurance. The Owner shall purchase and maintain Equipment Breakdown Coverage if required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner, this insurance shall include interests of the Owner, Contractor and Subcontractors in the Work.

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

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

11.4.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site, by property insurance under policies separate from those insuring through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive rights in accordance with the terms of Subparagraph 11.4.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

11.4.6 Before an exposure to loss may occur, the Contractor may review any Owner provided insurance required by this Paragraph 11.4. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least **thirty (30) days** prior written notice has been given to the Contractor.

11.4.7 Waivers of Subrogation. The Owner and Contractor waive all rights against each other and any of their subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Paragraph 11.4 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner. The Owner or Contractor, as appropriate, shall require of the Design Professional, Design Professional's consultants, separate contractors described in Article 6, if any, and the subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity that would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged. The provisions of this paragraph shall not include claims with respect to damages to non-work buildings or properties

11.4.7.1 The provisions of Paragraph 11.4.7 shall not be effective as to a person or entity whose acts or failures to act cause the harm and rise to a level beyond mere negligence.

11.4.8 A loss insured under Owner's property insurance shall be adjusted by the Owner and made payable to the Owner for the insured's, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Subparagraph 11.4.10. 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.

11.4.9 The Owner shall distribute in accordance with such agreement as the parties in interest may agree, or in accordance with an arbitration award in which case the procedure shall be as provided in Paragraph 4.6. If after such loss, no other special agreement is made, and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

11.4.10 The Owner shall have power to adjust and settle a loss with insurers.

11.5 PERFORMANCE BOND AND PAYMENT BOND

11.5.1 If the contract price exceeds \$25,000, the Contractor shall furnish Labor, Material and Performance surety bonds covering faithful performance of the Contract in amounts not less than 100 percent of the Contract amount, exclusive of GRT, unless Owner or the Contract Documents require a lesser percentage, for payment of obligations arising there under. These Labor, Material and Performance bonds shall be delivered to the Owner within **seven (7) days** of the Notice of Award or evidence satisfactory to the Owner that such bonds are forthcoming. Said bonds must comply with the requirements of §13-4-18, NMSA 1978. If the amount of the Sum of the Work is increased, the amounts of the bonds shall be increased accordingly.

11.5.1.1 A Subcontractor shall provide a performance and payment bond on a public works building project if the subcontractor's contract (to the Contractor) for work to be performed on a project is one hundred and twenty-five thousand dollars (\$125,000) or more. Failure of a Subcontractor to provide required bond shall not subject the Owner to any increase in cost due to any substitution of an approved Subcontractor.

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

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

12.1 UNCOVERING OF WORK

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

12.1.2 If a portion of the Work has been covered, which the Design Professional has not specifically requested to examine prior to its being covered, the Design Professional may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Modification in accordance with Article 7, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

12.2 CORRECTION OF WORK

12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

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

12.2.2 AFTER SUBSTANTIAL COMPLETION

12.2.2.1 In addition to the Contractor's obligations under Paragraph 3.5, if within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Subparagraph 9.8.6, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one year period for correction of the Work, if the Owner fails to notify the Contractor and gives the Contractor an opportunity to make the correction, the Owner waives the rights to require the correction by Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within reasonable time during that period after receipt of notice from the Owner or Design Professional, the Owner may correct it in accordance with Paragraph 2.4.

12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work and in accordance with all other requirements of Subparagraph 9.8.6.

12.2.2.3 The one-year period for correction of Work shall be extended by corrective Work performed by the Contractor pursuant to this Paragraph 12.2 and Sub-paragraph 9.8.6.

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

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

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

12.2.6 Eleven (11) months after Substantial Completion, the Design Professional shall coordinate, with the Owner and the Contractor, an 11-Month Correction Period Inspection of all portions of the Work. Any Work found defective or needing adjustment or other correction in order to function and operate in accordance with the indication of the Contract Documents shall be promptly completed by the Contractor within **twenty (20) days**, or as otherwise agreed between the parties. The Owner may make such corrections or adjustments in accordance with Paragraph 2.4.

12.3 ACCEPTANCE OF NONCONFORMING WORK

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

ARTICLE 13 MISCELLANEOUS PROVISIONS

13.1 LAW

13.1.1 The Contract shall be governed by the laws of the State of New Mexico and parties agree that the State of New Mexico District Court of the County, where the Project is located, shall have exclusive jurisdiction to resolve all Claims, issues and disputes not otherwise resolved in accordance with the Contract Documents.

13.1.2 The Owner's total liability to Contractor or any other entity claiming by, through, or under Contractor for any Claim, cost, loss, expense or damage caused in part by the fault of the Owner and in part by the fault of the contractor or any other entity or individual shall not exceed the percentage share that Owner's fault bears to the total fault of Owner, Contractor and all other entities and individuals as determined on the basis of comparative fault principles.

13.1.3 All Work shall be completed in accordance with and shall be inspected within requirements of the Construction Industries Licensing Act, Chapter 60, Article 13 NMSA 1978.

13.2 SUCCESSORS AND ASSIGNS

13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to partners, successors, assigns and legal representatives of such other party in respect to covenants, that party shall nevertheless remain legally responsible for all obligations under the Contract.

13.2.2 The Owner may, without consent of the Contractor, assign the Contract to an institutional lender providing construction financing for the Project. In such event, the lender shall assume the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

13.2.3 The Contractor shall not assign the Contract or proceeds hereof without written consent of the Owner. If contractor attempts to make such an assignment without such consent, it shall be void and confer no rights to third parties; the Contractor shall nevertheless remain legally responsible for all obligations under the Contract. Any consent of the Owner to such assignment shall be written and include "it is agreed that the funds to be paid to the assignee under this assignment are subject to performance by the Contractor and to claims for services rendered or materials supplied for the performance and of the Work and other obligations of the Contract Documents in favor of any entity rendering such services or providing such materials".

13.3 WRITTEN NOTICE

13.3.1 Written notice shall be deemed to have been duly served if delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended, or if delivered at or sent by Registered or Certified Mail, Federal Express, or similar service with proof of delivery to the last business address known to the party giving notice.

13.4 RIGHTS AND REMEDIES

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

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

13.4.3 Contractor shall carry out the Work without delay in accordance with the Contract Documents during any and all disputes or disagreements, unless otherwise agreed to by the Owner in writing.

13.5 TEST AND INSPECTIONS

13.5.1 Tests, inspections and approvals of portions of the Work required by the Contract Documents or by laws, ordinances, rules, regulations or orders of public authorities having jurisdiction shall be made at an appropriate time. Unless otherwise provided by Subparagraph 2.2.4 or elsewhere in the Contract Documents, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, provided by the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals unless otherwise provided in the Contract Documents. The Contractor shall give the Owner and Design Professional timely notice of when and where tests and inspections and approvals are to be made so that the Design Professional may be present for such procedures. The Owner shall bear costs of tests, inspections or approvals which do not become requirements until after bids are received or negotiations concluded.

13.5.2 If the Design Professional, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Subparagraph 13.5.1, the Design Professional will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Design Professional of when and where tests and inspections are to be made so that the Design Professional may be present for such procedures. Such costs, except as provided in Subparagraph 13.5.3, shall be at the Owner's expense.

13.5.3 If such procedures for testing, inspection, or approval under Subparagraphs 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Design Professional's services and expenses shall be at the Contractor's expense.

13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Design Professional and to the Owner.

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

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

13.6 INTEREST

13.6.1 Payments due and unpaid undisputed amounts, under the Contract Documents, shall bear interest from the date payment is due in accordance with State statute regulating prompt payment.

13.7 COMMENCEMENT OF STATUTORY LIMITATION PERIOD

13.7.1 As between the Owner and Contractor:

1. before Substantial Completion. As to acts or failures to act occurring prior to the relevant date of Substantial Completion, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than such date of Substantial Completion;
2. between Substantial Completion and Final Certificate for Payment. As to acts or failures to act occurring subsequent to the relevant date of Substantial Completion and prior to issuance of the final Certificate for Payment; and
3. after Final Certificate for Payment. As to acts or failures to act occurring after the relevant date of issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of any act of failure to act by the Contractor pursuant to any Warranty provided under Subparagraph 9.8.6, Paragraph 12.2, or the date of actual commission of any other act or failure to perform any duty or obligation by the Contractor or Owner, whichever occurs last.

13.8 EMPLOYMENT

13.8.1 Equal Employment Opportunity

13.8.1.1 The Contractor agrees not to discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin or other in accordance with U.S. Executive Order 11246, as amended, and NM Executive Order 85-15. The Contractor and Subcontractors agree to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of nondiscrimination. and shall in all solicitation or advertisement for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex or national origin.

13.8.1.2 If the Contract constitutes a federally assisted construction contract within the meaning of 41 CFR 60-1.3 (1987), then the equal opportunity clause of 41 CFR 60-1.4(b) is incorporated herein by reference.

13.8.2 Wage Rates

13.8.2.1 For Contracts in excess of \$60,000, minimum wages will be paid as determined by the Department of Workforce Solutions in accordance with §50-4-20 to 50-4-30 NMSA 1978, entitled "Minimum Wage Act" The Contractor and Subcontractors shall deliver or mail copies of the certified weekly payrolls, prepared in accordance with regulations, to the Labor Commission and to the Design Professional.

13.8.2.2 The scale of wages to be paid will be posted by the Contractor in a prominent and easily accessible place on the job site.

13.8.3 Apprentices

13.8.3.1 Except as otherwise required by law, the number of apprentices in each trade or occupation employed by the Contractor and Subcontractors, material suppliers and equipment suppliers shall not exceed the number permitted by the applicable standards of the United States Department of Labor, or, New Mexico Construction Industries Division.

13.8.4 On-the-Job Relations with Contractor

13.8.4.1 The Contractor shall at all times have competent superintendent(s) or foremen on the job in immediate charge of the Work who shall receive communications from Design Professional or Owner in the prosecution of the Work, in accordance with the Contract Documents. Any person executing the Work, who in the opinion of the Design Professional or the Owner, appears to be incompetent or act in a disorderly or intemperate manner or violating provisions of the Contract Documents, shall upon written request, be immediately removed from the Project and not again be employed on any part of the Work. Failure to comply with this Subparagraph 13.8.4.1, shall upon the Owner's decision, be cause to immediately stop the Work in accordance with Paragraph 14.2.

13.8.5 Employee Background Checks

13.8.5.1 The Contractor shall be responsible for complying with the provisions of §22-10.3.3.B NMSA 1978, regarding employees' having unsupervised access to students. In the event that §22-10.3.3.B NMSA 1978 applies, and upon prior approval by the Owner, reasonable costs for background checks shall be reimbursed without mark-up or fee.

13.9 Records

13.9.1 In the even of a dispute between Owner and Contractor, the Owner shall have right to discovery and access to and the right to examine any accounting or other records of the Contractor involving transactions and Work related to this Contract for three (3) years after Final Payment or after final resolution of any disputes, whichever is later. The conditions of this paragraph apply equally to Subcontractors and suppliers.

Article 14 TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 Termination by the Contractor

14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of **thirty (30) consecutive days** through no act or fault of the Contractor or a Subcontractor or their agents or any other persons or entities performing portions of the Work under the contract with the Contractor, for any of the following reasons:

1. issuance of an order of a court or other public authority having jurisdiction which requires all Work to be stopped;
2. an act of government, such as a declaration or national emergency which requires all Work to be stopped;
3. because the Design Professional has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Subparagraph 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
4. the owner has failed to furnish to the Contractor promptly, upon the Contractor's written request, reasonable evidence as required by Subparagraph 2.2.1.

14.1.2 The Contractor may terminate the Contract if, through no act or no fault of the Contractor or a Subcontractor or their agents or employees or any other persons or entities performing portions of

the Work under contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Paragraph 14.3 constitute in the aggregate more than one hundred percent (100%) of the total number of days scheduled for completion, or **one hundred twenty (120) days** in any 365-day period, whichever is less.

14.1.3 If one of the reasons described in Subparagraph 14.1.1 or 14.1.2 exists, the Contractor may, upon **seven (7) days** written notice to the Owner and Design Professional, terminate the Contract and recover from the Owner payment for Work executed, including overhead and profit in accordance with Article 7 for Work performed, and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery excluding, overhead and profit.

14.1.4 If the Work is stopped for a period of **sixty (60) consecutive days** through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portion of the Work under contract with the Contractor because the Owner has persistently failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon **seven (7) additional days** written notice to the Owner and the Design Professional, terminate the Contract and recover from the Owner as provided in Subparagraph 14.1.3.

14.2 TERMINATION BY THE OWNER FOR CAUSE

14.2.1 The Owner may terminate the Contract if the Contractor:

1. refuses or fails to supply enough properly skilled workers or proper materials;
2. fails to make payment to Subcontractors for material or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
3. disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction;
4. disregards the authority of the Owner or Design Professional;
5. fails after commencement of the Work to proceed day-to-day continuously with the construction and completion of the Work for more than **ten (10) days**, except as permitted under the Contract Documents;
6. fails to maintain owner approved schedule or owner approved recovery schedule; and,
7. otherwise is guilty of substantial breach of a provision of the Contract Documents.

14.2.2 When any of the above reasons exist, the Owner may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety notice, as required by the surety bonds, if any, **seven (7) days** written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

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

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

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

14.2.5 In carrying out the Owner's right to complete the Work in accordance with Paragraph 14.2, the Owner shall have the right to exercise the Owner's sole discretion as to the manner, methods and reasonableness of costs of completing the Work.

14.3 SUSPENSION BY THE OWNER BY CONVENIENCE

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

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

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

14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

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

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

1. cease operation as directed by the Owner in the notice;
2. take action necessary, or that the Owner may direct, for the protection and the preservation of the Work; and
3. except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing Subcontracts and Purchase Orders.

14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work completed.

SUPPLEMENTARY CONDITIONS

MODIFICATION TO GENERAL CONDITIONS

1.0 None (*add any modifications to the General Conditions here*):

ADDITIONAL CONDITIONS

2.0 Stated Allowances

- 2.1 The Contractor shall include the cash allowances listed in Section 00 4113 or Section 00 4166 – BID FORM in his Bid.
- 2.2 The Contractor shall purchase the "Allowed Materials" as directed by the Owner through the Architect/Engineer on the basis of the lowest and best bid of at least three competitive bids. Unless specified by the Construction Documents otherwise, if the actual price for purchasing the "Allowed Materials" is more or less than the "Cash Allowance," the Contract Price shall be adjusted accordingly (see Subparagraph 3.8.4). The adjustment in Contract Price shall be made on the basis of the purchase price without additional charges for overhead, profit, insurance, or any other incidental expenses. The total cost of installation of the "Allowed Materials" shall be included in the Base Bid or Alternates as appropriate.
- 2.3 MCR Policies, see attachment

INSTRUCTIONS:

The State Minimum Wage Rate Determination and related documents issued for this specific project shall be inserted on this page.

NOTE: Not required if project is less than \$60,000 (effective June 17, 2005)

Insert Wage Rate Determination here

WAGE RATE DETERMINATION WILL BE ISSUED VIA ADDENDUM

State of New Mexico
Public School Facilities Authority

Vacant, Director



Rocky Kearney, Deputy Director

1312 Basehart Road, SE, Suite 200
Albuquerque, NM 87106
(505) 843-6272 (Phone); (505) 843-9681 (Fax)
Website: www.nmpsfa.org

MEMORANDUM

TO: All Concerned

FROM: PSFA Procurement Services

DATE: June 13, 2017

RE: Bonds and Liability Insurance - MCR Policies

The purpose of this memorandum is to provide guidance and clarification, to promote fair and equitable treatment to all persons in reference to the application of Article 7 Section 7.2.5 inclusive of PSFA's General Conditions of the Contract for Construction.

This memorandum resolves the confusion and eliminates disparate multiple interpretations over terminology that has occurred regarding 1) MCR Markup on Bonds and Liability or Builders Risk Insurance Costs, 2) Payment for additional Liability and Builders Risk Insurance for the prime contractor, 3) Payment for additional Bonds for the prime contractor and 1st tier subcontractor, and 4) Subcontractor Markup.

No MCR Markup on Bonds and Liability or Builders Risk Insurance Costs:

MCR and Change Order cost adjustments due increases or decreases in bond or insurance costs (if applicable) shall not be subject to any Markup Percentage Fee.

Liability and Builders Risk Insurance for the prime contractor:

In the event the Prime Contractor has been required to furnish comprehensive general liability insurance and builder's risk for the duration of the project as part of the base contract price, a final contract MCR will be processed to account for the Contractor's net increase or decrease in comprehensive general liability and builder's risk insurance costs associated with MCRs to Contractor's base contract price.

Bonds for the prime contractor and 1st tier subcontractor

In the event the Prime Contractor and/or 1st tier subcontractor have been required to furnish bonds as part of the base contract price, a final contract MCR will be processed to account for the Contractor's net increase or decrease in bond.

**State of New Mexico
Public School Facilities Authority**

Vacant, Director



Rocky Kearney, Deputy Director

1312 Basehart Road, SE, Suite 200
Albuquerque, NM 87106
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Website: www.nmpsfa.org

Subcontractor Markup:

Subcontractors can only markup self-performed work and not work performed by other subcontractors regardless of tier.

1st tier Subcontractors that do not self-perform work but pass through work to a 2nd tier subcontractor are allowed a markup on the 2nd tier subcontractor as follows.

Subtotal before applying overhead and profit	Under \$2000	\$2001 to \$10,000	\$10,001 to \$50,000	Over \$50,001
Subcontractor Pass-through markup 1st tier to 2 nd tier	Not to exceed 4% of the subtotal amount prior to applying subcontractor allowed markup.	Not to exceed 3% of the subtotal amount prior to applying subcontractor allowed markup.	Not to exceed 2% of the subtotal amount prior to applying subcontractor allowed markup.	Not to exceed 1% of the subtotal amount prior to applying subcontractor allowed markup for the first \$100,000. Above \$100,000 negotiated %.

No pass through markup is allowed from 2nd tier to 3rd tier or below.

SECTION 01 1000

SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Work sequence.
2. Contractor use of site.
3. Definitions.
4. Abbreviations.

B. Related documents and sections:

1. Document 00 7200 - General Conditions of the Contract
 - a. [Article 2]: Basic responsibilities and rights of Owner.
 - b. [Article 3]: Basic responsibilities of Contractor.
 - c. [Article 6]: Owner's right to award separate contracts.
2. Section 01 2310 - Bid Lots

1.2 WORK SEQUENCE

A. Construct Work in phases to accommodate Owner's occupancy requirements:

1. Refer to GI103 for specific phasing requirements

B. Refer to GI103 and Bid Form for time of completion for each phase.

C. Coordinate construction schedule and operations with Owner & Design Professional.

D. See Bid Form for required roofing production rates on Project. See also Section 01 3100 – Project Management and Coordination and Division 07 roofing specifications

for related requirements.

1.3 CONTRACTOR USE OF SITE

- A. Existing building and site will be partially occupied during construction. Cooperate with Owner to minimize conflict and to facilitate Owner's operations during regular and after-hours use.
- B. Contractor will have restricted use of site to allow Owner occupancy.
 - 1. Access to site by trucks, equipment, and automobiles: Limited to route and entrances designated in Section 01 5000 - Temporary Facilities and Controls and on GI103. Schedule construction traffic and material deliveries to site during time periods coordinated in advance with Owner.
 - 2. On-site construction vehicle and equipment traffic shall be limited to pathways, areas and time periods approved in advance by Owner to ensure safe site conditions. Special care shall be taken during change of class periods, student arrival/departure times and around playgrounds, bus zones and established student pathways. The Contractor shall strictly maintain close communication with designated school representative(s) on matters of on-site construction traffic scheduling and promptly inform them in advance of any significant changes to related pre-authorized arrangements. Do not proceed with altered arrangements prior to designated school representative(s) approval.
 - 3. Parking:-Contractor and work force shall not use existing parking lots. Do not interfere with Owner's parking requirements.
 - 4. Unless otherwise agreed to in advance by Owner, construction shall be performed only during these time periods:
 - a. To be coordinated with Owner
 - 5. Construction activities shall be limited to areas of actual construction. Unless otherwise agreed to in advance by Owner, restrict workmen from entering adjacent restricted areas:
 - a. Kindergarten Wing at Brown.
 - b. Portable campus.
 - 6. Existing student and staff toilet rooms are off-limits to Contractor unless they

are not available for use by the school due to the approved schedule of work.

- C. Contractor shall make arrangements with Owner to secure any keys necessary for access to existing building and site areas so that the work can be performed. The Contractor assumes sole responsibility for the security and use of school keys obtained from the Owner and shall not reproduce them nor lend them out during the progress of the work.

1.4 CONTRACTOR'S PERSONNEL JOBSITE RESTRICTIONS

- A. Contractor shall enforce the following requirements on his entire workforce throughout the progress of the Work:
 - 2. All personnel on site, directly or indirectly in the employ of Contractor, are restricted from any interaction with any Owner, Owner's staff, students, or other members of the public while on, or adjacent to Owner's property except through jobsite meetings conducted by the Design Professional and the Owner or as otherwise determined by the Owner.
 - 2. Contractor's personnel shall remain in their designated work areas. Communications with any non-project related persons on or near the site shall be through Project Superintendent.
 - 3. No firearms or other types of weapons, of any sort are allowed on site. If member of the Contractor's workforce is found to be in possession of a firearm, of any kind, they will be directed to leave immediately and will not be allowed to return. This includes firearms found in company or private vehicles, tool boxes, or brought on site in any other manner;
 - 4. Smoking is prohibited on any occupied school campus. Smoking shall be limited to designated areas on a new, or un-occupied, site, if allowed in advance by Owner.
 - 5. There shall be no use, possession, sale, and distribution of alcohol, drugs, or other controlled substances on its premises. The Contractor shall also prohibit the presence of an individual with such substances in their body from the workplace.
 - 6. Any employee who is found in violation of requirements of these restrictions, or of any others within the Contract Documents, or who refuses to permit inspection shall be barred from the Project site at the discretion of the Owner in accordance with Subparagraph 13.8.4.1 of the General Conditions.
 - 7. Comply with Owner's procedures for individual visual identification of Contractor's workforce on school site and in occupied areas. If identification badges are required make sure that they are worn at all times on site during the work.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 012310 - BID LOTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes: Descriptions for Bid Lots which isolate certain portions of the Work for identification in the Proposal Form.
- B. Related documents and sections:
 - 1. Document 002113 - Instructions to Offerors:
 - a. Subparagraph 4.1.6: Requirements for Listing Bid Lot prices.
 - b. Subparagraph 4.10.2.3: Owner reserves the right to accept Bid Lot alternates in any order, not in the order listed on the Proposal Form.
 - 2. Document 005213 - Agreement Between Owner and Contractor, Article 4: Identification of Bid Lots to determine Contract Sum.

1.2 CONDITIONS

- A. All requirements of General and Supplementary Conditions, applicable sections of Specifications, and applicable portions of Drawings shall govern scope, quality, and execution of Bid Lots.
- B. Owner reserves the right to accept Bid Lot Alternates 1 to 4 in any order, not in the order listed on proposal Form.

1.3 BID LOTS

- A. BASE BID – Renovation of Nine Pre-K Classrooms
 - 1. All work not included within the Bid Lots: Include a lump sum proposal amount to complete all work for construction of the School building and associated site work and utilities.
- B. BID LOT NO. 1 – Systems Project
 - 1. Removal and installation of new RTU's.
 - 2. New construction approximately 200 SF.
 - 3. New electrical distribution equipment and circuiting.
 - 4. Ceiling removal.
 - 5. New LED lighting.
 - 6. New floor finishes.
 - 7. Reconfiguration of existing rooms with new demising walls.
 - 8. New common restrooms
 - 9. Patch and repair of TPO roof as required.
 - 10. New Casework.

11. Renovation of Admin suite.
12. Refinishing of existing exterior stucco.
13. Replace the existing window system.
14. Addition of fire suppression and new fire alarms.
15. Furring out interior and exterior walls to allow for data, power and insulation.
16. Renovation of three (3) rooms into typical classrooms for future use.
17. Cubbies for these three (3) rooms

C. BID LOT NO. 2 – Exterior Door Replacement

1. Remove Hollow Metal Doors and Frame.
2. Install new Hollow Metal Doors and Frame.
3. Reinstall existing access control.
4. Patch and repair all finishes as required.

D. BID LOT NO. 3 – Repave Parking Lot, Site Lighting, Site Drainage, and walkways

1. Remove existing asphalt paving as described
2. Repave the existing parking lots
3. Remove existing ramp at main entry and install new ADA compliant ramp.
4. Remove and reinstall two (2) swing gates along 5th
5. Install new perimeter side walk.
6. Provide parking stops
7. Provide wayfinding signage
8. Provide stripping as called for.
9. Patch and repair 5th street and sidewalks as required

E. BID LOT NO. 4 – Items Outside Property Line (Above Adequacy):

1. Remove existing asphalt paving as described
2. Trenching
3. Patching Asphalt paving

1.4 PROCEDURES

- A. Consider all work that must be accomplished for complete incorporation of pricing for bid lots.
- B. Include in lump sum prices for bid lots all costs of labor, materials, equipment, permits, fees, insurance, bonds, overhead, and profit.
- C. Coordinate related work and modify surrounding work to integrate work of each bid lot.

PART 2 - PRODUCTS

Not used.

Formative Architecture

Portales Municipal Schools
Brown Early Childhood Center

PART 3 - EXECUTION
Not used.

END OF SECTION

SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL**1.1 SUMMARY**

A. Section includes:

1. General requirements for coordination of Work.
2. Field engineering.
3. Requirements for participation in and administration of:
 - a. Pre-construction conference.
 - b. Progress meetings.
 - c. Pre-installation conferences.
4. Progress schedule.

B. Related documents and sections:

1. Document 00 7200 – General Conditions
 - a. Paragraph 3.10 – Contractor’s Schedules, Logs, Meetings, and Reports
2. Document 00 2113 - Instructions to Bidders: Pre-Bid Conference.
3. Section 01 1000 - Summary: Work by others.
4. Section 01 4000 – Quality Requirements
5. Section 01 5000 – Temporary Facilities and Controls

1.2 SUBMITTALS

A. Provide in accordance with Section 01 3300 - Submittal Procedures:

1. Site mobilization plan (See Section 01 5000 and Paragraph 3.13 in Document 00 7200 – General Conditions).
 - a. Submit for Owner’s approval prior to start of Work.
 - b. Update as necessary during progress of Work to adjust for changed

conditions and as approved by Owner.

2. Coordination drawings:

- b. Provide where coordination is critical for installation of components fabricated off site and where space is limited and maximum utilization of space is required.
- c. Show relationship and integration of components and construction entities, required installation sequence, dimensions, and tolerances.

B. Staff assignment list and emergency contact information:

- 1. Prior to Pre-Construction Conference, provide to Design Professional a list of Contractor's principal staff assignments for Project. Indicate names, duties and responsibilities, addresses, emergency contact information and telephone numbers. Include resume of proposed Project Superintendent showing prior experience as superintendent on projects of similar size and scope. Naming more than one Project Superintendent to be in charge depending which is present at the site will not be acceptable. Design Professional shall be informed in writing prior to any proposed change in Project Superintendent during the progress of the Work. See also Paragraph 3.9 of the General Conditions.
- 2. Distribute contact information and post in field office coordination.

1.3 GENERAL COORDINATION REQUIREMENTS (See Article 3 in General Conditions).

- A. Scheduling: Coordinate scheduling, submittals and work of various specification sections to ensure efficient and orderly sequence of installation of interdependent construction elements. Ensure that work of one specification section is not installed in such a manner as to limit, preclude, or restrict work of another section.
- B. Coordinate completion and cleanup of work of separate specification sections in preparation for final inspection specified in Section 01 7700 - Closeout Procedures.
- C. After acceptance of Work, coordinate access to facility for required maintenance, monitoring, adjusting, and correcting deficiencies to manner to minimize disruption of Owner's activities.
- D. Coordinate with Owner regarding work of Owner's forces and separate contractors. Ensure coordination of such work with Project Schedule.
- E. Roofing Work Coordination with Owner: Contractor shall notify the Owner no later than 24 hours in advance regarding anticipated change in the roofing installation schedule due to prediction of bad weather or by other circumstances, including those

directly caused by roof system installer, which will prevent roof system installation in accordance with the current Project Schedule. Lack of adequate communication between Contractor and subcontractor regarding anticipated scheduling shall not relieve Contractor of this requirement. Contractor shall be responsible for reimbursing to the Owner the related cost of Owner's separate contractor services, if Contract roofing production rates are not met due to lack of compliance with these requirements. See also Section 01 4000 – Quality Requirements.

- F. HVAC & Control Performance Assurance Contractor (PAC) Coordination: Contractor shall notify the PAC no later than 24 hours in advance regarding anticipated change in the HVAC & Controls installation schedule due to prediction of circumstances, including those directly caused by installer, which will prevent PAC tasks from being performed in accordance with the current Project Schedule. Lack of adequate communication between Contractor and subcontractor regarding anticipated scheduling shall not relieve Contractor of this requirement. Contractor shall be responsible for reimbursing to the Owner the related cost of Owner's separate contractor services, **including those of the PAC** due to lack of compliance with these requirements. Examples of such expenses are separate contractor's repeat trips and overtime made necessary by lack of Contractor's compliance with this subparagraph. See also Section 01 4000 – Quality Requirements.

1.4 FIELD ENGINEERING

- A. Existing control datum for field engineering is indicated on Drawings.
- B. Locate or establish survey control and reference points prior to starting site construction. Protect points during construction and record locations with horizontal and vertical data on Project Record Documents in accordance with Section 01 7800 - Closeout Submittals.
- C. Prior to start of construction; verify location of control points and layout information on Drawings relative to property, setback, and easement lines.
- D. Provide competent field engineering services. Establish elevations, lines, and levels utilizing recognized engineering survey practices. Periodically verify layouts.
- E. Promptly replace dislocated control and reference points based on original survey control.

1.5 PROJECT COMMUNICATIONS SYSTEM (CIMS)

- A. Utilize PSFA – CIMS for project communications. Refer to Document 00 7200 – General Conditions. Subparagraph 4.2.4.3.
- B. Arrange with Owner as necessary to obtain PSFA - CIMS training for Contractor's principal staff on Project.

1.6 PRE-CONSTRUCTION CONFERENCE

- A. Conference will be held after execution of the Agreement and prior to issuance of Notice To Proceed. Time and location will be coordinated with Owner and Design Professional. Meet at the site or other location convenient to all parties.
- B. Attendance: Owner, school principal or other designated school representative, Design Professional, consultants, Contractor, and major subcontractors and suppliers.
- C. Agenda:
 - 1. Distribution of Contract Documents.
 - 2. Designation and description of roles of responsible personnel representing Owner, Contractor, and Design Professional.
 - 3. Status of permits and Notice to Proceed.
 - 4. Site mobilization plan, use of premises by Contractor and Owner, Owner's occupancy requirements, work hours, regular school schedule and special school schedule considerations.
 - 5. Construction schedule, work sequence, and delivery priorities.
 - 6. Weekly job meeting schedule.
 - 7. Owner's right to salvage.
 - 8. Presentation and discussion of site mobilization plan specified in Section 01 50 00 - Temporary Facilities and Controls.
 - 9. Construction facilities, controls, and temporary utilities.
 - 10. Procedures for processing submittals, applications for payment, substitution requests, field decisions and communications, and contract modifications.
 - 11. PSFA - CIMS
 - 12. Wage rates.
 - 13. Security, Contractor's use of keys, safety, first aid, and housekeeping.
 - 14. Behavior of work force on school site.

15. Procedures for spotting of utility lines by Owner's forces.
16. Procedures for maintaining project record documents.
17. Requirements for start up of equipment.
18. Testing and inspection procedures.
19. Introduce Owner's separate contractors and consultants, including PAC and roofing observer.
20. Inspection and acceptance of equipment put into service during construction.
21. Contract closeout procedures.
22. Emergency contact information.
23. Other pertinent items.

1.7 PROGRESS MEETINGS

- A. Refer to Document 00 7200 General Conditions – Paragraph 3.10 for requirements.
- B. Progress Meetings shall include review of Owner's separate contractor issues including the Installation Issues Log with actions required, those individuals assigned for resolution, and expected resolution date.

1.8 PRE-INSTALLATION CONFERENCES

- A. When required by an individual specification section, convene a pre-installation conference at site.
- B. Require attendance of entities directly concerned with item of work.
- C. Notify Design Professional 4 days in advance of meeting.
- D. Prepare agenda and preside at conference. Record minutes, and distribute copies within 3 days to participants and Design Professional.
- E. At meeting, review conditions of installation, preparation and installation procedures, and coordination with related work.

1.9 PROGRESS SCHEDULE

- A. See Paragraph 3.10 in the General Conditions for requirements.

1. Indicate complete sequence of roofing activity in compliance with roofing production rates required by Contract.
2. Indicate complete sequence of HVAC and controls installation activity as separate line items and testing in compliance with requirements of Owner's Performance Assurance Contractor (PAC). Itemize each category of subcontracted work, especially those related to PAC activities and illustrate separately on the Project Schedule. Consult with PAC to determine milestones, critical paths and time requirements to complete Test and Balance and performance verification testing prior to Owner's occupancy of Project and insert in Project Schedule. See Subparagraph 1.3-F regarding Contractor's responsibility for maintaining PAC involvement in Project Schedule.

PART 2 - PRODUCTS

2.1 EQUIPMENT

- A. Verify utility requirements and characteristics of equipment are compatible with facility utilities. Coordinate work of various specification sections having interdependent requirements for installing, connecting to, and placing in service such equipment.

PART 3 - EXECUTION

3.1 COORDINATION WITH INSTALLED CONSTRUCTION

- A. Cutting and patching of installed construction shall be accomplished in accordance with Section 01 7000 - Execution Requirements.

END OF SECTION

SECTION 01 3233 - PHOTOGRAPHIC DOCUMENTATION

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 administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
- B. Related Requirements:
 - 1. Section 013300 "Submittal Procedures" for submitting photographic documentation.
 - 2. Section 017700 "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.
 - 3. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.
 - 4. Section 024100 "Selective Demolition" for photographic documentation before building demolition operations commence.

1.3 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit image files within one week days of taking photographs.
 - 1. Digital Camera: Minimum sensor resolution of 12 megapixels.
 - 2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
 - 3. Identification: Provide the following information with each image description in file metadata tag:
 - a. Name of Project.
 - b. Date photograph was taken.

1.4 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size 12 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified photographer to take construction photographs.
- B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
 - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. Date and Time: Include date and time in file name for each image.
 - 2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect and Owner.
- D. Preconstruction Photographs: Before commencement of demolition, take photographs of Project site and surrounding properties, including existing items to remain or be salvaged during construction, from different vantage points, as directed by Architect.
 - 1. Take a minimum of 40 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.

END OF SECTION

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes submittal procedures for:

1. Shop drawings.
2. Product data.
3. Samples.
4. Manufacturer's instructions.
5. Design data and calculations.
6. Manufacturer's certificates.
7. Reports for testing, inspecting, and demonstrating.
8. HVAC & controls construction checklists
9. Equipment inventory and roofing data collection forms.

B. Related documents and sections:

1. Document 00 7200 - General Conditions, [Paragraph 3.12]: Contractor's responsibilities regarding submittals.
2. Section 01 3100 - Project Management and Coordination: Submittal of Progress Schedule and coordination drawings.
3. Section 01 4000 - Quality Requirements: Manufacturers' field services and reports.
4. Section 01 6300 - Product Substitution Procedures: Submittal of substitution requests.
5. Section 01 7800 - Closeout Submittals: Submittal of project record drawings, operation and maintenance manuals, warranties, certifications of inspection, extra materials, and other closeout submittals.
6. Section 01 7801 – Equipment Inventory and Roofing Data Collection: Collection and submittal of data required by Owner for equipment and roof

system(s) installed under the Contract.

7. Section 23 0593 – Testing Adjusting and Balancing: Preparation and submittal of Construction Checklists.
8. Refer to individual specification sections for unique submittal requirements related to a specific product, system, or procedure.

1.2 HVAC & CONTROLS CONSTRUCTION CHECKLISTS

A. Submission:

1. Submit the checklists upon completion of installation and initial operational testing prior to TAB work as required by Division 23.
2. Submit reports as required by Division 23.

B. Form:

1. Use project-specific forms provided by Performance Assurance Contractor. Refer to Section 23 0593 – Testing, Adjusting and Balancing.
2. Bind with titled cover in folder, plastic binder, or three ring binder as appropriate for quantity of material.

C. Reports shall include:

- a. Completion of all required checklist items.
- b. Names of persons performing activity.

1.3 EQUIPMENT INVENTORY AND ROOFING DATA COLLECTION FORMS

A. Submission:

1. Submit completed forms for all categories of equipment and roofing installed under the Contract, and as required in Section 01 7801 – Equipment Inventory and Roofing Data Collection.
2. Submit forms prior to Substantial Completion and as required by Section 01 7801.

B. Form:

1. Use electronic forms as required in Section 01 7801 and provided by PSFA on its web site at www.nmpsfa.org (“Maintenance Portal” page).for each type of equipment to be inventoried.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SUBMITTAL TRANSMITTAL FORM

The undersigned, as Contractor for the above project, submits the following and certifies that submittal has been reviewed and it conforms with requirements of Contract Documents except as noted.

SUBMITTAL NUMBER: _____ RESUBMITTAL: YES NO

DATE: _____ NUMBER OF COPIES SUBMITTED: _____

DESCRIPTION: _____

ASSOCIATED SPECIFICATION SECTION NO: _____

REFERENCED DRAWING SHEET NO: _____

NAME OF SUBCONTRACTOR/SUPPLIER: _____

SUBMITTED

BY: _____ DATE: _____

SIGNATURE: _____

● *****

DATE RECEIVED BY DESIGN PROFESSIONAL: _____

DISTRIBUTED TO:

OWNER CIVIL LANDSCAPE STRUCTURAL MECHANICAL ELECTRICAL OTHER: _____

*******Modify specific language below in accordance with Design Professional's review stamp.*******

ACTION:	No exceptions taken	[]
	Make corrections noted	[]
	Revise and resubmit	[]
	Rejected	[]

COMMENTS:

Submittal review corrections and comments by Design Professional do not relieve Contractor from compliance with Contract Documents. Review is only for general conformance with design concept and general compliance with information given in Contract Documents. Contractor is responsible for verifying dimensions, selecting fabrication processes and techniques of construction, coordination with other trades, and performing work in safe and satisfactory manner.

REVIEWED BY: _____ DATE: _____

SIGNATURE: _____

SECTION 013516 - ALTERATION PROJECT PROCEDURES

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 special procedures for alteration work.

1.3 DEFINITIONS

- A. Alteration Work: This term includes remodeling, renovation, repair, and maintenance work performed within existing spaces or on existing surfaces as part of the Project.
- B. Consolidate: To strengthen loose or deteriorated materials in place.
- C. Design Reference Sample: A sample that represents the Architect's prebid selection of work to be matched; it may be existing work or work specially produced for the Project.
- D. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.
- E. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by Architect.
- F. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.
- G. Repair: To correct damage and defects, retaining existing materials, features, and finishes. This includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.
- H. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.
- I. Replicate: To reproduce in exact detail, materials, and finish unless otherwise indicated.
- J. Reproduce: To fabricate a new item, accurate in detail to the original, and from either the same or a similar material as the original, unless otherwise indicated.
- K. Retain: To keep existing items that are not to be removed or dismantled.

- L. Strip: To remove existing finish down to base material unless otherwise indicated.

1.4 COORDINATION

- A. Alteration Work Subschedule: A construction schedule coordinating the sequencing and scheduling of alteration work for entire Project, including each activity to be performed, and based on Contractor's Construction Schedule. Secure time commitments for performing critical construction activities from separate entities responsible for alteration work.
 - 1. Schedule construction operations in sequence required to obtain best Work results.
 - 2. Coordinate sequence of alteration work activities to accommodate the following:
 - a. Owner's continuing occupancy of portions of existing building.
 - b. Owner's partial occupancy of completed Work.
 - c. Other known work in progress.
 - d. Tests and inspections.
 - 3. Detail sequence of alteration work, with start and end dates.
 - 4. Utility Services: Indicate how long utility services will be interrupted. Coordinate shutoff, capping, and continuation of utility services.
 - 5. Use of stairs.
- B. Pedestrian and Vehicular Circulation: Coordinate alteration work with circulation patterns within Project building(s) and site. Some work is near circulation patterns. Circulation patterns cannot be closed off entirely and in places can be only temporarily redirected around small areas of work. Plan and execute the Work accordingly.

1.5 PROJECT MEETINGS FOR ALTERATION WORK

- A. Preliminary Conference for Alteration Work: Before starting alteration work, General Contractor will conduct a conference at Project site.
 - 1. Attendees: In addition to representatives of Owner, Architect, and Contractor, Owner's insurer if required, testing service representative, and specialists.
 - 2. Agenda: Discuss items of significance that could affect progress of alteration work, including review of the following:
 - a. Alteration Work Subschedule: Discuss and finalize; verify availability of materials, specialists' personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Fire-prevention plan.
 - c. Governing regulations.
 - d. Areas where existing construction is to remain and the required protection.
 - e. Hauling routes.
 - f. Sequence of alteration work operations.
 - g. Storage, protection, and accounting for salvaged and specially fabricated items.
 - h. Existing conditions, staging, and structural loading limitations of areas where materials are stored.
 - i. Qualifications of personnel assigned to alteration work and assigned duties.

- j. Requirements for extent and quality of work, tolerances, and required clearances.
 - k. Embedded work such as flashings and lintels, special details, collection of waste, protection of occupants and the public, and condition of other construction that affects the Work or will affect the work.
 3. Reporting: general Contractor will record conference results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from conference.
- B. Coordination Meetings: Conduct coordination meetings specifically for alteration work at bi-weekly or as required by construction progress. Coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences. Meetings for other purposes should be scheduled for the same day as the coordination meetings to the greatest extent possible.
 1. Attendees: In addition to representatives of Owner, Architect, and Contractor, each specialist, supplier, installer, and other entity concerned with progress or involved in planning, coordination, or performance of alteration work activities shall be represented at these meetings. All participants at conference shall be familiar with Project and authorized to conclude matters relating to alteration work.
 2. Agenda: Review and correct or approve minutes of previous coordination meeting. Review other items of significance that could affect progress of alteration work. Include topics for discussion as appropriate to status of Project.
 - a. Alteration Work Subschedule: Review progress since last coordination meeting. Determine whether each schedule item is on time, ahead of schedule, or behind schedule. Determine how construction behind schedule will be expedited with retention of quality; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities are completed within the Contract Time.
 - b. Schedule Updating: Revise Contractor's Alteration Work Subschedule after each coordination meeting where revisions to schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
 - c. Review present and future needs of each entity present, including review items listed in the "Preliminary Conference for Alteration Work" Paragraph in this article and the following:
 - 1) Interface requirements of alteration work with other Project Work.
 - 2) Status of submittals for alteration work.
 - 3) Access to alteration work locations.
 - 4) Effectiveness of fire-prevention plan.
 - 5) Quality and work standards of alteration work.
 - 6) Change Orders for alteration work.
 - 7) Owners operational needs and coordination of relocating staff and students.
 3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.6 MATERIALS OWNERSHIP

- A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered or uncovered during the Work, regardless of whether they were previously documented, remain Owner's property.
 - 1. Carefully dismantle and salvage each item or object in a manner to prevent damage and protect it from damage, then promptly deliver it to Owner where directed.

1.7 INFORMATIONAL SUBMITTALS

- A. Alteration Work Subschedule:
 - 1. Submit alteration work subschedule within 45 days of date established for commencement of alteration work
- B. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements that are to remain, including finish surfaces, that might be misconstrued as damage caused by Contractor's alteration work operations.
- C. Alteration Work Program: Submit 30 days before work begins.
- D. Fire-Prevention Plan: Submit 30 days before work begins.

1.8 QUALITY ASSURANCE

- A. Alteration Work Program: Prepare a written plan for alteration work for whole Project, including each phase or process and protection of surrounding materials during operations. Show compliance with indicated methods and procedures specified in this and other Sections. Coordinate this whole-Project alteration work program with specific requirements of programs required in other alteration work Sections.
 - 1. Dust and Noise Control: Include locations of proposed temporary dust- and noise-control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.
 - 2. Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.
- B. Fire-Prevention Plan: Prepare a written plan for preventing fires during the Work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire-control devices during each phase or process. Coordinate plan with Owner's fire-protection equipment and requirements. Include fire-watch personnel's training, duties, and authority to enforce fire safety.
- C. Safety and Health Standard: Comply with ANSI/ASSE A10.6.

1.9 STORAGE AND HANDLING OF SALVAGED MATERIALS

A. Salvaged Materials:

1. Clean loose dirt and debris from salvaged items unless more extensive cleaning is indicated.
2. Pack or crate items after cleaning; cushion against damage during handling. Label 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.

B. Salvaged Materials for Reinstallation:

1. Repair and clean items for reuse as indicated.
2. Pack or crate items after cleaning and repairing; cushion against damage during handling. Label contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make items functional for use indicated.

C. Existing Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by Architect, items may be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after alteration and other construction work in the vicinity is complete.

D. Storage: Catalog and store items within a weathertight enclosure where they are protected from moisture, weather, condensation, and freezing temperatures.

1. Identify each item for reinstallation with a nonpermanent mark to document its original location. Indicate original locations on plans, elevations, sections, or photographs by annotating the identifying marks.
2. Secure stored materials to protect from theft.
3. Control humidity so that it does not exceed 85 percent. Maintain temperatures 5 deg F (3 deg C) or more above the dew point.

E. Storage Space:

1. Owner will arrange for limited on-site location(s) for free storage of salvaged material. This storage space does not include security and climate control for stored material.
2. Arrange for off-site locations for storage and protection of salvaged material that cannot be stored and protected on-site.

1.10 FIELD CONDITIONS

A. Survey of Existing Conditions: Record existing conditions that affect the Work by use of preconstruction photographs and preconstruction videotapes.

1. Comply with requirements specified in Section 013233 "Photographic Documentation."

- B. Discrepancies: Notify Architect of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.

PART 2 - PRODUCTS - (Not Used)

PART 3 - EXECUTION

3.1 PROTECTION

- A. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from alteration work.
 - 1. Use only proven protection methods, appropriate to each area and surface being protected.
 - 2. Provide temporary barricades, barriers, and directional signage to exclude the public from areas where alteration work is being performed.
 - 3. Erect temporary barriers to form and maintain fire-egress routes.
 - 4. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during alteration work.
 - 5. Contain dust and debris generated by alteration work, and prevent it from reaching the public or adjacent surfaces.
 - 6. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
 - 7. Protect floors and other surfaces along hauling routes from damage, wear, and staining.
 - 8. Provide supplemental sound-control treatment to isolate demolition work from other areas of the building if required.
- B. Temporary Protection of Materials to Remain:
 - 1. Protect existing materials with temporary protections and construction. Do not remove existing materials unless otherwise indicated.
 - 2. Do not attach temporary protection to existing surfaces except as indicated as part of the alteration work program.
- C. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.
- D. Utility and Communications Services:
 - 1. Notify Owner, Architect, authorities having jurisdiction, and entities owning or controlling wires, conduits, pipes, and other services affected by alteration work before commencing operations.
 - 2. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for alteration work.
 - 3. Maintain existing services unless otherwise indicated; keep in service, and protect against damage during operations. Provide temporary services during interruptions to existing utilities.

- E. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Architect immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is functioning properly.
 - 1. Prevent solids such as adhesive or mortar residue or other debris from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from alteration work.
 - 2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.
- F. Existing Roofing: Prior to the start of work in an area, install roofing protection as required by roofing warranty provided where required.

3.2 PROTECTION FROM FIRE

- A. General: Follow fire-prevention plan and the following:
 - 1. Comply with NFPA 241 requirements unless otherwise indicated.
 - 2. Remove and keep area free of combustibles, including rubbish, paper, waste, and chemicals, unless necessary for the immediate work.
 - a. If combustible material cannot be removed, provide fire blankets to cover such materials.
- B. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or combustible materials, including welding, torch-cutting, soldering, brazing, removing paint with heat, or other operations where open flames or implements using high heat or combustible solvents and chemicals are anticipated:
 - 1. Obtain Owner's approval for operations involving use of open-flame or welding or other high-heat equipment. Notify Owner at least 72 hours before each occurrence, indicating location of such work.
 - 2. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that the area is safe.
 - 3. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.
 - 4. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
 - 5. Fire Watch: Before working with heat-generating equipment or combustible materials, station personnel to serve as a fire watch at each location where such work is performed. Fire-watch personnel shall have the authority to enforce fire safety. Station fire watch according to NFPA 51B, NFPA 241, and as follows:
- C. Fire-Control Devices: Provide and maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for the type of fire risk in each work area. Ensure that nearby personnel and the fire-watch personnel are trained in fire-extinguisher and blanket use.

- D. Sprinklers: Where sprinkler protection exists and is functional, maintain it without interruption while operations are being performed. If operations are performed close to sprinklers, shield them temporarily with guards.
 - 1. Remove temporary guards at the end of work shifts, whenever operations are paused, and when nearby work is complete.

3.3 PROTECTION DURING APPLICATION OF CHEMICALS

- A. Protect motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm or spillage resulting from applications of chemicals and adhesives.
- B. Cover adjacent surfaces with protective materials that are proven to resist chemicals selected for Project unless chemicals being used will not damage adjacent surfaces as indicated in alteration work program. Use covering materials and masking agents that are waterproof and UV resistant and that will not stain or leave residue on surfaces to which they are applied. Apply protective materials according to manufacturer's written instructions. Do not apply liquid masking agents or adhesives to painted or porous surfaces. When no longer needed, promptly remove protective materials.
- C. Do not apply chemicals during winds of sufficient force to spread them to unprotected surfaces.
- D. Neutralize alkaline and acid wastes and legally dispose of off Owner's property.
- E. Collect and dispose of runoff from chemical operations by legal means and in a manner that prevents soil contamination, soil erosion, undermining of paving and foundations, damage to landscaping, or water penetration into building interior.

3.4 GENERAL ALTERATION WORK

- A. Have specialty work performed only by qualified specialists.
- B. Ensure that supervisory personnel are present when work begins and during its progress.
- C. Record existing work before each procedure (preconstruction), and record progress during the work. Use digital preconstruction documentation **photographs or video recordings**. Comply with requirements in Section 013233 "Photographic Documentation."
- D. Perform surveys of Project site as the Work progresses to detect hazards resulting from alterations.
- E. Notify Architect of visible changes in the integrity of material or components whether from environmental causes including biological attack, UV degradation, freezing, or thawing or from structural defects including cracks, movement, or distortion.
 - 1. Do not proceed with the work in question until directed by Architect.

END OF SECTION

SECTION 01 4000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Installation quality control.
2. Reference standards.
3. Mock-ups.
4. Field samples.
5. Inspection and testing laboratory services.
6. Manufacturer's field services and reports.
7. Owner's roof observation services and reports
8. Owner's Performance Assurance Contractor's (PAC) services and reports.

B. Related requirements:

1. Document 00 7200 - General Conditions:
 - a. Paragraph 3.3: Contractor's supervision and construction procedures.
 - b. Subparagraph 2.2.4: Owner's responsibilities for testing and inspections.
 - c. Article 12: Contractor's responsibility for uncovering and correction of work.
 - d. Paragraph 13.5: Requirements for tests and inspections.
2. Section 01 3100 – Project Management and Coordination: Requirements for coordination with Owner's separate contractors.
3. Section 23 0593 - Testing, Adjusting, and Balancing: Testing and balancing of HVAC system to be paid for by Owner.
4. Section 23 0500 – Common Work Results for HVAC: Contractor's Submittals; Approvals, Records, and As-Built Drawings.

5. Section 23 0810 – Performance Assurance for HVAC: Contractor’s Submittals; Contractor’s Responsibilities, Testing Preparation, General Testing Requirements; HVAC Systems, Subsystems and Equipment Testing Procedures.

1.2 INSPECTION AND TESTING LABORATORY SERVICES

- A. Unless required otherwise in the Contract, Owner shall appoint, employ, and pay for services of an independent firm to perform routine inspections and compliance for:
 - 1 Test, Adjust, and Balance HVAC system and controls as specified in Section 23 0593 - Testing, Adjusting, and Balancing. TAB services are to be provided by Owner’s separate PAC contractor.
 2. Other materials, components, and systems where routine testing to determine compliance with Contract Documents is required. See Article 2.2 of the General Conditions
- B. Testing firm shall perform inspections, tests, and other services specified in individual specification sections and as required.

1.4 OWNER’S PERFORMANCE ASSURANCE CONTRACTOR’S (PAC) SERVICES AND REPORTS

- A. When HVAC system installation is being performed, the Owner will employ a separate Performance Assurance Contractor (PAC) to observe, test, and report on installation, quality of workmanship, system performance, and as applicable, to report, via the Owner’s Representative, to the Design Professional on HVAC installation field deficiencies that may impact completion of performance assurance activities.
- B. Contractor's responsibilities:
 1. Cooperate with PAC and provide assistance in accessing the areas of HVAC and controls work and in performing valid tests. Provide access to complete field set of Contract Documents and storage for PAC’s testing equipment.
 2. Submit detailed work schedules for HVAC and controls installation as required by the PAC and Design Professional for review in advance of, and during HVAC & controls work. Promptly notify PAC and Design Professional regarding proposed or anticipated modifications which may alter schedule as required by Section 01 3100.
 3. Notify PAC and Design Professional in advance regarding any tests or inspections of the HVAC and controls system to be independently performed by

other testing services or manufacturer's technical representatives. Allow reasonable opportunity for PAC to witness such tests or inspections and send to PAC copies of related reports.

7. The list of PAC Construction Phase deliverables and the time requirements to complete them shall be obtained by the Contractor from the PAC and shall be included within the Project Schedule. These shall be identified as critical paths with milestones related to the quality assurance checking of the HVAC-R and control systems.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Site mobilization plan.
2. Temporary services: Electrical, lighting, heating, ventilating, water, telephone, and facsimile.
3. Fencing, barriers, and other temporary controls.
4. Temporary erosion and sediment controls including NPDES-SWPPP requirements.
5. Construction facilities: Temporary buildings, sanitary facilities, access, and parking.
6. Protection of Work and existing facilities.
7. Project sign.
8. Bulletin board.

B. Related documents and sections:

1. Document 00 7200 - General Conditions:
 - a. Paragraph 3.13: Contractor's use of site..
 - b. Paragraph 3.15: Contractor's responsibility for cleaning.
 - c. Article 10: Safety precautions and programs.
2. Section 01 3100: Project Management and Coordination
3. Section 01 7000 - Execution Requirements: Progress cleaning.

1.2 REFERENCES

- A. NFPA 10 - Standard for Portable Fire Extinguishers.

- B. NFPA 241 - Safeguarding Building Construction, Alterations, and Demolition Operations.

1.3 SITE MOBILIZATION PLAN

- A. Coordinate locations for temporary facilities with Design Professional and Owner.
- B. Based upon information indicated on Drawings, prepare site mobilization plan in accordance with requirements for site logistics plan in Subparagraph 3.13.14 in Document 00 7200 General Conditions.
- C. Present 3 copies of plan at Pre-Construction Conference in accordance with Section 01 3100 - Project Management and Coordination.
- D. Prior to mobilization, revise and resubmit to Design Professional site mobilization plan incorporating final revisions made at Pre-Construction Conference and approved by Design Professional and Owner.

1.4 TEMPORARY ELECTRICITY

- A. Connect to existing power source at site. Do not disrupt Owner's need for continuous service. Provide service disconnect and overcurrent protection. Provide temporary feeder as required. Owner will pay cost of electricity used. Exercise measures to conserve power.
- B. Provide power outlets for construction operations with branch wiring, distribution boxes, and flexible power cords as required.
- C. Provide power outlets for construction operations with branch wiring, distribution boxes, and flexible power cords as required.
- D. Permanent convenience receptacles may be utilized during construction.

1.5 TEMPORARY LIGHTING

- A. Provide lighting for construction operations in accordance with Paragraph 3.13 in the General Conditions. Lighting levels shall be appropriate for type and difficulty of work. Use these minimums as guidelines:
- B. After dark, provide security lighting for interior and exterior work and storage areas.
- C. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.

- D. Maintain lighting and provide routine repairs.
- E. Permanent building lighting may be utilized during construction. Document existing lighting system conditions at start of Work and submit report to Design Professional for approval before Work begins. Re-lamp, replace, or repair existing fixtures at end of job to return lighting to conditions documented prior to commencement of Work.

1.6 TEMPORARY HEATING AND VENTILATING

- A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, and gases.
- B. Provide temporary fan units to maintain clean air for construction operations.
- C. Maintain minimum ambient temperature of 50 degrees F in interior areas where construction is in progress.
- D. Use Owner's existing HVAC system to maintain specified conditions. Owner will pay cost of energy used. Exercise measures to conserve energy.
- E. If Owner's existing HVAC system is temporarily insufficient or inoperable due to the Work, provide and pay for supplemental heating devices needed to maintain specified conditions and in such a manner as to prevent damage to existing building and systems.
- F. Change all HVAC filters in existing system serving area of Work at end of Project.

1.7 TEMPORARY WATER SERVICE

- A. Connect to existing water source at site for construction operations. Owner will pay cost of water used. Exercise measures to conserve water.

1.8 COMMUNICATIONS

- A. Provide, maintain, and pay for telephone service to field office. School telephones will not be available to Contractor's workforce unless for an emergency.
- B. Provide, maintain, and pay for facsimile service to field office.
- C. Provide, maintain, and pay for internet service.

1.9 FENCING

- A. Provide temporary fencing around building and materials storage site. Completely separate construction from existing facilities, student pathways and related exterior areas.
- B. Type: Panelized 6 foot high commercial grade chain link fence. Equip with vehicular and pedestrian gates with locks.

1.10 BARRIERS AND PROTECTION

- A. Security: Provide to protect Work and existing facilities from unauthorized entry, vandalism, and theft. Coordinate with Owner's security program and personnel.
- B. Barriers: Provide to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from construction operations.
- C. Barricades and covered walkways: As required by Design Professional, Owner and governing authorities for safe public access to existing buildings.
- D. Enclosures: Provide temporary, insulated, weather tight closures of exterior openings to provide acceptable working conditions, protect Work, and prevent unauthorized entry. Fit with lockable doors.
- E. Temporary partitions: Provide to separate work areas from existing building at point of connection. Prevent penetration of dust and moisture into existing & completed portions of building.
- F. Emergency exits shall be maintained during construction. Provide separate barriers as appropriate.
- G. Protect existing detection devices such as smoke detectors and sensors from construction dust.
- H. Protect existing trees and plants designated to remain. Replace damaged plant material.
- I. Hand-water existing trees, plants and grass as necessary to maintain them viable in the event that existing irrigation system is made temporarily inoperable due to the Work. Replace dead plant material as required in the event of failure to comply with this provision.

1.11 PROTECTION OF EXISTING AND INSTALLED WORK

- A. Protect installed Work. Control activity in immediate work area.
- B. Provide temporary and removable protection for installed products.
- C. Protect finished floors, stairs, roofs, and other surfaces from traffic, dirt, wear, and movement of heavy objects with durable sheet materials.
- D. Prohibit traffic and storage on roof surfaces and landscaped areas.

1.12 TEMPORARY FIRE PROTECTION

- A. Install and maintain temporary fire protection components. Establish and follow procedures to protect against fire losses. Comply with NFPA 241.
- B. Fire extinguishers: Provide hand carried, portable, UL rated fire extinguishers of type and size recommended by NFPA 10 for building exposure conditions. Place in accessible, convenient locations in clear view with a minimum of one extinguisher per floor.
- C. Access: Maintain unobstructed access to fire hydrants, water supply, fire extinguishers, stairways, and access routes for fighting fires.
- D. Heating devices: Exercise care and monitor use of temporary heaters to minimize fire risk.
- E. Store combustible materials in fire-safe containers.
- F. Volatile products: Do not store paints, varnishes, paint removers, solvents, adhesives, cleaning rags, and other volatile products in building. Take precautionary measures to prevent fire hazards and spontaneous combustion.
- G. Cutting and welding: Approve in advance use of open flame cutting, welding, and soldering equipment. Ensure that safe conditions exist before granting approval.

1.13 TEMPORARY EROSION AND SEDIMENT CONTROLS

- A. Prevent temporary collection of sediment on sidewalks, parking lots, streets and driveways. Clean such surfaces promptly if such conditions exist due to the Work.
- B. National Pollution Discharge Elimination System (NPDES) permit and procedures for preparing a Storm Water Pollution Prevention Plan (SWPPP).
 - 1. Contractor shall determine whether Project requires an EPA NPDES storm

water discharge permit in conformance with all regulations governing the disturbance of construction site areas.

2. If storm water discharge permit is required, then both Contractor and Owner shall be designated as separate permittees and the Contractor shall do the following:
 - a. Prepare a Storm Water Pollution Prevention Plan (SWPPP) document as necessary to ensure compliance with any and all NPDES construction storm water permitting plan requirements.
 - b. Prepare and submit all EPA documentation and forms required of Contractor for permit.
 - c. Assist Owner with preparation and submittal of all EPA documentation and forms specifically required of Owner for permit. Provide all required project-related information to Owner as necessary.
 - d. At Final Completion of Project, Contractor shall complete and submit documentation to EPA as required and to Design Professional as part of Project Closeout documentation package. See Section 01 78 00 of Specifications.
3. If a storm water discharge permit is not required, then the Contractor shall submit to the Design Professional and Owner prior to mobilization a signed statement containing specific written justification why such permit is not required on the Project.
4. The Contractor shall manage the discharge of storm water from the site in accordance with NPDES permit and the provisions of the SWPPP. The Contractor shall be responsible for installing and maintaining any necessary storm water control measures in accordance with control device manufacturer's recommendations and the provisions of the SWPPP. The Contractor shall monitor the suitability of the designated control measures and management practices to achieve the storm water quality provisions of the NPDES permit, and shall make any necessary changes to the controls and practices in order to meet the permit requirements. The Contractor shall be responsible for updating the SWPPP and maintaining all records related to the SWPPP. A copy of the approved SWPPP shall be kept on the jobsite at all times. Contractor shall be liable for all fines and construction delays resulting from any governmental agency enforcement action due to failure by the Contractor to satisfy the above requirements.
5. Contractor is responsible for payment of all applicable fees and permits related to

SWPPP approval process and for full cost of control measures for the Project.

1.14 ACCESS

- A. Refer to Drawings GI103 for location of acceptable staging area, access routes and site entrances. Protect existing curbs and walks traversed by construction vehicles from damage.
- B. Identify access to Contractor's work and office area with appropriate signs so that delivery personnel and others may contact Contractor. School office shall not be used as destination for Contractor's deliveries.
- C. Prevent unauthorized personnel from accessing school building or site through Contractor's work area.

1.15 FIELD FACILITIES

- A. Provide and maintain a weathertight, fully equipped field office.
- B. Provide space for project meetings with table and chairs to accommodate 6 persons.
- B. Provide and maintain storage sheds and other facilities as required.
- C. Arrange for parking for work force in manner approved by Owner. Do not limit Owner's requirements for parking.

1.16 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required sanitary facilities for work force.
- B. New and existing toilet facilities shall not be used by work force.

1.17 DRINKING WATER

- A. Provide independent source of drinking water for workforce. School drinking fountains shall not be routinely available for Contractor's use.

1.18 PROJECT SIGNS

- A. PSFA Construction Sign. See Section 01 5001.
 - 1. Furnish project sign and erect on site at location designated by Design

Professional.

2. Construction: 4'-0" wide by 5'-0" tall constructed of 3/4" inch exterior plywood bolted to 4 inch by 4 inch treated wood posts.
3. Sign shall be prepared by professional sign painter using either painted exhibit lettering or die cut adhesive applied letters.
4. Design, style and proportional sizes of lettering, color, and text shall be as shown in Section 01 5001.
6. Allow no other signs to be displayed without approval of Design Professional or as required by Owner.

A. School District Construction Sign.

1. Furnish project sign and erect on site at location designated by Owner.
2. Construction: 4'-0" wide by 5'-0" tall constructed of 3/4" inch exterior plywood bolted to 4 inch by 4 inch treated wood posts.
3. Sign shall be prepared by professional sign painter using either painted exhibit lettering or die cut adhesive applied letters.
4. Design, style and sizes of lettering, color, and text shall be as shown as provided by Design Professional.
5. PSFA sign will be required if there is PSCOC funding in Project. Allow no other signs to be displayed without approval of Design Professional.

1.18 BULLETIN BOARD

- A. Furnish and maintain bulletin board adjacent to field office. Display the following throughout construction period:
2. State wage rates.
 3. Safety requirements.
 4. Official notices and announcements.

1.19 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary above grade and buried utilities, equipment, facilities, and excess

materials prior to final inspection.

B. Clean and repair damage caused by installation of temporary facilities.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

[(PROJECT SIGN DRAWINGS FOLLOW)]



Black outline

Round seal with black lettering & graphics on round white background (see enlarged detail next sheet)

Red background

District & school names here

2 inch wide white strip

1 inch wide red stripe

Black lettering on yellow background

STATE OF NEW MEXICO
Governor Susana Martinez

CAPITAL IMPROVEMENTS

DISTRICT:
SCHOOL:

FUNDED BY THE NEW MEXICO
PUBLIC SCHOOL CAPITAL OUTLAY COUNCIL
VISIT: WWW.NMPSEA.ORG

ADMINISTERED BY THE NEW MEXICO
PUBLIC SCHOOL FACILITIES AUTHORITY
PH: 505-988-5989

Your Tax Dollars At Work As

Appropriated by Your State Legislature!

Yellow: Dunn-Edwards DEA117
Red: Dunn-Edwards DEA104
White: Dunn-Edwards DEW380

01 5001-1



1 1 inch diameter seal

Black outline around seal



SECTION 015639 - TEMPORARY TREE AND PLANT PROTECTION

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 general protection of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.
- B. Related Requirements:
 - 1. Section 015000 "Temporary Facilities and Controls" for temporary site fencing.
 - 2. Section 311000 "Site Clearing" for removing existing trees and shrubs.

1.3 DEFINITIONS

- A. Caliper: Diameter of a trunk measured by **a diameter tape or the average of the smallest and largest diameters** at a height 6 inches (150 mm) above the ground for trees up to and including 4-inch (100-mm) size at this height and as measured at a height of 12 inches (300 mm) above the ground for trees larger than 4-inch (100-mm) size.
- B. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction and indicated on Drawings.
- C. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction and **defined by a circle concentric with each tree with a radius 1.5 times the diameter of the drip line unless otherwise indicated.**
- D. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each type of the following:
 - 1. Protection-Zone Fencing: Assembled Samples of **manufacturer's standard size made from full-size components.**
 - 2. Protection-Zone Signage: Full-size Samples of each size and text, ready for installation.

1.5 INFORMATIONAL SUBMITTALS

- A. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.
1. Use sufficiently detailed photographs or video recordings.
 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

1.6 QUALITY ASSURANCE

- A. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed temporary tree and plant protection work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site during execution of the Work.

1.7 FIELD CONDITIONS

- A. The following practices are prohibited within protection zones:
1. Storage of construction materials, debris, or excavated material.
 2. Moving or parking vehicles or equipment.
 3. Foot traffic.
 4. Erection of sheds or structures.
 5. Impoundment of water.
 6. Excavation or other digging unless otherwise indicated.
 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- B. Do not direct vehicle or equipment exhaust toward protection zones.
- C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Protection-Zone Fencing: Fencing fixed in position and meeting **one of** the following requirements: **Previously used materials may be used when approved by Architect.**
1. Plastic Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene fabric with 2-inch (50-mm) maximum opening in pattern and weighing a minimum of 0.4 lb/ft. (0.6 kg/m); remaining flexible from minus 60 to plus 200 deg F (minus 16 to plus 93 deg C); inert to most chemicals and acids; minimum tensile yield strength of 2000 psi (13.8 MPa) and ultimate tensile strength of 2680 psi (18.5 MPa); secured with plastic bands or galvanized-steel or stainless-steel

wire ties; and supported by tubular or T-shape galvanized-steel posts spaced not more than 96 inches (2400 mm) apart.

- a. Height: **48 inches**
 - b. Color: High-visibility orange, nonfading.
- B. Protection-Zone Signage: Shop-fabricated, rigid plastic or metal sheet with attachment holes prepunched and reinforced; legibly printed with nonfading lettering and as follows:
1. Size and Text: Caution Tree-Protection Zone
 2. Lettering: **3-inch** high minimum, **black** characters on **white** background.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- B. Prepare written report, endorsed by arborist, listing conditions detrimental to tree and plant protection.

3.2 PROTECTION ZONES

- A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones **before materials or equipment are brought on the site and construction operations begin** in a manner that will prevent people **and animals** from easily entering protected areas except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.
- B. Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by Architect. Install one sign for every protection-zone fencing.
- C. Maintain protection zones free of weeds and trash.
- D. Maintain protection-zone fencing and signage in good condition as acceptable to Architect and remove when construction operations are complete and equipment has been removed from the site.
 1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
 2. Temporary access is permitted subject to preapproval in writing by arborist if a root buffer effective against soil compaction is constructed as directed by arborist. Maintain root buffer so long as access is permitted.

3.3 EXCAVATION

- A. Trenching within Protection Zones: Where utility trenches are required within protection zones, excavate under or around tree roots by hand or with air spade, or tunnel under the roots by drilling, auger boring, or pipe jacking. Do not cut main lateral tree roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots as required for root pruning. If excavating by hand, use narrow-tine spading forks to comb soil and expose roots.

3.4 ROOT PRUNING

1. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
2. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
3. Cover exposed roots with burlap and water regularly.
4. Backfill as soon as possible according to requirements in Section 312000 "Earth Moving."

3.5 REPAIR AND REPLACEMENT

- A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or to be relocated that are damaged by construction operations, in a manner approved by Architect.
 1. Submit details of proposed pruning and repairs.
 2. Perform repairs of damaged trunks, branches, and roots within 24 hours according to arborist's written instructions.
 3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by Architect.
- B. Trees: Remove and replace trees indicated to remain that are more than **25** dead or in an unhealthy condition **before the end of the corrections period** or are damaged during construction operations that Architect determines are incapable of restoring to normal growth pattern.
 1. Small Trees: Provide new trees of same size and species as those being replaced for each tree that measures **6 inches** or smaller in caliper size.
 2. Large Trees: Provide **two** new tree(s) of **6-inch** caliper size for each tree being replaced that measures more than **6 inches**.
 - a. Species: match existing

3.6 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove excess excavated material, displaced trees, trash, and debris and legally dispose of them off Owner's property.

END OF SECTION 015639

SECTION 01 6300 - PRODUCT SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for product options and substitution procedures.
- B. Related documents and sections:
 - 1. Section 00 7200 General Conditions:
 - a. Paragraph 3.4 – Labor and Materials

1.2 SUBSTITUTIONS

- A. During the proposal process, Design Professional will consider written requests from qualified offerors, subcontractors, and manufacturers for substitutions.
 - 1. Submit separate request for each substitution with Form 01 6301 - Prior Approval Substitution Request Form. Copy of form follows this Section.
 - 2. Submit substitution request in accordance with procedures and time limitations stated in Document 00 2113 - Instructions to Bidders.
 - 3. Substitutions approved during the proposal process will be listed in Addenda.
- B. After Contract award:
 - 1. After signing of Agreement Between Owner and Contractor, Design Professional will consider written requests for substitutions in accordance with Subparagraph 3.4.2 of the General Conditions.
 - 2. Submit separate request for each substitution with Form 01 6302 - Contractor Substitution Request Form. Copy of form follows this Section. Provide data documenting need for substitution and substantiating compliance of proposed product with Contract Documents. Include proposed changes to contract amount and time if substitution is accepted.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION - FORMS FOLLOW

PRIOR APPROVAL SUBSTITUTION REQUEST FORM

The undersigned, qualified bidder, subcontractor, manufacturer, or supplier requests that the following product be accepted for use in the Project

PRODUCT: _____

MODEL NO.: _____

MANUFACTURER: _____

ADDRESS: _____

The above product would be used in lieu of

PRODUCT: _____

specified in

SECTION: _____

PARAGRAPH: _____

Attached are the following circled items:

1. Product description including specifications, performance and test data, and applicable reference standards.
2. Drawings.
3. Photographs.
4. Samples.
5. Tabulated comparison with specified product.
6. For items requiring color selections, full range of manufacturer's color samples.
7. Other: _____

The undersigned certifies that the following statements are correct. Explanations for all items which are **not** true are attached.

1. Proposed substitution has been thoroughly investigated and function, appearance, and quality meet or exceed that of specified product. TRUE FALSE
2. Same warranty will be provided for substitution as for specified product. TRUE FALSE
3. **No** aspect of Project will require re-design. TRUE FALSE
4. Use of substitution will **not** adversely affect:
 - a. Dimensions shown on Drawings. TRUE FALSE
 - b. Construction schedule and date of completion. TRUE FALSE
 - c. Work of other trades. TRUE FALSE
5. Maintenance service and replacement parts for proposed substitution will be readily available in [Las Cruces] [El Paso] [Roswell] [Albuquerque] [Southern New Mexico] [Northern New Mexico] [_____] area. TRUE FALSE
6. Proposed substitution does **not** contain asbestos in any form. TRUE FALSE

Submitted By:

COMPANY: _____

ADDRESS: _____

TELEPHONE NUMBER: _____

NAME OF PERSON SUBMITTING REQUEST: _____

TITLE: _____

DATE: _____

CONTRACTOR SUBSTITUTION REQUEST FORM

The undersigned, as Contractor for the above Project, requests that the following product be accepted for use in the Project

PRODUCT: _____

MODEL NO.: _____

MANUFACTURER: _____

ADDRESS: _____

The above product would be used in lieu of

PRODUCT: _____

specified in

SECTION: _____

PARAGRAPH: _____

Reason for substitution request: _____

Attached are the following circled items:

1. Product description including specifications, performance and test data, and applicable reference standards.
2. Drawings.
3. Photographs.
4. Samples.
5. Tabulated comparison with specified product.
6. For items requiring color selections, full range of manufacturer's color samples.
7. Documentation of reason for request.

- 8. Cost data for comparing proposed substitution with specified product.
- 9. Other: _____

The undersigned certifies that the following statements are correct. Explanations for all items which are **not** true are attached.

- | | |
|--|------------|
| 1. Proposed substitution has been thoroughly investigated and function, appearance, and quality meet or exceed that of specified product. | TRUE FALSE |
| 2. Same warranty will be provided for substitution as for specified product. | TRUE FALSE |
| 3. No aspect of Project will require re-design. | TRUE FALSE |
| 4. Use of substitution will not adversely affect: | |
| a. Dimensions shown on Drawings. | TRUE FALSE |
| b. Construction schedule and date of completion. | TRUE FALSE |
| c. Work of other trades. | TRUE FALSE |
| 5. Maintenance service and replacement parts for proposed substitution will be readily available in [Las Cruces] [El Paso] [Roswell] [Albuquerque] [Southern New Mexico] [Northern New Mexico] [_____] area. | TRUE FALSE |
| 6. Proposed substitution does not contain asbestos in any form. | TRUE FALSE |
| 7. All changes to Contract Sum related to use of proposed substitution are included in price listed below. Contractor waives claims for additional costs related to acceptance of substitution which may subsequently become apparent. | TRUE FALSE |
| 8. Costs of modifying project design caused by use of proposed substitution which subsequently become apparent will be paid for by Contractor. | TRUE FALSE |

If substitution request is accepted:

Contract Sum will be [decreased] [increased] by \$ _____

Contract Time will be [decreased] [increased] by _____
calendar days.

Submitted By:

CONTRACTOR: _____

ADDRESS: _____

TELEPHONE NUMBER: _____

NAME OF PERSON SUBMITTING REQUEST: _____

TITLE: _____

DATE: _____

SECTION 01 7000 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Basic requirements for examination, preparation and installation.
2. Requirements and limitations for cutting and patching incidental to work, including excavation and backfilling, and as required making several parts fit together.
3. Progress cleaning.

B. Related documents and sections:

1. General Conditions:
 - a. Paragraph 3.13: Contractor's responsibilities regarding use of the site.
 - b. Paragraph 3.14: Contractor's responsibilities regarding cutting and patching operations.
 - c. Article 12: Uncovering and correction of work.
2. Section 01 5000 - Temporary Facilities and Controls: Temporary barriers and enclosures.
3. Section 01 7700 - Closeout Procedures: Final cleaning.
4. Section 02 4119 - Selective Demolition: Minor demolition required to accommodate new construction and renovation.
5. Section 07 9200 - Joint Protection: Sealing of conduits, piping, and other items penetrating structure.

1.2 LOCATION OF UNDERGROUND UTILITIES

- A. The Contractor shall arrange for all spotting of lines by utility companies in advance of any excavation work.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Patching and replacement materials: Those used for original installation.
- B. Product substitutions: For any proposed change in patching materials, submit request for substitution in accordance with Section 01 6300 - Product Substitution Procedures.

PART 3 - EXECUTION

3.1 ROOF PENETRATIONS

- A. New roofing:
 - 1. Coordinate, locate and schedule roof penetrations prior to installation of new roof system.
 - 2. Coordinate roof penetrations such that installation does not void roof warranty.
- B. Existing roofing: Prior to penetrating, cutting, and patching existing roofing, verify with Owner if roof is under warranty. If warranted, employ roof contractor certified by manufacturer of roof system, make required inspections and notifications, and perform cutting and patching as required to ensure warranty is not violated. Protect building interior during operations and return roof to weathertight condition after the work is performed.

END OF SECTION

SECTION 017310 - CUTTING AND PATCHING

1.1 GENERAL

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
- C. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
 - 1. If possible, retain original Installer or fabricator to cut and patch exposed Work listed below. If it is impossible to engage original Installer or fabricator, engage another recognized, experienced, and specialized firm.
- D. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

1.2 PRODUCTS

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

1.3 EXECUTION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.
- B. Temporary Support: Provide temporary support of Work to be cut.
- C. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- D. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

- E. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to minimize interruption of services to occupied areas.
- F. Performance: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- G. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - 4. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
 - 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

PART 2 - Not Used

PART 3 - Not Used

PART 4 - Not Used

PART 5 - Not Used

PART 6 - Not Used

PART 7 - Not Used

END OF SECTION

SECTION 01 7500 - STARTING AND ADJUSTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes: General procedures for starting, monitoring, and adjusting items of equipment and complete systems.
- B. Related sections:
 - 1. Section 01 3300 – Submittal Procedures: HVAC & Controls Construction Checklists.
 - 2. Section 01 7800 - Closeout Submittals: Operation and maintenance manuals
 - 3. Section 23 0593 - Testing, Adjusting, and Balancing: Balancing of HVAC system.
 - 4. Section 23 0810 Performance Assurance for HVAC: Contractor’s Submittals; Contractor’s Responsibilities, Testing Preparation, General Testing Requirements; HVAC Systems, Subsystems & Equipment Testing Procedures.

PART 2- PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 STARTING OF SYSTEMS

- A. Submit written Construction Checklists in accordance with Section 01 3300 - Submittal Procedures that equipment and systems have been properly installed and are functioning correctly.

END OF SECTION

SECTION 01 7700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Closeout procedures.
2. Final cleaning.
3. Final inspection.
4. Inspection held immediately prior to end of one year correction period.

B. Related documents and sections:

1. Document 00 7200 - General Conditions of the Contract,
 - a. Paragraph 9.8: Substantial Completion.
 - b. Paragraph 9.9: Partial occupancy.
 - c. Paragraph 9.10: Closeout Requirements
 - d. Paragraph 9.11: Final completion and final payment.
 - e. Subparagraph 12.2.2.1: One year correction period for Contractor to correct defective work.
 - f. Paragraph 3.13: Use of site.
2. Section 01 7000 - Execution Requirements: Progress cleaning.
3. Section 01 7500 – Starting and Adjusting: Starting and adjusting items of equipment and complete systems.
4. Section 01 7800 - Closeout Submittals: Submittal of project record documents, operation and maintenance manuals, warranties, certificates of inspection, extra materials, and keys.
5. Section 01 7900 – Demonstration and Training: Demonstrations and training for Owner's personnel.

1.2 SUBSTANTIAL COMPLETION PROCEDURES

- A. Prior to or in conjunction with submission of Contractor's request for Substantial Completion, submit the items specified in Section 01 7800 - Closeout Procedures:
- B. Comply with Document 00 7200 - General Conditions of the Contract, Paragraph 9.8 for issuance of Certificate of Substantial Completion.

1.3 FINAL COMPLETION PROCEDURES

- A. Follow procedures as outlined in Article 9 of the General Conditions.

1.4 FINAL CLEANING

- A. Execute final cleaning prior to final inspection by methods and with materials and equipment suitable for commercial/institutional building maintenance. See Paragraph 3.13 – General Conditions.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 01 7800 - CLOSEOUT SUBMITTALS

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes procedures for preparing and submitting closeout submittals:
 - 1. Project Record Documents.
 - 2. Operation and maintenance manuals and data.
 - 3. Warranties.
 - 4. Insurance information.
 - 5. Certificates of inspection and compliance.
 - 6. Maintenance tools.
 - 7. Extra materials.
 - 8. Keys.
- B. Related documents and sections:
 - 1. Document 00 7200 - General Conditions of the Contract:
 - a. Paragraph 3.5: Contractor's warranty that Work is of good quality and free from defects and conforms to Contract Documents.
 - b. Subparagraph 9.9.1: Commencement of warranties and correction period.
 - c. Subparagraph 9.10.1: Closeout requirements
 - d. Paragraph 9.11: Affidavits and Certificates required before Final Payment
 - e. Subparagraph 12.2.2.1: One year correction period for Contractor to correct defective work.
 - 2. Section 01 3300 - Submittal Procedures: Submittal of shop drawings, product data, samples, installation instruction, reports and other submittals during construction prior to closeout.

- 3 Section 01 7500 – Starting and Adjusting: Starting and adjusting items of equipment and complete systems.
- 4 Section 01 7700 – Closeout Procedures: Requirements for achieving Substantial Completion and Final Completion.
- 5 Section 01 7801 – Equipment Inventory and Roofing Data Collection: Requirements for completing equipment inventory and roofing data submittals.

1.2 OPERATION AND MAINTENANCE DATA

- A. Provide operation and maintenance data as indicated in the individual specification sections.
- B. Provide written sequence of operations for each automated building system, including those related to the following:
 1. Life safety system(s).
 2. Electrical system(s).
 3. Mechanical system(s).
 4. Other automated building systems and components.
- C. Submission:
 1. Submit data to Design Professional in one or more binders.
 2. Submit for review one draft copy 30 days prior to need date or as otherwise specified. This copy will be returned after review with Design Professional's comments. Revise content as required.
 3. Once approved, submit copies of final operation and maintenance manuals as follows:
 - c. Two (2) hard copies and two (2) electronic USB thumb drives of entire manual to District.
 4. All manuals shall be submitted prior to or in conjunction with Contractor's request for Substantial Completion and prior to demonstration and training session.

D. Contents:

1. Appropriate design criteria.
2. Equipment parts list.
3. Equipment inventory data (on Owner-provided electronic forms) and parts lists.
4. Roofing data (on Owner-provided electronic forms).
5. Operating instructions.
6. Maintenance instruction for equipment and finishes.
7. Shop drawings and product data.
8. Written sequence of operations for each automated building system including those related to the following:
 - a. Life safety system(s).
 - b. Electrical system(s).
 - c. Mechanical system(s).
9. Testing, balancing, and other field quality reports.
10. Copies of warranties.
11. Directory listings
12. Other material and information as indicated in individual specification sections and as necessary for operation and maintenance by Owner's personnel.

E. Form:

1. Hard copies of manuals shall be 8-1/2 x 11 inch text pages bound in three ring expansion binders with a hard durable plastic cover. All documents to be originals unless otherwise noted.
2. Prepare binder covers with printed subject title of manual, title of project, date, and volume number when multiple binders are required. Printing shall be on face and spine.

3. Internally subdivide the binder contents with divider sheets with typed tab titles under reinforced plastic tabs. Place dividers at beginning of each chapter, part, section, and appendix.
4. Provide a table of contents for each volume.
5. Provide directory listing as appropriate with names addresses, and telephone numbers of Design Professional, Contractor, subcontractors, equipment suppliers, and nearest service representatives. Provide emergency 24-hour service contact information for all subcontractors, service contractors and principal vendors.
6. Provide electronic USB thumb drive with each manual including all data required to be submitted electronically. Include hard copy with each manual.

1.3 WARRANTIES

- A. Provide duplicate notarized copies of special and extended warranties as required by individual specifications sections.
- B. Submit warranties to Design Professional prior to or in conjunction with submission of Notice of Substantial Completion.
- C. Execute and assemble warranties from subcontractors, suppliers, and manufacturers.
- D. Provide Table of Contents and assemble in three ring binder with a hard durable plastic cover. Internally subdivide the binder contents with permanent page dividers, with tab titling clearly typed under reinforced laminated plastic tabs.
- E. For items of work delayed beyond date of Substantial Completion, provide updated warranty submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.4 CERTIFICATES OF INSPECTION AND COMPLIANCE

- A. For inspections throughout the construction period required by regulatory agencies, obtain and maintain certificates issued to show compliance.
- B. Assemble certificates and any formal written evidence of regulatory compliance in three ring binder with table of contents and submit to Design Professional prior to or in conjunction with submission of Notice of Substantial Completion.

- C. Certificate of Occupancy: Prior to Substantial Completion, obtain from authorities having jurisdiction Certificate of Occupancy. Submit with Notice for Substantial Completion.

1.5 INSURANCE INFORMATION

- A. Submit prior to or in conjunction with submission of Contractor's request for Substantial Completion information regarding insurance including change over requirements and insurance extensions.

1.6 MAINTENANCE TOOLS

- A. Provide any hardware and software tools (including software keys) that are proprietary to the mechanical systems and that may be necessary for service during their lifecycle.
- B. Tools shall be as provided or recommended by manufacturers of installed equipment and systems. Types and sizes shall be as specifically required for installed products.
- C. Tools shall be available and their use demonstrated during training sessions specified in Section 01 7500 - Starting, Adjusting, and Demonstrating.
- D. Prior to, or concurrent with Contractor's request for Substantial Completion, deliver maintenance tools to Owner's representative. Prepare inventory of tools provided and obtain receipt from Owner's representative.

1.7 EXTRA MATERIALS

- A. Provide spare parts and maintenance materials in quantities specified in individual sections.
- B. Extra materials shall be produced by the same manufacturer of and compatible with the installed products.
- C. Prior to or concurrent with submission of Notice of Substantial Completion deliver extra materials in unopened containers to Owner's representative at designated storage area at project site and place in location as directed. Obtain receipt from Owner's representative.
- D. During one year correction period:
 - 1. Extra materials may be used by Contractor to replace expendable and normally worn parts.

2. Extra materials used by Contractor for replacement of defective products shall be replaced at no additional cost to Owner.

1.8 KEYS

- A. Prior to or in conjunction with submission of Contractor's request for Substantial Completion, provide Owner with all keys for:
 1. Door hardware locks after re-keying in accordance with Section 08 7100 - Door Hardware.
 2. Access doors and panels.
 3. Electrical panel boards and other equipment.
- B. Provide a minimum of two keys for each lock.
- C. Clearly label each key as to function and location of lock.
- D. Obtain receipt from Owner's representative.
- E. Prior to, or in conjunction with Final Completion, return all keys lent out by Owner to Contractor for access to existing spaces, gates, etc. for the Work. Obtain receipt from Owner.

1.9 MISCELLANEOUS SECURITY-RELATED MATERIALS AND COMPONENTS

- A. Prior to or in conjunction with Final Completion and in accordance with Article 9.10.1 – General Conditions of the Contract, deliver to Owner and obtain receipt for:
 1. All miscellaneous security-related items loaned to Contractor during the progress of the job, including:
 - a.. Owner-furnished security badges and passes
 - b. Owner-furnished construction signs

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 01 7801 - EQUIPMENT INVENTORY AND ROOFING DATA COLLECTION

PART 1 - GENERAL**1.1 SUMMARY**

- A. Section includes requirements for completion and submittal of forms including an inventory listing and detailed data pertaining to any serial numbered components or equipment furnished and installed under the Contract, that may require maintenance or repair during the life cycle of the facility.
- B. Related documents and sections:
 - 1. Document 00 7200 - General Conditions,
 - a. Article 3.12: Contractor's responsibilities regarding submittals.
 - b. Article 9.10: Project closeout and use of CIMS.
 - 2. Section 01 3300 – Submittal Procedures: Submittal requirements.
 - 3. Section 01 7800 - Closeout Submittals: Submittal of project record drawings, operation and maintenance manuals, warranties, certifications of inspection, extra materials and other closeout submittals.

1.2 FORMS

- A. PSFA guidelines and Excel spreadsheet forms are available to the Contractor for equipment data collection necessary for importing into a computerized maintenance management system. The following documents for completion electronically by Contractor are available on the **PSFA website (“Maintenance Portal”)** at www.nmpsfa.org. :
 - 1. Equipment Data Collection Form and Guidelines.
 - 2. Roof Data Collection Form and Guidelines.

1.3 PROCEDURES

- A. The equipment data collection forms are to be filled out by the Contractor and submitted prior to, or in conjunction with Contractor’s request for Substantial Completion as required by Section 01 7700 and Section 01 7800.
- B. One electronic USB thumb drive containing completed forms shall be included in

each Operations & Maintenance manual.

- C. The equipment data collection forms shall also be utilized by the 3-Year Extended Service & Maintenance Contractor for the purpose of listing all equipment covered under that agreement as required by Section 01_9311.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 01 7810 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
- B. See all Divisions listed herein and contained contract requirements for specific requirements for Project Record Documents of products in those Sections.

1.3 SUBMITTALS

- A. Record Drawings: Submit two sets of marked-up Record Prints.
- B. Record Specifications: Submit two copies of Project's Specifications, including addenda and contract modifications.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
 - 1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - 2. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 - 3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.

4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include complete set, identify Drawings included.
 3. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

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

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders, Record Drawings, and Product Data where applicable.

2.4 MISCELLANEOUS RECORD SUBMITTALS

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

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

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

END OF SECTION

SECTION 01 7900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes: Training of Owner's designated personnel in operation and maintenance of equipment and systems.

B. Related sections:

1. Section 01 7800 - Closeout Submittals: Operation and maintenance manuals.

1.2 SUBMITTALS

A. Provide in accordance with Section 01 3300 - Submittal Procedures:

1. List of names, resumes, and qualifications of personnel conducting training sessions.
2. Preliminary schedule listing times, dates, and outline showing organization and proposed contents of training sessions for approval by Design Professional and Owner.
3. Copies of training manuals and other materials to be used in training sessions for approval by Design Professional and Owner.
4. Provide Owner additional copy of audio visual material on the same media used in training sessions.
5. Three (3) copies of training manuals for future use in training by Owner.
6. Submit report within 1 week after completion of training that sessions have been satisfactorily completed. Give times, dates, list of persons trained, and summary of instructions.

1.3 QUALITY ASSURANCE

A. Personnel conducting demonstration and training sessions shall be knowledgeable of installation, operation, sequence of operations, and maintenance of specific project equipment and systems. Where appropriate manufacturer's representatives shall conduct training.

PART 2- PRODUCTS

2.1 TRAINING MATERIALS

A. Training manuals: Loose leaf notebook format with agenda and objectives of each lesson.

1. Manuals shall describe function, operation, sequence of operations, and maintenance of various items of equipment and be suitable for personnel with high school education.
 2. Manuals shall be suitable for future training of Owner personnel by Owner staff.
 3. Manuals shall be a useful reference for staff maintaining facility.
- B. Visual aids: Provide charts, handouts, overhead projector slides, electronic presentations, and other visual aids required to make effective presentation and facilitate training.
1. Equipment needed for showing visual training aids shall be provided by Contractor.
 2. Visual aids shall be suitable for use by Owner's staff to train additional personnel in the future.

PART 3 - EXECUTION

2.1 SCHEDULING

- A. Schedule demonstration and training sessions after equipment and systems have been completely installed, startup completed, and adjustments made. Single demonstration and training session shall be conducted of all items prior to substantial completion. Schedule with Design Professional to accommodate Owner's representatives.

2.2 DEMONSTRATION AND TRAINING

- A. Provide demonstration and training session to emphasize operation, sequence of operations, use, and maintenance of installed items and systems:
1. Mechanical systems specified in Divisions 21, 22 and 23.
 2. Integrated Automated Controls specified in Division 25.
 3. Electrical systems specified in Division 26, 27 and 28.
 4. Other items and systems as designated by Design Professional or requested by Owner.
- B. Conduct at project site using actual installed equipment and systems.
- C. Owner shall be responsible for designating and notifying personnel to attend and ensuring attendance at scheduled sessions.
- D. Have copies of operation and maintenance manuals specified in Section 01 7800 - Closeout Submittals available. Use as training aids. Include training on each of written sequence of operations contained in the Operations & Maintenance Manual.

E. Owner shall have right to record or video tape demonstration and training sessions.

END OF SECTION

SECTION 024119 - SELECTIVE DEMOLITION

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:

1. Demolition and removal of selected portions of building or structure.
2. Demolition and removal of selected site elements.
3. Salvage of existing items to be reused or recycled.

B. Related Requirements:

1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
2. Section 015639 "Temporary Tree and Plant Protection" for temporary protection of existing trees and plants that are affected by selective demolition.
3. Section 017310 "Execution" for cutting and patching procedures.
4. Section 013516 "Alteration Project Procedures" for general protection and work procedures for alteration projects.
5. Section 230500 "Common Work Results for HVAC" for demolition of mechanical system.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.
- C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.
- E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

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 their 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.
 - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 INFORMATIONAL SUBMITTALS

Qualification Data: For refrigerant recovery technician.

- A. Qualification Data: For refrigerant recovery technician.
- B. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and for noise control. Indicate proposed locations and construction of barriers.
- C. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's, building manager's, and other tenants' 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 stairs.
 - 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- D. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.
- E. 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.
- F. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.6 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.

1.7 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.8 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.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 - 1. Before selective demolition, Owner will remove the following items:
 - a. Furniture and all other items. Coordinate with Owner to ensure that School remains operational.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. Hazardous materials will be removed by Owner before start of the Work. General Contractor to coordinate with the Owner before any abatement starts to ensure that it does not affect construction.
 - 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.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition 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 before proceeding. Existing warranties include the following:
 - 1. TPO Roofing, GAF Materials Corp. Everguard

- B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

1.10 COORDINATION

- A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Perform survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any 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 by use of measured drawings and preconstruction photographs or video.
 - 1. Comply with requirements specified in Section 013233 "Photographic Documentation."
 - 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.

3.2 PREPARATION

- A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them 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. 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.
 - 3. 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.
 - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
 - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.4 PROTECTION

- A. Temporary Protection: 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 specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 1. Strengthen or add new supports when required during progress of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.

3.5 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 2. 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.
 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. 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.
 5. Maintain fire watch during and for at least one hour after flame-cutting operations.
 6. Maintain adequate ventilation when using cutting torches.
 7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 10. 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 other adjacent occupied and used facilities.
- C. Removed and Salvaged Items:
 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.

D. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. 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 Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.
- B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.
- C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.
- D. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings.
- E. Roofing: Remove no more existing roofing than what can be covered in one day by new roofing and so that building interior remains watertight and weathertight. See Section 075423 "Thermoplastic Polyolefin (TPO) Roofing" for new roofing requirements.
1. Remove existing roof membrane, flashings, copings, and roof accessories.
 2. Remove existing roofing system down to substrate.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.
1. Do not allow demolished materials to accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

B. Burning: Do not burn demolished materials.

3.8 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 024119

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies cast-in place concrete, including exterior concrete paving, formwork, reinforcement, concrete materials, mix design, placement procedures, and finishes.
- B. Related Sections include the following:
 - 1. Section 03 3543 "Polished Concrete Finishes" for polished concrete floors.
 - 2. Section 31 2000 "Earthmoving" for engineered fill under slabs-on-grade.
 - 3. Section 32 1313 "Concrete Pavement" for concrete pavement and walks.
 - 4. Section 01 7419 "Construction Waste Management and Disposal."
 - 5. Section 01 8113 "Sustainable Design Requirements."

1.3 DEFINITIONS

- A. Cementitious Materials: cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume.

1.4 ACTION SUBMITTALS

- A. Product Data: for each type of product.
- B. Design Mixes: For each concrete mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
 - 1. Indicate amounts of mix water to be withheld for later addition at Project site.
- C. Steel Reinforcement Shop Drawings: Details of fabrication, bending, and placement, prepared according to ACI SP-66, "ACI Detailing Manual." Include material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement. Include special reinforcement required for openings through concrete structures.
- D. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:
 - 1. Cementitious materials and aggregates.
 - 2. Form materials and form-release agents.
 - 3. Steel reinforcement and reinforcement accessories.
 - 4. Admixtures.
 - 5. Curing materials.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Manufacturer Qualifications:
 - 1. A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
- C. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction.
- D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, each aggregate from one source, and each admixture from the same manufacturer.
- E. Codes and Standards: Comply with the following, unless more stringent provisions are indicated:
 - 1. ACI 301, "Specification for Structural Concrete
 - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
 - 3. ACI 318, "Building Code Requirements for Structural Concrete."
 - 4. Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice".

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle steel reinforcement to prevent bending and damage.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

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

- E. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of the exposed concrete surface.
 2. Furnish ties that, when removed, will leave holes not larger than 1 inch in diameter in concrete surface.
 3. Furnish ties with integral water-barrier plates to walls indicated to receive damp proofing or waterproofing.

F. Vapor Barrier:

1. Performance: ASTM E 1745, Class A, with a permeance of 0.01 perms or less after mandatory conditioning as per ASTM E 1745 Section 7.1 sub-paragraphs 7.1.2-5.
2. ACI Recommendation: The ACI 302 recommends the use of a vapor barrier (0.01 perms) as opposed to a vapor retarder (0.1 perms) whenever a low-permeance flooring or flooring with a low moisture requirement is used. The ACI 302 has defined moisture sensitive floor coverings as: sheet rubber, epoxy coatings, vinyl composite tile, sheet vinyl, carpet, athletic flooring, laminates, and hardwood. And, due to flooring manufacturers' use of low-VOC adhesives in response to the Clean Air Act of 1998, many floor coverings are moisture-sensitive. Concerns for mold, efflorescence, etc. often spur the upgrade to the barrier permeance level (0.01 perms) as well.
3. Sustainability: The permeance of 0.01 perms should be maintained for the building's lifetime, and thus any vapor barrier selected should maintain a permeance rating of 0.01 perms after having been subjected to the required conditioning tests built into the current standard for under-slab vapor barriers, ASTM E 1745. Specifically, these are ASTM E 1745 Section 7.1 sub-paragraphs 7.1.1-7.1.5.
4. Available Products: Subject to compliance with requirements, a product that may be incorporated into the work includes, but is not limited to:
 - a. "Stego Wrap 15-mil Vapor Barrier" by Stego Industries, LLC., or approved product conforming to the above performance and sustainability criteria.
5. Accessories: Seam tape and vapor-proofing mastic as recommended by vapor barrier manufacturer.
6. Execution: prepare compacted aggregate or engineered fill base per Earthwork requirements. place, protect, and repair vapor barrier sheets in accordance with ASTM E 1745 and manufacturer's written instruction.

2.2 STEEL REINFORCEMENT

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 60 percent.
- B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- C. Deformed-Steel Wire: ASTM A 1064.
- D. Deformed-Steel Welded Wire Fabric: ASTM A 1064, flat sheet.

2.3 REINFORCEMENT ACCESSORIES

- A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete, and as follows:
 1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected or CRSI Class 2 stainless-steel bar supports.

2.4 CONCRETE MATERIALS

- A. Regional Materials: Concrete shall be manufactured within 100 miles (160 km) of Project site from aggregates and cementitious materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles (160 km) of Project site.
- B. Cement: ASTM C 150, Type I/II.
- C. Fly Ash: ASTM C 618, Class F.
- D. Normal-Weight Aggregate: ASTM C 33, uniformly graded, and as follows:
 - 1. Class: Severe weathering region, but not less than 3M.
 - 2. 1" maximum aggregate size for slabs on grade.
 - 3. ½" maximum aggregate size for elevated, suspended slabs.
- E. Water: Potable and complying with ASTM C 1602.

2.5 ADMIXTURES

- A. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride.
- B. Air-Entraining Admixture: ASTM C 260.
- C. Water-Reducing Admixture: ASTM C 494, Type A.
- D. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.
- E. Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.
- F. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.
- G. Coloring Admixture: ASTM C 979, synthetic mineral-oxide pigments or colored water-reducing admixtures, free of carbon black; color stable, nonfading, and resistant to lime and other alkalis. Color: Match Architect's sample.

2.6 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap clothe made from jute or kenaf, weighing approximately 9-oz./sq. yd. dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Clear, Liquid Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.
 - 1. For integrally colored concrete, curing compound shall be approved by coloring admixture manufacturer.
 - 2. For concrete indicated to be sealed, curing compound shall be compatible with sealer.

- E. Concrete floor slab treatment: Spray-Lock SCP 327.

2.7 Water: Potable

2.8 RELATED MATERIALS

- A. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.
- B. Epoxy Joint Filler: Two-component, semirigid, 100 percent solids, epoxy resin with a Shore A hardness of 80 per ASTM D 2240.
- C. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- D. Reglets: Fabricate reglets of not less than 0.0217-inch-thick galvanized steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.
- E. Dovetail Anchor Slots: Hot-dip galvanized steel sheet, not less than 0.0336 inch thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

2.9 REPAIR MATERIALS

- A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
 - 1. Cement Binder: ASTM C 150, cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
 - 2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
 - 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.
 - 4. Compressive Strength: Not less than 4100 psi at 28 days when tested according to ASTM C 109/C 109M.
- B. Repair Topping: Traffic-bearing, cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch.
 - 1. Cement Binder: ASTM C 150, cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
 - 2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
 - 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
 - 4. Compressive Strength: Not less than 5700 psi at 28 days when tested according to ASTM C 109/C 109M.

2.10 CONCRETE MIXES

- A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mix or field test data bases, as follows:
 - 1. Proportion normal-weight concrete according to ACI 211.1 and ACI 301.
- B. Use a qualified independent testing agency for preparing and reporting proposed mix designs for the laboratory trial mix basis.

- C. Design mixes to provide concrete with the following properties:
1. Compressive Strength (28 Days): 4,000 psi for interior exposed slabs, exterior pavements and site walls; 4,000 psi for polished concrete slabs, 3,000 psi for all other concrete work.
 2. Slump:
 - a. Ramps and Sloping Surfaces: not more than 3 inches.
 - b. Building Floor Slabs: not more than 5 inches.
 - c. Reinforced Foundation Systems: not less than 1 inch and not more than 3 inches.
 - d. Concrete containing high-range water-reducing admixture (super-plasticizer): Not more than 8 inches after adding admixture to site-verified 2 – 3 inch slump concrete.
 - e. Other concrete: Not more than 4 inches.
 3. Calculated air dry unit weight for lightweight concrete not to exceed 115 lb/cubic feet as determined by ASTM C567. Weight of fresh concrete shall be within 3 pcf of the wet unit weight determined for the approved mix design. Mix design shall be based upon the recommendations of the lightweight aggregate producer.
- D. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant, as accepted by Architect. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Architect before using in Work.
- E. Cementitious Materials: For concrete exposed to deicers, limit percentage, by weight, of cementitious materials other than cement according to ACI 301 requirements.
- F. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than cement in concrete as follows:
1. Fly Ash: Minimum of 10 percent, maximum of 20 percent.
- G. Use air-entraining admixture in exterior exposed concrete flatwork, benches and other exterior concrete susceptible to moisture infiltration, unless otherwise indicated. Do not use air-entrainment in concrete walls 12 inches or less in thickness. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content as follows within a tolerance of plus 1 or minus 1.5 percent, unless otherwise indicated:
1. Air Content: 5.5 percent for 1-1/2-inch- nominal maximum aggregate size.
 2. Air Content: 6 percent for 1-inch-nominal maximum aggregate size.
 3. Air Content: 6 percent for 3/4-inch-nominal maximum aggregate size.
- H. Do not air entrain concrete at trowel-finished interior floors and suspended slabs. Do not allow entrapped air content to exceed 3 percent.
- I. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement for exterior flatwork and 0.30 percent for other concrete.
- J. Admixtures: Use admixtures according to manufacturer's written instructions.
1. Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) in concrete, as required, for placement and workability.
 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
4. Use corrosion-inhibiting admixture in concrete mixes where indicated.

2.11 FABRICATING REINFORCEMENT

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

2.12 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94 and ASTM C 1116, and furnish batch ticket information.
 1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads. Design and engineering of formwork and shoring is the Contractor's responsibility.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. In addition to ACI 303.1 limits on form-facing panel deflection, limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
 1. Class A, 1/8 inch for concrete surfaces exposed to view.
 2. Class C, 1/2 inch for other concrete surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical. Kerf wood inserts for forming keyways, reglets, recesses, and the like, for easy removal.
 1. Do not use rust-stained steel form-facing material. Ensure forms will produce a smooth, uniform finish.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

- H. Chamfer exterior corners and edges of permanently exposed concrete, unless otherwise noted.
- I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- L. Coat contact surfaces of forms with form-release agent before each use, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use Setting Drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 - 1. Install anchor bolts, accurately located, to elevations required.
 - 2. Install reglets to receive top edge of foundation sheet waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
 - 3. Install dovetail anchor slots in concrete structures as indicated.

3.3 REMOVING AND REUSING FORMS

- A. General: Formwork, for sides of beams, walls, columns, and similar parts of the Work, that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete provided concrete is hard enough to not be damaged by form-removal operations and provided curing and protection operations are maintained.
- B. Leave formwork, for beam soffits, joists, slabs, and other structural elements, that supports weight of concrete in place until concrete has achieved the following:
 - 1. At least 75 percent of 28-day design compressive strength.
 - 2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
- C. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- D. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials.

- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
 - 1. Shop- or field-weld reinforcement according to AWS D1.4, where indicated.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- E. Install welded wire fabric in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least two mesh spacings. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.5 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
- C. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
 - 1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.
 - 2. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface where joint sealants, are indicated.
 - 3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

3.6 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Do not add water to concrete during delivery, at Project site, or during placement, unless approved by Architect.
- C. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation.
- D. Deposit concrete in forms in horizontal layers no deeper than 24 inches and in a manner to avoid inclined construction joints. Place each layer while preceding layer is still plastic, to avoid cold joints.
 - 1. Consolidate placed concrete with mechanical vibrating equipment. Use equipment and procedures for consolidating concrete recommended by ACI 309R.
 - 2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the vibrator. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix constituents to segregate.
- E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 2. Maintain reinforcement in position on chairs during concrete placement.
 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
 4. Laser Screeding: Use Laser Screeding method for floor slabs on grade. Use Constant Thickness method for elevated composite concrete floor slabs (laser screeding not permitted for elevated slabs).
 5. Slope surfaces uniformly to drains where required.
 6. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, free of humps or hollows, before excess moisture or bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
- F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen sub-grade or on sub-grade containing frozen materials.
 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.
- G. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows, when hot-weather conditions exist:
1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
 3. Fog-spray forms, steel reinforcement, and sub-grade just before placing concrete. Keep sub-grade moisture uniform without standing water, soft spots, or dry areas.

3.7 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defective areas repaired and patched. Remove fins and other projections exceeding ACI 347R limits for class of surface specified.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Completely remove fins and other projections.
1. Apply to concrete surfaces exposed to public view or to be covered with a coating or covering material applied directly to concrete, such as waterproofing, dampproofing, veneer plaster, or painting.
 2. Do not apply rubbed finish to smooth-formed finish.
- C. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.
- D. Maintain uniformity of special finishes over construction joints, unless otherwise indicated.

3.8 FINISHING FLOORS AND SLABS

- A. General: Comply with recommendations in ACI 302.1R for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes.
 - 1. Apply scratch finish to surfaces indicated and to surfaces to receive concrete floor topping or mortar setting beds for stone tile, and other bonded cementitious floor finishes.
- C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraighening until surface is left with a uniform, smooth, granular texture.
 - 1. Apply float finish to surfaces indicated, to surfaces to receive trowel finish, and to floor and slab surfaces to be covered with fluid-applied or sheet waterproofing.
- D. Trowel Finish: After applying float finish, apply first trowel finish and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
 - 1. Apply a trowel finish to surfaces indicated and to floor and slab surfaces exposed to view or to be covered with resilient flooring, carpet, wood flooring, paint, or another thin film-finish coating system
 - 2. Finish surfaces to the following tolerances, measured within 24 hours according to ASTM E 1155/E 1155M for a randomly trafficked floor surface:
 - a. For slabs on grade, specified overall values of flatness, F(F) 50; and levelness, F(L) 30; with minimum local values of flatness, F(F) 35; and levelness, F(L) 20.
 - b. For elevated, suspended slabs, specified overall values of flatness, F(F) 35; with minimum local values of flatness, F(F) 23.
 - c. Refer to Section 03 5000 Polished Concrete Finishing for requirements at polished concrete floor areas.
- E. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.
 - 1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.9 MISCELLANEOUS CONCRETE ITEMS

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

- D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast-in inserts and accessories as shown on Drawings. Screed, tamp, and trowel-finish concrete surfaces.

3.10 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with recommendations in ACI 305.1 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing by one or a combination of the following methods:
 - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
 - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 - a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
 - b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
 - c. Cure concrete surfaces to receive floor coverings with a moisture-retaining cover.
 - 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period. **Do not use curing compound on concrete surfaces to receive floor coverings.**
- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
 - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.

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

3.11 LIQUID FLOOR TREATMENT APPLICATION

- A. Penetrating Liquid Floor Treatment: Spray-Lock SCP 327. Prepare, apply, and finish penetrating liquid floor treatment according to manufacturer's written instructions.

3.12 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
 1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension in solid concrete but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
 2. Repair defects on surfaces exposed to view by blending white cement and standard cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
 3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.

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

3.13 FIELD QUALITY CONTROL

- A. Testing Agency: The Owner shall engage and pay for a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports. The contractor shall schedule with the testing agency, in a timely manner, for when testing and inspections are to be performed.
- B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mix exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 75 cu. yd. or fraction thereof, but not less than one set for each 5000 square feet of slab surface area.
 - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mix, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 2. Slump: ASTM C 143; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.

3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
 4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
 5. Unit Weight: ASTM C 567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
 6. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of four standard 6x12 cylinder specimens, or five 4x8 cylinder specimens, for each composite sample.
 7. Field-cured specimens below may be required to verify adequacy of curing and protection of concrete or to verify strength for removal of shoring and reshoring in multistory construction.
 8. Coordinate number of compression test specimens in subparagraph and associated subparagraph above with number of compressive-strength tests in subparagraph and associated subparagraphs below.
 9. Compressive-Strength Tests: ASTM C 39; test one laboratory-cured specimen at 7 days, two at 28 days for 6x12 standard cylinders or three at 28 days for 4x8 cylinders, and one specimen retained in reserve for later testing if required.
- C. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
- D. Strength of each concrete mix will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
- E. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-and 28-day tests.
- F. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
- G. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42 or by other methods as directed by Architect.

END OF SECTION 033000

SECTION 04 22 00

REINFORCED UNIT MASONRY

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 unit masonry assemblies consisting of the following:

- 1. Concrete masonry units.
- 2. Mortar and grout.
- 3. Reinforcing steel.
- 4. Masonry joint reinforcement.
- 5. Ties and anchors.
- 6. Miscellaneous masonry accessories.

- B. Related Sections

- 1. Section 01 73 20 – Waste Management
- 2. Section 04 21 14 - Brick Veneer
- 3. Section 04 22 24 - Glazed Masonry

1.3 DEFINITIONS

- A. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.4 PERFORMANCE REQUIREMENTS

- A. Provide unit masonry that develops the required net-area compressive strengths (f_m) at 28 days. Determine compressive strength of masonry from net-area compressive strengths of masonry units and mortar types according to Table 21-D of the Uniform Building Code.

1.5 SUBMITTALS

- A. Product Data: For each different masonry unit, accessory, and other manufactured product specified.
- B. Shop Drawings: Show fabrication and installation details for the following:

1. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement."
- C. Samples for Verification: For the following:
 1. Full-size units for each different exposed masonry unit required, showing the full range of exposed colors, textures, and dimensions to be expected in the completed construction.
 2. Colored mortar Samples for each color required, showing the full range of colors expected in the finished construction. Make samples using the same sand and mortar ingredients to be used on Project.
 3. Weep holes/vents in color to match mortar color.
 4. Accessories embedded in the masonry.
- D. Qualification Data: For firms and persons specified in "Quality Assurance" Article.
- E. Material Test Reports: From a qualified testing agency indicating and interpreting test results of the following for compliance with requirements indicated:
 1. Each type of masonry unit required.
 - a. Include test results, measurements, and calculations establishing net-area compressive strength of masonry units.
 2. Mortar complying with property requirements of ASTM C 270.
 3. Grout mixes complying with compressive strength requirements of ASTM C 476. Include description of type and proportions of grout ingredients.
- F. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:
 1. Each material and grade indicated for reinforcing bars.
 2. Each type and size of joint reinforcement.
 3. Each type and size of anchor, tie, and metal accessory.
- G. Cold-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with cold-weather requirements.

1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1093 to conduct the testing indicated, as documented according to ASTM E 548.
- B. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, through one source from a single manufacturer for each product required.
- C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source or producer for each aggregate.

- D. Fire-Resistance Ratings: Where indicated, provide materials and construction identical to those of assemblies with fire-resistance ratings determined per ASTM E 119 by a testing and inspecting agency, by equivalent concrete masonry thickness, or by another means, as acceptable to authorities having jurisdiction.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
 - 1. Protect Type I concrete masonry units from moisture absorption so that, at the time of installation, the moisture content is not more than the maximum allowed at the time of delivery.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Deliver preblended, dry mortar mix in moisture-resistant containers designed for lifting and emptying into dispensing silo. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in a metal dispensing silo with weatherproof cover.
- E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.8 PROJECT CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 - 1. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.
 - 2. Where one wythe of multiwythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe and hold cover in place.
- B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls or columns, and not before masonry assembly has sufficient strength to support such loading.
- C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
 - 1. Protect base of walls from rain-splashed mud and from mortar splatter by coverings spread on ground and over wall surface.
 - 2. Protect sills, ledges, and projections from mortar droppings.

3. Protect surfaces of window and door-frames, as well as similar products with painted and integral finishes, from mortar droppings.
 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in Section 2104.3 of the Uniform Building Code.
1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and above and will remain so until masonry has dried, but not less than 7 days after completing cleaning.
- E. Hot-Weather Requirements: Protect unit masonry work when temperature and humidity conditions produce excessive evaporation of water from mortar and grout. Provide artificial shade and wind breaks and use cooled materials as required.
1. When ambient temperature exceeds 100 deg F, or 90 deg F with a wind velocity greater than 8 mph, do not spread mortar beds more than 48 inches ahead of masonry. Set masonry units within one minute of spreading mortar.

PART 2 - PRODUCTS

2.1 CONCRETE MASONRY UNITS

- A. General: Provide shapes indicated and as follows:
1. Provide special shapes for lintels, corners, jambs, sash, control joints, headers, bonding, and other special conditions.
 2. Provide square-edged units for outside corners, unless indicated as bullnose.
- B. Concrete Masonry Units: ASTM C 90 and as follows:
1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1900 psi.
 2. Weight Classification: Medium weight, unless otherwise indicated.
 3. Provide Type I, moisture-controlled units.
 4. Size (Width): Manufactured to the following dimensions:
 - a. 4 inches nominal; 3-5/8 inches actual.
 - b. 6 inches nominal; 5-5/8 inches actual.
 - c. 8 inches nominal; 7-5/8 inches actual.
 - d. 10 inches nominal; 9-5/8 inches actual.
 - e. 12 inches nominal; 11-5/8 inches actual.
 5. Exposed Faces: Manufacturer's standard color and texture, unless otherwise indicated.
 - a. Where units are to receive a direct application of plaster, provide textured-face units made with gap-graded aggregates.
 - b. Where units are to be left exposed, provide integral color burnished block per Architectural drawings.

2.2 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Portland Cement-Lime Mix: Packaged blend of portland cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM C 207.
- D. Mortar Cement: ASTM C 1329.
- E. Masonry Cement: ASTM C 91.
 - 1. For pigmented mortar, use a colored cement formulation as required to produce the color indicated or, if not indicated, as selected from manufacturer's standard formulations.
 - a. Pigments shall not exceed 10 percent of portland cement by weight for mineral oxides nor 2 percent for carbon black.
 - b. Pigments shall not exceed 5 percent of mortar cement or masonry cement by weight for mineral oxides nor 1 percent for carbon black.
 - 2. For colored-aggregate mortar, use natural color or white cement as necessary to produce required mortar color.
- F. Aggregate for Mortar: ASTM C 144; except for joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
 - 1. White-Mortar Aggregates: Natural white sand or ground white stone.
 - 2. Colored-Mortar Aggregates: Natural-colored sand or ground marble, granite, or other sound stone; of color necessary to produce required mortar color.
- G. Aggregate for Grout: ASTM C 404.
- H. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes. Use only pigments with a record of satisfactory performance in masonry mortar.
- I. Water: Potable.

2.3 REINFORCING STEEL

- A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M; ASTM A 616/A 616M, including Supplement 1; or ASTM A 617/A 617M, Grade 60.

2.4 MASONRY JOINT REINFORCEMENT

- A. General: ASTM A 951 and as follows:
 - 1. Hot-dip galvanized, carbon-steel wire for both interior and exterior walls.

2. Wire Size for Side Rods: W1.7 or 0.148-inch diameter.
 3. Wire Size for Cross Rods: W1.7 or 0.148-inch diameter.
 4. Provide in lengths of not less than 10 feet, with prefabricated corner and tee units where indicated.
- B. For single-wythe masonry, provide either ladder or truss type with single pair of side rods and cross rods spaced not more than 16 inches o.c.

2.5 TIES AND ANCHORS, GENERAL

- A. General: Provide ties and anchors, specified in subsequent articles, made from materials that comply with this Article, unless otherwise indicated.
- B. Hot-Dip Galvanized Carbon-Steel Wire: ASTM A 82; with ASTM A 153, class B-2 coating.
- C. Galvanized Steel Sheet: ASTM A 653/A 653M, G60 (Z180), commercial-quality, steel sheet zinc coated by hot-dip process on continuous lines before fabrication.
- D. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

2.6 ANCHORS FOR CONNECTING TO CONCRETE

- A. General: Provide two-piece assemblies that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.
1. Anchor Section: Dovetail anchor section formed from 0.0528-inch-thick, steel sheet, galvanized after fabrication.
 2. Tie Section: Triangular-shaped wire tie, sized to extend within 1 inch of masonry face, made from 0.25-inch-diameter, hot-dip galvanized steel wire.
 3. Organic-Polymer-Coated, Steel Drill Screws:
 - a. Dril-Flex; Elco Industries, Inc.
 - b. Traxx; ITW-Buildex.

2.7 MISCELLANEOUS ANCHORS

- A. Unit Type Inserts in Concrete: Cast-iron or malleable-iron inserts of type and size indicated.
- B. Dovetail Slots: Furnish dovetail slots with filler strips, of slot size indicated, fabricated from 0.0336-inch, galvanized steel sheet.
- C. Anchor Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers; hot-dip galvanized to comply with ASTM A 153, Class C; of diameter and length indicated and in the following configurations:
1. Nonheaded bolts, bent in manner indicated.
- D. Postinstalled Anchors: Anchors as described below, with capability to sustain, without failure, load imposed within factors of safety indicated, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.

1. Type: Chemical anchors.
2. Type: Expansion anchors.
3. Corrosion Protection: Carbon-steel components zinc plated to comply with ASTM B 633, Class Fe/Zn 5 (5 microns) for Class SC 1 service condition (mild).
4. For Postinstalled Anchors in Concrete: Capability to sustain, without failure, a load equal to four times the loads imposed.
5. For Postinstalled Anchors in Grouted Masonry Units: Capability to sustain, without failure, a load equal to six times the loads imposed.

2.8 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene.
- B. Preformed Control-Joint Gaskets: Material as indicated below, designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.
 1. Styrene-Butadiene-Rubber Compound: ASTM D 2000, Designation M2AA-805.
- C. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).
- D. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells with loops for holding reinforcing bars in center of cells. Units are formed from 0.142-inch steel wire, hot-dip galvanized after fabrication.
 1. Provide units with either two loops or four loops as needed for number of bars indicated.
- E. Products: Subject to compliance with requirements, provide one of the following:
 1. Reinforcing Bar Positioners:
 - a. D/A 811; Dur-O-Wal, Inc.
 - b. D/A 816; Dur-O-Wal, Inc.
 - c. No. 376 Rebar Positioner; Heckman Building Products, Inc.
 - d. #RB Rebar Positioner; Hohmann & Barnard, Inc.
 - e. #RB-Twin Rebar Positioner; Hohmann & Barnard, Inc.
 - f. Double O-Ring Rebar Positioner; Masonry Reinforcing Corporation of America.
 - g. O-Ring Rebar Positioner; Masonry Reinforcing Corporation of America.

2.9 MASONRY CLEANERS

- A. Job-Mixed Detergent Solution: Solution of 1/2-cup dry measure tetrasodium polyphosphate and 1/2-cup dry measure laundry detergent dissolved in 1 gal. of water.

2.10 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.
- B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in the form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.
- C. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification.
- D. Pigmented Mortar: Select and proportion pigments with other ingredients to produce color required. Limit pigments to the following percentages of cement content by weight:
 1. For mineral-oxide pigments and portland cement-lime mortar, not more than 10 percent.
 2. For carbon-black pigment and portland cement-lime mortar, not more than 2 percent.
- E. Colored-Aggregate Mortar: Produce required mortar color by using colored aggregates combined with selected cementitious materials.
 1. Mix to match Architect's sample.
- F. Grout for Unit Masonry: Comply with ASTM C 476 .
 1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with UBC Table 21-C for dimensions of grout spaces and pour height.
 2. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
 1. Verify that foundations are within tolerances specified.
 2. Verify that reinforcing dowels are properly placed.
 3. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. Before installation, examine rough-in and built-in construction to verify actual locations of piping connections.

3.2 INSTALLATION, GENERAL

- A. Thickness: Build cavity and composite walls and other masonry construction to the full thickness shown. Build single-wythe walls to the actual widths of masonry units, using units of widths indicated.
- B. Build chases and recesses to accommodate items specified in this Section and in other Sections of the Specifications.
- C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to the opening.

- D. Cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide a continuous pattern and to fit adjoining construction. Where possible, use full-size units without cutting. Allow units cut with water-cooled saws to dry before placing, unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.
 - 1. Mix units from several pallets or cubes as they are placed.
- F. Matching Existing Masonry: Match coursing, bonding, color, and texture of existing masonry.

3.3 CONSTRUCTION TOLERANCES

- A. Comply with tolerances in ACI 530.1/ASCE 6/TMS 602 and the following:
- B. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/4 inch in 20 feet, nor 1/2 inch maximum.
- C. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, nor 1/2 inch maximum.
- D. For conspicuous horizontal lines, such as exposed lintels, sills, parapets, and reveals, do not vary from level by more than 1/4 inch in 20 feet, nor 1/2 inch maximum.
- E. For exposed bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch. Do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
- F. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch. Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch.

3.4 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Exposed Masonry: Lay exposed masonry in the following bond pattern; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
 - 1. As indicated on Drawings.
- C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2 inches. Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
- D. Stopping and Resuming Work: In each course, rack back one-half-unit length for one-half running bond or one-third-unit length for one-third running bond; do not tooth. Clean exposed

surfaces of set masonry, wet clay masonry units lightly if required, and remove loose masonry units and mortar before laying fresh masonry.

- E. Built-in Work: As construction progresses, build in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around built-in items.
- F. Fill space between hollow-metal frames and masonry solidly with mortar, unless otherwise indicated.
- G. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath in the joint below and rod mortar or grout into core.
- H. Fill cores in hollow concrete masonry units with grout 24 inches under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.
- I. Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above, unless otherwise indicated.
 - 1. Install compressible filler in joint between top of partition and underside of structure above.
 - 2. Wedge non-load-bearing partitions against structure above with small pieces of tile, slate, or metal. Fill joint with mortar after dead-load deflection of structure above approaches final position.
 - 3. At fire-rated partitions, install fire-stopping in joint between top of partition and underside of structure above to comply with Division 7 Section "Fire-stopping."
- J. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than the joint thickness, unless otherwise indicated.
- K. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint), unless otherwise indicated.

3.5 MORTAR BEDDING AND JOINTING

- A. Lay hollow masonry units as follows:
 - 1. With full mortar coverage on horizontal and vertical face shells.
 - 2. Bed webs in mortar in starting course on footings and in all courses of piers, columns, and pilasters, and where adjacent to cells or cavities to be filled with grout.
 - 3. For starting course on footings where cells are not grouted, spread out full mortar bed, including areas under cells.

3.6 MASONRY JOINT REINFORCEMENT

- A. General: Provide continuous masonry joint reinforcement as indicated. Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.
 - 1. Space reinforcement not more than 16 inches o.c.
- B. Cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

- C. Provide continuity at corners and wall intersections by using prefabricated "L" and "T" sections. Cut and bend reinforcing units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.7 CONTROL AND EXPANSION JOINTS

- A. General: Install control and expansion joints in unit masonry where indicated. Build-in related items as masonry progresses. Do not form a continuous span through movement joints unless provisions are made to prevent in-plane restraint of wall or partition movement.
- B. Form control joints in concrete masonry as follows:
 - 1. Fit bond-breaker strips into hollow contour in ends of concrete masonry units on one side of control joint. Fill resultant core with grout and rake joints in exposed faces.
 - 2. Install preformed control-joint gaskets designed to fit standard sash block.
 - 3. Install interlocking units designed for control joints. Install bond-breaker strips at joint. Keep head joints free and clear of mortar or rake joint.
 - 4. Install temporary foam-plastic filler in head joints and remove filler when unit masonry is complete.
- C. Build in horizontal, pressure-relieving joints where indicated; construct joints by either leaving an air space or inserting a compressible filler of width required for installing sealant and backer rod specified in Division 7 Section "Joint Sealants."
 - 1. Locate horizontal, pressure-relieving joints beneath shelf angles supporting masonry veneer and attached to structure behind masonry veneer.

3.8 LINTELS

- A. Install steel lintels where indicated.
- B. Provide masonry lintels where shown and where openings of more than 12 inches for brick-size units and 24 inches for block-size units are shown without structural steel or other supporting lintels.
 - 1. Provide built-in-place masonry lintels. Use specially formed bond beam units with reinforcing bars placed as indicated and filled with coarse grout. Temporarily support built-in-place lintels until cured.

3.9 REINFORCED UNIT MASONRY INSTALLATION

- A. Temporary Formwork and Shores: Construct formwork and shores to support reinforced masonry elements during construction.
 - 1. Construct formwork to conform to shape, line, and dimensions shown. Make it sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
 - 2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.

- B. Placing Reinforcement: Comply with requirements of Section 2104.5 of the Uniform Building Code.
- C. Grouting: Do not place grout until entire height of masonry to be grouted has attained sufficient strength to resist grout pressure.
 - 1. Comply with requirements of Section 2104.6 of the Uniform Building Code for cleanouts and for grout placement, including minimum grout space and maximum pour height.

3.10 FIELD QUALITY CONTROL

- A. Contractor shall engage a qualified independent testing agency to perform field quality control testing indicated below.
- B. Testing Frequency: Tests and Evaluations listed in this Article will be performed during construction for each 5000 sq. ft. of wall area or portion thereof.
- C. Mortar properties will be tested per ASTM C 780.
- D. Grout will be sampled and tested for compressive strength per ASTM C 1019.
- E. Concrete Masonry Unit Tests: For each type of concrete masonry unit indicated, units will be tested according to ASTM C 140.

3.11 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application.
- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
 - 3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.
 - 4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing the surfaces thoroughly with clear water.
 - 5. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2 applicable to type of stain on exposed surfaces.

3.12 MASONRY WASTE DISPOSAL

- A. Recycling: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.
- B. Disposal as Fill Material: Dispose of clean masonry waste, including broken masonry units, waste mortar, and excess or soil-contaminated sand, by crushing and mixing with fill material as fill is placed.
 - 1. Crush masonry waste to less than 4 inches in each dimension.
 - 2. Mix masonry waste with at least two parts of specified fill material for each part of masonry waste. Fill material is specified in Division 2 Section "Earthwork."
 - 3. Do not dispose of masonry waste as fill within 18 inches of finished grade.
- C. Excess Masonry Waste: Remove excess, clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property.

3.13 WASTE MANAGEMENT

- A. Separate and recycle waste materials in accordance with Waste Management Plan.
- B. Collect wood pallets and place in designated area for recycling.
- C. Separate masonry waste and place in designated area for use as structural fill, in landscaping or on pathways as appropriate.
- D. Show all materials diverted from landfill on Waste Management Report.

END OF SECTION

SECTION 051200 - STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:

- 1. Structural steel.
- 2. Grout.

- B. Related Sections include the following:

- 1. Section 053100 "Steel Decking".
- 2. Section 055000 "Metal Fabrications".

1.3 DEFINITIONS

- A. Structural Steel: Elements of structural-steel frame, as classified by AISC303-05 "Code of Standard Practice for Steel Buildings and Bridges," that support design loads.
- B. Architecturally Exposed Structural Steel (AESS): Structural steel designated as architecturally exposed structural steel in the Contract Documents. Refer to Part 2.8 of this Section for requirements specific to AESS.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Sustainable Design Submittals:
 - 1. Product data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
- C. Shop Drawings: Show fabrication of structural-steel components.
 - 1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
 - 2. Include embedment drawings.
 - 3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld.
 - 4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pre-tensioned and slip-critical high-strength bolted connections.
- D. Welding certificates.
- E. Qualification Data: For Installer and fabricator.

- F. Mill Test Reports: Signed by manufacturers certifying that the following products comply with requirements:
1. Structural steel including chemical and physical properties.
 2. Bolts, nuts, and washers including mechanical properties and chemical analysis.
 3. Direct-tension indicators.
 4. Tension-control, high-strength bolt-nut-washer assemblies.
 5. Shear stud connectors.
 6. Shop primers.
 7. Non-shrink grout.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who has completed structural steel work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- B. Fabricator Qualifications: Engage a qualified fabricator experienced in fabricating structural steel similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to fabricate structural steel without delaying the work.
- C. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code--Steel."
- D. Comply with applicable provisions of the following specifications and documents:
1. AISC 303-05 "Code of Standard Practice for Steel Buildings and Bridges" for fabrication and erection tolerances.
 2. AISC 360-05 "Specification for Structural Steel Buildings."
 3. RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from erosion and deterioration.
1. Store fasteners in a protected place. Clean and re-lubricate bolts and nuts that become dry or rusty before use.
 2. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

1.7 COORDINATION

- A. Furnish anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

PART 2 - PRODUCTS

2.1 STRUCTURAL-STEEL MATERIALS

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of pre-consumer recycled content not less than 50 percent

- B. W-Shapes: ASTM A 992/A 992M.
- C. Channels, Angles, M, S Shapes: ASTM A 36/A 36M.
- D. Plate and Bar: ASTM A 36/A 36M.
- E. Cold-Formed Hollow Structural Sections: ASTM A 500, Grade B, structural tubing.
- F. Steel Pipe: ASTM A 53/A 53M, Type E or S, Grade B.
 - 1. Weight Class: As indicated.
 - 2. Finish: Black.
- G. Welding Electrodes: Comply with AWS requirements.

2.2 BOLTS, CONNECTORS, AND ANCHORS

- A. High-Strength Bolts, Nuts, and Washers: ASTM A 325, Type 1, heavy hex steel structural bolts; ASTM A 563 heavy hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers.
 - 1. Finish: Plain.
 - 2. Direct-Tension Indicators: ASTM F 959, Type 325 compressible-washer type.
 - a. Finish: Plain.
- B. Tension-Control, High-Strength Bolt-Nut-Washer Assemblies: ASTM F 1852, Type 1, heavy hex or round head steel structural bolts with splined ends; ASTM A 563 heavy hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers.
 - 1. Finish: Plain.
- C. Shear Connectors: ASTM A 108, Grades 1015 through 1020, headed-stud type, cold-finished carbon steel: AWS D1.1, Type B.
- D. Un-headed Anchor Rods: ASTM A 307, Grade A.
 - 1. Configuration: Hooked.
 - 2. Nuts: ASTM A 563 heavy hex carbon steel.
 - 3. Plate Washers: ASTM A 36/A 36M carbon steel.
 - 4. Washers: ASTM F 436 hardened carbon steel.
 - 5. Finish: Plain.
- E. Headed Anchor Rods: ASTM A 307, Grade A, straight.
 - 1. Nuts: ASTM A 563 heavy hex carbon steel.
 - 2. Plate Washers: ASTM A 36/A 36M carbon steel.
 - 3. Washers: ASTM F 436 hardened carbon steel.
 - 4. Finish: Plain.
- F. Threaded Rods: ASTM A 36/A 36M
 - 1. Nuts: ASTM A 563 heavy hex carbon steel.
 - 2. Washers: ASTM F 436 hardened carbon steel.
 - 3. Finish: Plain.

2.3 PRIMER

- A. Primer: Fabricator's standard lead- and chromate-free, non-asphaltic, rust-inhibiting primer.
- B. Galvanizing Repair Paint: ASTM A 780.

2.4 GROUT

- A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, non-corrosive, non-staining, mixed with water to consistency suitable for application and a 30-minute working time.

2.5 FABRICATION

- A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and AISC's "Specification for Structural Steel Buildings."
 - 1. Camber structural-steel members where indicated.
 - 2. Identify high-strength structural steel according to ASTM A 6/ A 6M and maintain markings until structural steel has been erected.
 - 3. Mark and match-mark materials for field assembly.
 - 4. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.
- B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.
 - 1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1.
- C. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.
- D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.
- E. Cleaning: Clean and prepare steel surfaces that are to remain unpainted according to SSPC-SP 1, "Solvent Cleaning".
- F. Holes: Provide holes required for securing other work to structural steel and for passage of other work through steel framing members.
 - 1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.
 - 2. Base-Plate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.
 - 3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

2.6 SHOP CONNECTIONS

- A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
- B. Weld Connections: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work.
 - 1. Remove backing bars or runoff tabs, back gouge, and grind steel smooth.
 - 2. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for mill material.

2.7 ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS)

- A. AESS shall in addition to conforming with requirements pertaining to Structural Steel, conform with the following additional requirements.
- B. Fabrication: Comply with fabrication requirements, including tolerance limits except as modified below, of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for structural steel identified as AESS.
1. Fabricate with exposed surfaces smooth, square, and free of surface blemishes including pitting, rust, scale, seam marks, roller marks, rolled trade names, and roughness.
 2. Remove blemishes by filling or grinding or by welding and grinding, before cleaning, treating, and shop priming. Grind all edges of sheared, punched or flame-cut steel to match approved mock-up.
 3. Fabricate steel to one half the normal tolerance as specified in the *Code of Standard Practice* Section 10.
 4. Grind welds of AESS smooth. Grind or fill exposed fillet welds to smooth profile. Grind butt welds flush. For groove welds, the weld shall be made flush to the surfaces each side and be within $+1/16''$, $-0''$ of plate thickness.
 5. Weld Show-Through: At locations where welding on the far side of an exposed connection occurs, grind distortion and marking of the steel to a smooth profile with adjacent material.
 6. Coping and Blocking: Maintain a uniform gap of $1/8'' \pm 1/32''$ at all copes and blocks.
 7. Joint gap tolerance: Maintain a uniform gap of $1/8'' \pm 1/32''$
 8. Curved Members: members to be rolled to a final curved shape shall be fully shaped in the shop and tied during shipping to prevent stress relieving. Distortion of the web or stem, and outstanding flanges or angle legs shall be visibly acceptable to the architect from a distance of 20 feet under ant lighting condition determined by the Architect. Tolerances for the vertical and horizontal walls of rectangular HSS members after rolling shall be the specified dimension $\pm 1/2''$.
 9. Built-up sections: Assemble and weld built-up sections by methods that will maintain alignment of members without warp exceeding tolerance of this section.
- C. Erection:
1. Erection tolerances shall meet the requirements of Chapter 10 of the AISC *Code of Standard Practice*.
 2. Comply with weld requirements specified above for fabrication.
 3. All bolt heads in a given connection shall be oriented to one side. Orientation shall be consistent among multiple exposed connections.
 4. Removal of field connection aids: Run-out tabs, erection bolts and other steel members added to connections to allow for alignment, fit-up and welding in the field shall be removed from the structure. Field groove welds shall be selected to eliminate the need for backing bars or to permit their removal after welding. Welds at run-out tabs shall be removed to match adjacent surfaces and ground smooth. Holes for erection bolts shall be plug welded and ground smooth.
 5. Splice members only where indicated.
 6. Obtain permission for any torch cutting or field fabrication from the Architect. Finish sections thermally cut during erection to a surface appearance consistent with the requirements of this sub-section.
 7. Do not enlarge holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts. Replace connection plates that are misaligned where holes cannot be aligned with acceptable final appearance.
 8. Obtain Architect's approval for appearance of welds in repaired or field modified work.
- D. Field Quality Control:
1. AESS acceptance: The Architect will observe the AESS steel in place and determine acceptability based on conformance with specified requirements. The Testing Agency shall have no responsibility for enforcing AESS requirements.

2.8 SHOP PRIMING

- A. Shop prime steel surfaces except the following:
1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
 2. Surfaces to be field welded.
 3. Surfaces to be high-strength bolted with slip-critical connections.
 4. Surfaces to receive sprayed fire-resistive materials.
 5. Galvanized surfaces.
 6. Surfaces of Steel located within the building envelope.
- B. Surface Preparation: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:
1. SSPC-SP 2, "Hand Tool Cleaning."
- C. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a dry film thickness of not less than 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.
1. Stripe paint corners, crevices, bolts, welds, and sharp edges.
 2. Apply two coats of shop paint to inaccessible surfaces after assembly or erection. Change color of second coat to distinguish it from first.

2.9 GALVANIZING

- A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123/ A 123M.
1. Fill vent holes and grind smooth after galvanizing.
 2. Galvanize lintels and shelf angles attached to structural-steel frame and located in exterior walls.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments, with steel erector present, for compliance with requirements.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place, unless otherwise indicated.

3.3 ERECTION

- A. Set structural steel accurately in locations and to elevations indicated and according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and AISC's "Specification for Structural Steel Buildings."
- B. Base and Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting base and bearing plates. Clean bottom surface of base and bearing plates.
 - 1. Set base and bearing plates for structural members on wedges, shims, or setting nuts as required.
 - 2. Weld plate washers to top of base plate.
 - 3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of base or bearing plate before packing with grout.
 - 4. Promptly pack grout solidly between bearing surfaces and base or bearing plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.
- C. Maintain erection tolerances of structural steel and architecturally exposed structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."
- D. Align and adjust various members forming part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
 - 1. Level and plumb individual members of structure.
 - 2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.
- E. Splice members only where indicated.
- F. Remove erection bolts on welded, architecturally exposed structural steel; fill holes with plug welds; and grind smooth at exposed surfaces.
- G. Do not use thermal cutting during erection unless approved by Architect. Finish thermally cut sections within smoothness limits in AWS D1.1.
- H. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

3.4 FIELD CONNECTIONS

- A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
- B. Weld Connections: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work.
 - 1. Comply with AISC's "Code of Standard Practice for Steel Buildings and Bridges" and "Specification for Structural Steel Buildings" for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.
 - 2. Remove backing bars or runoff tabs, back gouge, and grind steel smooth.
 - 3. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for mill material.

3.5 FIELD QUALITY CONTROL

- A. Testing Agency: The Owner shall engage and pay for a qualified independent testing and inspecting agency to perform field tests and inspections, and prepare test reports. The contractor shall pay for shop tests and special inspections that are required in the event that the fabricator is not an AISC-certified fabricator. Both shop- and field- tests and inspections shall be performed by the same independent agency. The contractor shall schedule with the testing agency, in a timely manner, when tests and inspections are required to be performed.
- B. Bolted Connections: Field-bolted connections will be inspected according to RCSC's "Specification for Structural Joints Using ASTM A325 or A490 Bolts."
- C. Welded Connections: Field welds will be inspected according to AWS D1.1.
- D. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

3.6 REPAIRS AND PROTECTION

- A. Repair damaged galvanized coatings on galvanized items with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
- B. Touchup Painting: After installation, promptly clean, prepare, and prime or re-prime field connections, rust spots, and abraded surfaces of prime-painted joists and accessories, bearing plates, and abutting structural steel.
 - 1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.
 - 2. Apply a compatible primer of same type as shop primer used on adjacent surfaces.
- C. Touchup Painting: Cleaning and touchup painting are specified in Division 9 painting Sections.

END OF SECTION 051200

SECTION 052100 - STEEL JOIST FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Open-web K-series and LH-series steel joists.
 - 2. KCS-type, open-web K-series steel joists.
 - 3. Joist accessories.
- B. Related Sections include the following:
 - 1. Section 03 3000 "Cast-in-Place Concrete".
 - 2. Section 05 5000 "Metal Fabrications".
 - 3. Section 01 3515 "LEED Certification Procedures".
 - 4. Section 01 3516 "LEED Submittal Forms".
 - 5. Section 01 7419 "Construction Waste Management and Disposal."
 - 6. Section 01 8113 "Sustainable Design Requirements."

1.3 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide special joists, joist seats, extended ends and connections capable of withstanding design loads for spans, geometries and conditions indicated.

1.4 ACTION SUBMITTALS

- A. Product Data: for each type of joist, accessory, and product.
- B. Sustainable Design Submittals:
 - 1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
- C. Shop Drawings:
 - 1. Include layout, designation, number, type, location, and spacing of joists.
 - 2. Include joining and anchorage details, bracing, bridging, accessories; splice and connection locations and details; and attachments to other construction.
- D. Material certificates signed by joist manufacturer certifying that joists comply with SJI'S "Specifications".

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A firm experienced in manufacturing joists similar to those indicated for this Project and with a record of successful in-service performance.
 - 1. Manufacturer must be certified by SJI to manufacture joists complying with SJI standard specifications and load tables.
 - 2. Assumes responsibility for engineering special joists to comply with performance requirements. This responsibility includes preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.
 - 3. Professional Engineer Qualifications: A professional engineer who is legally authorized to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of joists that are similar to those indicated for this Project in material, design, and extent.
- B. SJI Specifications: Comply with SJI's "Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders" (hereafter, "Specifications"), applicable to types of joists indicated.
- C. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code--Steel"; and AWS D1.3 "Structural Welding Code--Sheet Steel."

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle joists as recommended in SJI's "Specifications."
- B. Protect joists from corrosion, deformation, and other damage during delivery, storage, and handling.

1.7 SEQUENCING

- A. Deliver steel bearing plates and other devices to be built into concrete and masonry construction.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one half of preconsumer recycled content not less than 50 percent.

2.2 MATERIALS

- A. Steel: Comply with SJI's "Specifications" for chord and web members.
- B. Steel Bearing Plates: ASTM A 36/A 36M.
- C. Carbon-Steel Bolts and Threaded Fasteners: ASTM A 307, Grade A, carbon-steel, hex-head bolts and threaded fasteners; carbon-steel nuts; and flat, unhardened steel washers.
 - 1. Finish: Plain, uncoated.

- D. High-Strength Bolts and Nuts: ASTM A 325, Type 1, heavy hex steel structural bolts, heavy hex carbon-steel nuts, and hardened carbon-steel washers.
 - 1. Finish: Plain, uncoated.
- E. Welding Electrodes: Comply with AWS standards.
- F. Galvanizing Repair Paint: ASTM A 780.

2.3 PRIMERS

- A. Primer: SSPC-Paint 15, Type I, red oxide; FS TT-P-636, red oxide; or manufacturer's standard shop primer complying with performance requirements of either of these red-oxide primers.

2.4 STEEL JOISTS

- A. Manufacture steel joists according to "Standard Specifications for Open Web Steel Joists, K-Series," in SJI's "Specifications," with steel-angle top- and bottom-chord members of joist type indicated.
- B. Comply with AWS requirements and procedures for shop welding, appearance, quality of welds, and methods used in correcting welding work.
- C. Provide holes in chord members for connecting and securing other construction to joists.
- D. Camber joists according to SJI's "Specifications".
- E. Equip bearing ends of joists with manufacturer's standard beveled ends or sloped shoes if joist slope exceeds 1/4 inch per 12 inches.

2.5 JOIST ACCESSORIES

- A. Bridging: Provide bridging anchors and number of rows of horizontal or diagonal bridging of material, size, and type required by SJI's "Specifications" for type of joist, chord size, spacing, and span.
- B. Fabricate steel bearing plates with integral anchorages of sizes and thicknesses indicated. Shop prime paint.
- C. Supply ceiling extensions, either extended bottom-chord elements or a separate extension unit of enough strength to support ceiling construction. Extend ends to within 1/2 inch of finished wall surface, unless otherwise indicated.
- D. Supply miscellaneous accessories, including splice plates and bolts required by joist manufacturer to complete joist installation.

2.6 CLEANING AND SHOP PAINTING

- A. Clean and remove loose scale, heavy rust, and other foreign materials from fabricated joists and accessories to be primed by hand-tool cleaning, SSPC-SP 2 or power-tool cleaning, SSPC-SP 3.

- B. Apply one shop coat of primer to joists and joist accessories to be primed to provide a continuous, dry paint film not less than 1 mil thick.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine supporting substrates, embedded bearing plates, and abutting structural framing, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Do not install joists until supporting construction is in place and secured.
- B. Install joists and accessories plumb, square, and true to line; securely fasten to supporting construction according to SJI's "Specifications," joist manufacturer's written recommendations, agencies having jurisdiction over the construction and requirements in this Section.
 - 1. Before installation, splice joists delivered to Project site in more than one piece.
 - 2. Space, adjust, and align joists accurately in location before permanently fastening.
 - 3. Install temporary bracing and erection bridging, connections, and anchors to ensure that joists are stabilized during construction.
 - 4. Delay rigidly connecting bottom-chord extensions to columns or supports until dead loads have been applied at bottom-chord extensions indicated to be rigidly connected.
- C. Field weld joists to supporting steel bearing plates. Coordinate welding sequence and procedure with placement of joists. Comply with AWS requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
- D. Bolt joists to supporting steel framework in accordance with requirements of governing agencies or where indicated. Field welding is not required at bolted joist connections.
- E. Install and connect bridging concurrently with joist erection, before construction loads are applied. Anchor ends of bridging lines at top and bottom chords if terminating at walls or beams.

3.3 REPAIRS AND PROTECTION

- A. Repair damaged galvanized coatings on galvanized items with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
- B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, to ensure joists and accessories are without damage or deterioration at time of Substantial Completion.

END OF SECTION 052100

SECTION 05310 - STEEL DECK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Roof deck.
- B. Related Sections include the following:
 - 1. Section 03 3000 "Cast-in-Place Concrete" for concrete fills.
 - 2. Section 05 1200 "Structural Steel" for shop- and field-welded shear connectors.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of deck, accessory, and product indicated.
- B. Shop Drawings:
 - 1. Include layout and types of deck panels, anchorage details, reinforcing channels, pans, cut deck openings, special jointing, accessories, and attachments to other construction.

1.4 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of steel deck, signed by product manufacturer.
- B. Welding certificates. Copies of certificates for welding procedures and personnel.
- C. Field quality-control test and inspection reports.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
 - 1. Member in good standing of Steel Deck Institute (SDI).
- B. Testing Agency Qualifications: An independent agency qualified according to ASTM E 329 for testing indicated.
- C. Welding: Qualify procedures and personnel according to AWS D1.3, "Structural Welding Code - Sheet Steel."

- D. Fire-Test-Response Characteristics: Where indicated, provide steel deck units identical to those tested for fire resistance per ASTM E 119 by a testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Fire-Resistance Ratings: Indicated by design designations of applicable testing and inspecting agency.
 - 2. Steel deck units shall be identified with appropriate markings of applicable testing and inspecting agency.
- E. AISI Specifications: Comply with calculated structural characteristics of steel deck according to AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members."

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of Steel Deck Institute - "Manual of Construction with Steel Deck" (SDI - MOC2).
- B. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.
- C. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.
 - 1. Protect and ventilate acoustical cellular roof deck with factory-installed insulation to maintain insulation free of moisture.

1.7 COORDINATION

- A. Coordinate installation of sound-absorbing insulation strips in topside ribs of acoustical deck with roofing installation specified in Division 7 Section to ensure protection of insulation strips against damage from effects of weather and other causes.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent

2.2 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Steel Deck:
 - a. ASC Profiles, Inc.
 - b. Canam Steel Corp.;The Canam Manac Group.
 - c. Consolidated Systems, Inc.

- d. DACS, Inc.
- e. D-Mac Industries Inc.
- f. Epic Metals Corporation.
- g. Marlyn Steel Decks, Inc.
- h. New Millennium Building Systems, LLC.
- i. Nucor Corp.; Vulcraft Division.
- j. Roof Deck, Inc.
- k. United Steel Deck, Inc.
- l. Valley Joist; Division of EBSCO Industries, Inc.
- m. Verco Manufacturing Co.
- n. Wheeling Corrugating Company; Div. of Wheeling-Pittsburgh Steel Corporation.

2.3 ROOF DECK

- A. Steel Roof Deck: Fabricate panels, with or without top-flange stiffening grooves, to comply with "SDI Specifications and Commentary for Steel Roof Deck," in SDI Publication No. 31, and with the following:
 - 1. Deck Profile: Type B (wide rib), depth 1 1/2 inches.
 - a. Galvanized Steel Sheet: ASTM A653, Grade 33, G60 zinc coating.
 - b. Design Uncoated-Steel Thickness: 0.0358 inch where 20 gauge is indicated; 0.0474 inch where 18 gauge is indicated..
 - 2. Side Laps: Overlapped.

2.4 ACCESSORIES

- A. General: Provide manufacturer's standard roof or floor accessory materials for deck that comply with requirements indicated.
- B. Mechanical Fasteners: Corrosion-resistant, low-velocity, power-actuated or pneumatically driven carbon-steel fasteners; or self-drilling, self-threading screws.
- C. Side-Lap Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws.
- D. Flexible Closure Strips: Vulcanized, closed-cell, synthetic rubber.
- E. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi (230 MPa), not less than 0.0358-inch (0.91-mm) design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.
- F. Column Closures, End Closures, Z-Closures, and Cover Plates: Galvanized G-60 (Z180) minimum steel sheet, of same thickness as deck, unless otherwise indicated.
- G. Shear Connectors: ASTM A 108, Grades 1010 through 1020 headed stud type, cold-finished carbon steel, AWS D1.1, Type B, with arc shields.
- H. Galvanizing Repair Paint: ASTM A780.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance.

3.2 INSTALLATION, GENERAL

- A. Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 31, manufacturer's written instructions, and requirements in this Section.
- B. Install temporary shoring before placing deck panels, if required to meet deflection limitations.
- C. Locate deck bundles to prevent overloading of supporting members.
- D. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side-lap interlocks.
- E. Place deck panels flat and square and fasten to supporting frame without warp or deflection.
- F. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to deck.
- G. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of deck, and support of other work.
- H. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used for correcting welding work.

3.3 ROOF DECK INSTALLATION

- A. Fasten roof deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated or arc seam welds with an equal perimeter, but not less than 1-1/2 inches long, and as indicated on drawings.
- B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, as indicated.
- C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches, with end joints as follows:
 - 1. End Joints: Lapped 2 inches minimum.
- D. Roof Sump Pans and Sump Plates: Install over openings provided in roof decking and weld flanges to top of deck. Space welds not more than 12 inches apart with at least 1 weld at each corner.
- E. Miscellaneous Roof Deck Accessories: Install ridge and valley plates, finish strips, cover plates, end closures, and reinforcing channels according to deck manufacturer's written instructions. Weld to substrate to provide a complete deck installation.

- F. Flexible Closure Strips: Install flexible closure strips over partitions, walls, and where indicated. Install with adhesive according to manufacturer's written instructions to ensure complete closure.

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: The Owner shall engage and pay for a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports. The contractor shall schedule with the testing agency, in a timely manner, for when testing and inspection work is required.
- B. Field welds will be subject to inspection.
- C. Testing agency will report inspection results promptly and in writing to Contractor and Architect.
- D. Remove and replace work that does not comply with specified requirements.
- E. Additional inspecting, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.

3.5 REPAIRS AND PROTECTION

- A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
- B. Provide final protection and maintain conditions to ensure that steel deck is without damage or deterioration at time of Substantial Completion.

END OF SECTION 05310

SECTION 054000 - COLD-FORMED STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Exterior load-bearing wall framing.
 - 2. Interior load-bearing wall framing.
 - 3. Exterior non-load-bearing curtain wall framing.
 - 4. Exterior soffit framing
- B. Related Sections include the following:
 - 1. Section 05 5000 "Metal Fabrications".
 - 2. Section 06 1053 "Miscellaneous Carpentry".
 - 3. Section 09 2900 "Gypsum Board Assemblies".
 - 4. Section 01 3515 "LEED Certification Procedures".
 - 5. Section 01 3516 "LEED Submittal Forms".
 - 6. Section 017419 "Construction Waste Management and Disposal."
 - 7. Section 018113 "Sustainable Design Requirements."

1.3 DEFINITIONS

- A. Minimum Uncoated Steel Thickness: Minimum uncoated thickness of cold-formed framing delivered to the Project site shall be not less than 95 percent of the thickness used in the cold-formed framing design. Lesser thicknesses shall be permitted at bends due to cold forming.
- B. Producer: Entity that produces steel sheet coil fabricated into cold-formed members.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Sustainable Design Submittals:
 - 1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
- C. Shop Drawings:
 - 1. Include layout, spacings, sizes, thicknesses, and types of cold-formed steel framing; fabrication; and fastening and anchorage details, including mechanical fasteners.

2. Indicate reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining work.

1.5 INFORMATIONAL SUBMITTALS

- A. Mill certificates signed by steel sheet producer or test reports from a qualified independent testing agency indicating steel sheet complies with requirements.
- B. Welding Certificates: Copies of certificates for welding procedures and personnel.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed cold-formed metal framing similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Mill certificates signed by steel sheet producer or test reports from a qualified independent testing agency indicating steel sheet complies with requirements, including uncoated steel thickness, yield strength, tensile strength, total elongation, chemical requirements, and galvanized-coating thickness.
- C. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code--Steel," and AWS D1.3, "Structural Welding Code--Sheet Steel."
- D. AISI Specifications: Comply with AISI's "Specification for the Design of Cold-Formed Steel Structural Members" for calculating structural characteristics of cold-formed metal framing.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Protect cold-formed metal framing from corrosion, deformation, and other damage during delivery, storage, and handling.
- B. Store cold-formed metal framing, protect with a waterproof covering, and ventilate to avoid condensation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering cold-formed metal framing that may be incorporated into the Work include, but are not limited to, the following:
 1. Allied American Studco, Inc.
 2. Angeles Metal Systems.
 3. California Expanded Metal Products Co.
 4. California Metal Systems, Inc.
 5. Clark Steel Framing Industries.
 6. Consolidated Fabricators Corp.
 7. Consolidated Systems, Inc.
 8. Dale Industries, Inc.
 9. Design Shapes in Steel.
 10. Dietrich Industries, Inc.

11. Knorr Steel Framing Systems.
12. MarinoWare; Div. of Ware Industries, Inc.
13. Scafco Corp.
14. Steel Construction Systems.
15. Steel Developers, LLC.
16. Steeler, Inc.
17. Studco of Hawaii, Inc.
18. Super Stud Building Products, Inc.
19. Unimast, Inc.
20. United Metal Products, Inc.
21. Western Metal Lath.

2.2 MATERIALS

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- B. Steel Sheet: ASTM A 653/A 653M, structural steel, G60 zinc coated:
 1. Grade: 33, for minimum uncoated steel thickness of 0.0428 inch and less, 50 for minimum uncoated steel thickness of 0.0538 inch and greater.

2.3 WALL FRAMING

- A. Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges, complying with ASTM C 955, and as follows:
 1. Minimum Uncoated-Steel Thickness: As indicated.
 2. Flange Width: 1-5/8 inches unless otherwise indicated.
 3. Section Properties: As indicated.
- B. Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, un-punched, with straight flanges, complying with ASTM C 955, and as follows:
 1. Minimum Uncoated-Steel Thickness: Matching steel studs.
 2. Flange Width: 1-1/4 inches, unless otherwise noted.

2.4 FRAMING ACCESSORIES

- A. Fabricate steel-framing accessories of the same material and finish used for framing members, with a minimum yield strength of 33,000 psi.
- B. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated, as follows:
 1. Supplementary framing.
 2. Bracing, bridging, and solid blocking.
 3. Web stiffeners.
 4. End clips.
 5. Foundation clips.
 6. Gusset plates.
 7. Stud kickers, knee braces, and girts.
 8. Joist hangers and end closures.

9. Hole reinforcing plates.
10. Backer plates.

2.5 ANCHORS, CLIPS, AND FASTENERS

- A. Steel Shapes and Clips: ASTM A 36/A 36M, zinc coated by hot-dip process according to ASTM A 123.
- B. Expansion Anchors: Fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 5 times design load, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.
- C. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 10 times design load, as determined by testing per ASTM E 1190 conducted by a qualified independent testing agency. Minimum penetration into hardened concrete 1-1/4 inches.
- D. Mechanical Fasteners: Corrosion-resistant-coated, self-drilling, self-threading steel drill screws.
 1. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.
- E. Welding Electrodes: Comply with AWS standards.

2.6 MISCELLANEOUS MATERIALS

- A. Galvanizing Repair Paint: ASTM A 780.
- B. Cement Grout: Portland cement, ASTM C 150, Type I; and clean, natural sand, ASTM C 404. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.
- C. Nonmetallic, Non-shrink Grout: Premixed, nonmetallic, non-corrosive, non-staining grout containing selected silica sands, Portland cement, shrinkage-compensating agents, and plasticizing and water-reducing agents, complying with ASTM C 1107, with fluid consistency and 30-minute working time.

2.7 FABRICATION

- A. Fabricate cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened, according to manufacturer's written recommendations and requirements in this Section.
 1. Fabricate framing assemblies using jigs or templates.
 2. Cut framing members by sawing or shearing; do not torch cut.
 3. Fasten cold-formed metal framing members by welding. Wire tying of framing members is not permitted. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
 4. Fasten cold-formed metal framing members by welding or screw fastening, as standard with fabricator. Wire tying of framing members is not permitted.
 - a. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
 - b. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by not less than three exposed screw threads.

5. Fasten other materials to cold-formed metal framing by welding, bolting, or screw fastening, according to Shop Drawings.
- B. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies to prevent damage or permanent distortion.
- C. Fabrication Tolerances: Fabricate assemblies level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
 1. Spacing: Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.
 2. Squareness: Fabricate each cold-formed metal framing assembly to a maximum out-of-square tolerance of 1/8 inch.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine supporting substrates and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Before sprayed fire-resistive materials are applied, attach continuous angles, supplementary framing, or tracks to structural members indicated to receive sprayed fire-resistive materials.
- B. After applying sprayed fire-resistive materials, remove only as much of these materials as needed to complete installation of cold-formed framing without reducing thickness of fire-resistive materials below that are required to obtain fire-resistance rating indicated. Protect remaining fire-resistive materials from damage.
- C. Grout bearing surfaces uniform and level to ensure full contact of bearing flanges or track webs on supporting concrete or masonry construction.

3.3 INSTALLATION, GENERAL

- A. Cold-formed metal framing may be shop or field fabricated for installation, or it may be field assembled.
- B. Install cold-formed metal framing according to ASTM C 1007, unless more stringent requirements are indicated.
- C. Install shop- or field-fabricated, cold-formed framing and securely anchor to supporting structure.
 1. Bolt or weld wall panels at horizontal and vertical junctures to produce flush, even, true-to-line joints with maximum variation in plane and true position between fabricated panels not exceeding 1/16 inch.
- D. Install cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened, according to manufacturer's written recommendations and requirements in this Section.
 1. Cut framing members by sawing or shearing; do not torch cut.

2. Fasten cold-formed metal framing members by welding or screw fastening, as standard with fabricator. Wire tying of framing members is not permitted.
 - a. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
 - b. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by not less than three exposed screw threads.
- E. Install framing members in one-piece lengths, unless splice connections are indicated for track or tension members.
- F. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.
- G. Do not bridge building expansion and control joints with cold-formed metal framing. Independently frame both sides of joints.
- H. Install insulation in built-up exterior framing members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing work.
- I. Fasten hole reinforcing plate over web penetrations that exceed size of manufacturer's standard punched openings.
- J. Erection Tolerances: Install cold-formed metal framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
 1. Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

3.4 WALL INSTALLATION

- A. Install continuous top and bottom tracks sized to match studs. Align tracks accurately and securely anchor at corners and ends, and at spacings as follows:
 1. Anchor Spacing: As indicated.
- B. Squarely seat studs against webs of top and bottom tracks. Fasten both flanges of studs to top and bottom tracks. Space studs as follows:
 1. Stud Spacing: As indicated.
- C. Set studs plumb, except as needed for diagonal bracing or required for non-plumb walls or warped surfaces and similar configurations.
- D. Align studs vertically where floor framing interrupts wall-framing continuity. Where studs cannot be aligned, continuously reinforce track to transfer loads.
- E. Align floor and roof framing over studs. Where framing cannot be aligned, continuously reinforce track to transfer loads.
- F. Anchor studs abutting structural columns or walls, including masonry walls, to supporting structure as indicated.

- G. Install headers over wall openings wider than stud spacing. Locate headers above openings as indicated. Fabricate headers of compound shapes indicated or required to transfer load to supporting studs, complete with clip-angle connectors, web stiffeners, or gusset plates.
 - 1. Frame wall openings with not less than a double stud at each jamb of frame as indicated on Shop Drawings.
 - 2. Install runner tracks and jack studs above and below wall openings. Anchor tracks to jamb studs with clip angles or by welding, and space jack studs same as full-height wall studs.
- H. Install supplementary framing, blocking, and bracing in stud framing indicated to support fixtures, equipment, services, casework, heavy trim, furnishings, and similar work requiring attachment to framing.
 - 1. If type of supplementary support is not indicated, comply with stud manufacturer's written recommendations and industry standards in each case, considering weight or load resulting from item supported.
- I. Install horizontal bridging in stud system, spaced at a maximum of 48 inches, 54 inches, or as indicated on Shop Drawings. Fasten at each stud intersection.
 - 1. Bridging: Cold-rolled steel channel, welded or mechanically fastened to webs of punched studs with a minimum of two screws into each flange of the clip angle.
- J. Install steel sheet diagonal bracing straps to both stud flanges, terminate at and fasten to reinforced top and bottom tracks. Fasten clip-angle connectors to multiple studs at ends of bracing and anchor to structure.
- K. Install miscellaneous framing and connections, including supplementary framing, web stiffeners, clip angles, continuous angles, anchors, and fasteners, to provide a complete and stable wall-framing system.

3.5 FIELD QUALITY CONTROL

- A. Testing: The Contractor shall engage and pay for a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports. The contractor shall schedule with the testing agency, in a timely manner, for when tests and inspections are required to be performed.
- B. Field and shop welds will be subject to inspection and testing.
- C. Testing agency will report test results promptly and in writing to Contractor and Architect.
- D. Remove and replace Work that does not comply with specified requirements.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.

3.6 REPAIRS AND PROTECTION

- A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed metal framing with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
- B. Touchup Painting: Wire brush, clean, and paint scarred areas, welds, and rust spots on fabricated and installed prime-painted, cold-formed metal framing. Paint framing surfaces with same type of shop paint used on adjacent surfaces.

- C. Protect paper-surfaced sheathing that will be exposed to weather for more than 30 days by covering exposed exterior surface of sheathing with a securely fastened air-infiltration barrier. Apply covering immediately after sheathing is installed.
- D. Protect cutouts, corners, and joints in sheathing by filling with a flexible sealant or by applying tape recommended by sheathing manufacturer at time sheathing is applied.
- E. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, to ensure cold-formed metal framing is without damage or deterioration at time of Substantial Completion.

END OF SECTION 054000

SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metal bollards.

1.2 COORDINATION

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.
- B. Coordinate installation of metal fabrications that are anchored to or that receive other work. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.3 ACTION SUBMITTALS

- A. Shop Drawings: Show fabrication and installation details. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide Shop Drawings for the following:
 1. Metal bollards.

1.4 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Welding Qualifications: Qualify procedures and personnel according to the following:
 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
 2. AWS D1.6/D1.6M, "Structural Welding Code - Stainless Steel."

1.5 FIELD CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication and indicate measurements on Shop Drawings.
 1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating metal fabrications without field measurements. Coordinate wall and other contiguous construction to ensure that actual dimensions correspond to established dimensions.

2. Provide allowance for trimming and fitting at site.

1.6 COORDINATION

- A. Coordinate installation of anchorages for metal fabrications. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- B. Coordinate installation of steel weld plates and angles for casting into concrete that are specified in this Section but required for work of another Section. Deliver such items to Project site in time for installation.

PART 2 - PRODUCTS

2.1 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

2.2 FERROUS METALS

- A. Steel Pipe: ASTM A 53/A 53M, standard weight (Schedule 40), unless another weight is indicated or required by structural loads.

2.3 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Shop Primers: Provide primers that comply with Division 9 painting Sections.
- C. Universal Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.
 1. Use primer with a VOC content of 420 g/L (3.5 lb/gal.) or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 2. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.
- D. Zinc-Rich Primer: Complying with SSPC-Paint 20 or SSPC-Paint 29 and compatible with topcoat.
 1. Use primer with a VOC content of 420 g/L (3.5 lb/gal.) or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 2. Available Products:
 - a. Benjamin Moore & Co.; Epoxy Zinc-Rich Primer CM18/19.
 - b. Carboline Company; Carbozinc 621.
 - c. ICI Devoe Coatings; Catha-Coat 313.
 - d. International Coatings Limited; Interzinc 315 Epoxy Zinc-Rich Primer.
 - e. PPG Architectural Finishes, Inc.; Aquapon Zinc-Rich Primer 97-670.

- f. Sherwin-Williams Company (The); Corothane I GalvaPac Zinc Primer.
 - g. Tnemec Company, Inc.; Tneme-Zinc 90-97.
- E. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.
- F. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.
- G. Nonshrink, Metallic Grout: Factory-packaged, ferrous-aggregate grout complying with ASTM C 1107, specifically recommended by manufacturer for heavy-duty loading applications.
- H. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.4 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Form exposed work with accurate angles and surfaces and straight edges.
- E. Weld corners and seams continuously to comply with the following:
- 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.
- G. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
- 1. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, 1/8 by 1-1/2 inches, with a minimum 6-inch embedment and 2-inch

hook, not less than 8 inches from ends and corners of units and 24 inches o.c., unless otherwise indicated.

2.5 METAL BOLLARDS

- A. Fabricate metal bollards from Schedule 40 steel pipe 1/4-inch wall-thickness round steel tubing.
 - 1. Cap bollards with concrete.

2.6 FINISHES, GENERAL

- A. Finish metal fabrications after assembly.
- B. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

2.7 STEEL AND IRON FINISHES

- A. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications:
 - 1. Exteriors (SSPC Zone 1B) SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 - 2. Interiors (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."
- B. Shop Priming: Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes and those to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.
 - 1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- C. Field Welding: Comply with the following requirements:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.

3. Remove welding flux immediately.
 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.
- E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
- F. Corrosion Protection: Coat concealed surfaces of aluminum that come into contact with grout, concrete, masonry, wood, or dissimilar metals with the following:

3.2 INSTALLING METAL BOLLARDS

- A. Anchor bollards in place with concrete footings. Center and align bollards in holes 3 inches above bottom of excavation. Place concrete and vibrate or tamp for consolidation. Support and brace bollards in position until concrete has cured.
- B. Fill bollards solidly with concrete, mounding top surface to shed water.

3.3 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
1. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.
- B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION

SECTION 05 5213 - PIPE AND TUBE RAILINGS

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Free-standing railings at ramps and steps.

1.2 RELATED REQUIREMENTS

- A. Section 03 3000 - Cast-in-Place Concrete: Placement of anchors in concrete.

1.3 REFERENCE STANDARDS

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
- B. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2012.
- C. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2013.
- D. ASTM E935 - Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings; 2013.
- E. ASTM E985 - Standard Specification for Permanent Metal Railing Systems and Rails for Buildings; 2000 (Reapproved 2006).
- F. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 1999 (Ed. 2004).

1.4 SUBMITTALS

- A. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.

PART 2 PRODUCTS

2.1 RAILINGS - GENERAL REQUIREMENTS

- A. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of ASTM E985 and applicable local code.

- B. Distributed Loads: Design railing assembly, wall rails, and attachments to resist distributed force of 75 pounds per linear foot applied to the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E935.
- C. Concentrated Loads: Design railing assembly, wall rails, and attachments to resist a concentrated force of 200 pounds applied at any point on the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E935.
- D. Allow for expansion and contraction of members and building movement without damage to connections or members.
- E. Dimensions: See drawings for configurations and heights.
 - 1. Top Rails and Wall Rails: 1-1/2 inches diameter, round.
 - 2. Intermediate Rails: 1-1/2 inches diameter, round.
 - 3. Posts: 1-1/2 inches diameter, round.
- F. Provide anchors and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.
 - 1. For anchorage to stud walls, provide backing plates, for bolting anchors.
- G. Provide welding fittings to join lengths, seal open ends, and conceal exposed mounting bolts and nuts, including but not limited to elbows, T-shapes, splice connectors, flanges, escutcheons, and wall brackets.

2.2 STEEL RAILING SYSTEM

- A. Steel Tube: ASTM A500/A500M, Grade B cold-formed structural tubing.
- B. Steel Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.
- C. Welding Fittings: Factory- or shop-welded from matching pipe or tube; seams continuously welded; joints and seams ground smooth.
- D. Exposed Fasteners: Flush countersunk screws or bolts; consistent with design of railing.
- E. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

2.3 FABRICATION

- A. Accurately form components to suit specific project conditions and for proper connection to building structure.
- B. Fit and shop assemble components in largest practical sizes for delivery to site.

- C. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.
- D. Welded Joints:
 - 1. Exterior Components: Continuously seal joined pieces by continuous welds. Drill condensate drainage holes at bottom of members at locations that will not encourage water intrusion.
 - 2. Interior Components: Continuously seal joined pieces by continuous welds.
 - 3. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.

3.2 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Supply items required to be cast into concrete or embedded in masonry with setting templates, for installation as work of other sections.
- C. Apply one coat of bituminous paint to concealed aluminum surfaces that will be in contact with cementitious or dissimilar materials.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.
- C. Install railings in compliance with ADA Standards for accessible design at applicable locations.
- D. Anchor railings securely to structure.
- E. Field weld anchors as indicated on shop drawings. Touch-up welds with primer. Grind welds smooth.
- F. Conceal anchor bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.

3.4 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per floor level, non-cumulative.

- B. Maximum Offset From True Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Fire-retardant Wood blocking and nailers.
 - 2. Fire-retardant Plywood

1.3 DEFINITIONS

- A. Rough Carpentry: Carpentry work not specified in other Sections and not exposed, unless otherwise indicated.
- B. Lumber grading agencies, and the abbreviations used to reference them, include the following:
 - 1. NELMA - Northeastern Lumber Manufacturers Association.
 - 2. NLGA - National Lumber Grades Authority.
 - 3. RIS - Redwood Inspection Service.
 - 4. SPIB - Southern Pine Inspection Bureau.
 - 5. WCLIB - West Coast Lumber Inspection Bureau.
 - 6. WWPA - Western Wood Products Association.

1.4 SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
 - 1. Include 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, net amount of preservative retained, and chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
 - 2. 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, both before and after exposure to elevated temperatures when tested according to ASTM D 5516 and ASTM D 5664.
 - 3. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber, plywood, and other panels; place spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
 - 3. Provide dressed lumber, S4S, unless otherwise indicated.
 - 4. Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWP A C2 (lumber) and AWP A C9 (plywood), except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWP A C31 with inorganic boron (SBX).
- B. Kiln-dry material after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark each treated item with the treatment quality mark of an inspection agency approved by the American Lumber Standards Committee Board of Review.
- D. Application: Treat all rough carpentry, unless otherwise indicated.
 - 1. Wood nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
 - 2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
 - 3. Wood framing members less than 18 inches above grade.

2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, provide materials that comply with performance requirements in AWP A C20 (lumber) and AWP A C27 (plywood). Identify fire-retardant-treated wood with appropriate classification marking of UL, U.S. Testing, Timber Products Inspection, or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Use treatment for which chemical manufacturer publishes physical properties of treated wood after exposure to elevated temperatures, when tested by a qualified independent testing agency according to ASTM D 5664, for lumber and ASTM D 5516, for plywood.
 - 2. Use treatment that does not promote corrosion of metal fasteners.

3. Use Exterior type for exterior locations and where indicated.
4. Use Interior Type A High Temperature (HT), unless otherwise indicated.

2.4 DIMENSION LUMBER

- A. General: Provide dimension lumber of grades indicated according to the American Lumber Standards Committee National Grading Rule provisions of the grading agency indicated.

2.5 MISCELLANEOUS LUMBER

- A. General: Provide lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.

- B. For items of dimension lumber size, provide Construction, Stud, or No. 2 grade lumber with 19 percent maximum moisture content and any of the following species:

1. Mixed southern pine; SPIB.
2. Hem-fir or Hem-fir (north); NLGA, WCLIB, or WWPA.
3. Spruce-pine-fir (south) or Spruce-pine-fir; NELMA, NLGA, WCLIB, or WWPA.
4. Eastern softwoods; NELMA.
5. Northern species; NLGA.
6. Western woods; WCLIB or WWPA.

2.6 PLYWOOD BACKING PANELS

- A. Telephone and Electrical Equipment Backing Panels: DOC PS 1, Exposure 1, C-D Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than 5/8 inch thick.

2.7 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.

1. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

- B. Nails, Brads, and Staples: ASTM F 1667.

- C. Power-Driven Fasteners: CABO NER-272.

- D. Wood Screws: ASME B18.6.1.

- E. Screws for Fastening to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.

- F. Lag Bolts: ASME B18.2.1. (ASME B18.2.3.8M).

- G. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.
- H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
 - 1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

2.8 METAL FRAMING ANCHORS

- A. General: Provide framing anchors made from metal indicated, of structural capacity, type, and size indicated, and as follows:
 - 1. Research/Evaluation Reports: Provide products acceptable to authorities having jurisdiction and for which model code research/evaluation reports exist that show compliance of metal framing anchors, for application indicated, with building code in effect for Project.
 - 2. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.
- B. Galvanized Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- B. Do not use materials with defects that impair quality of rough carpentry or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- C. Apply field treatment complying with AWP M4 to cut surfaces of preservative-treated lumber and plywood.
- D. Securely attach rough carpentry work to substrate.

3.2 WOOD BLOCKING, AND NAILER INSTALLATION

- A. Install where indicated and where required 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.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated. Build anchor bolts into masonry during installation of masonry work. Where possible, secure anchor bolts to formwork before concrete placement.

3.3 WOOD FRAMING INSTALLATION, GENERAL

- A. Framing Standard: Comply with AFPA's "Manual for Wood Frame Construction," unless otherwise indicated.

3.4 WOOD STRUCTURAL PANEL INSTALLATION

- A. Plywood Backing Panels: Nail or screw to supports.

END OF SECTION 061000

SECTION 064023 – INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Plastic-laminate cabinets and cabinet hardware.
 - 2. Solid surface countertops and panels.

1.3 DEFINITIONS

- A. Interior 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: For each type of product indicated, including cabinet hardware and accessories and finishing materials and processes.
- 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, soap dispensers, and other items installed in architectural woodwork.
 - 4. Show direction of laminate
- C. Samples for verification:
 - 1. Plastic laminates.
 - 2. Solid-surfacing materials.
 - 3. Wood with or for transparent finish, not less than 6 inches wide by 8 inches long, for each species and cut, finished on 1 side and 1 edge
 - 4. Exposed cabinet hardware and accessories, one unit for each type and finish
- D. Product Certificates: Signed by manufacturers of woodwork certifying that products furnished comply with requirements.

- E. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Certified participant in AWI's Quality Certification Program.
- B. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in-service performance. Shop is a certified participant in AWI's Quality Certification Program.
- C. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards" for grades of interior architectural woodwork, construction, finishes, installation, and other requirements.
 - 1. Provide AWI Quality Certification Program labels and certificates indicating that woodwork, including installation, complies with requirements of grades specified.
- D. Source Limitations: Engage a qualified woodworking firm to assume undivided responsibility for production of interior architectural woodwork.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver woodwork until painting and similar operations that could damage woodwork have been 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 can be supported and installed as indicated.

1.9 WARRANTY

- A. Provide a written warranty that all casework materials and workmanship will be free from defects for a period of one year from the date of Substantial Completion of the project. Any defective work is to be repaired or replaced at no cost to the Owner.

PART 2 - PRODUCTS

2.1 WOODWORK MANUFACTURERS

- A. Manufacturers are subject to compliance with requirements.

2.2 MATERIALS

- A. General: Provide materials that comply with requirements of the AWI quality standard for each type of woodwork and quality grade specified, unless otherwise indicated.
- B. Wood Products: Comply with the following:
 - 1. Hardboard: AHA A135.4.
 - 2. Medium-Density Fiberboard: ANSI A208.2, Grade MD
 - 3. Particleboard: ANSI A208.1, Grade M-2.
 - 4. Particleboard: Straw-based particleboard complying with requirements in ANSI A208.1, Grade M-2, except for density.
 - 5. Softwood Plywood: DOC PS 1
- C. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated, or if not indicated, as required by woodwork quality standard.
 - 1. Available Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Formica
 - b. Pionite
 - c. Wilsonart
 - d. Nevamar
 - 2. Colors and Patterns: As indicated in Finish Legend on Drawings.
- D. Solid-Surfacing Material: Homogeneous solid sheets of filled plastic resin complying with material and performance requirements in ANSI Z124.3, for Type 5 or Type 6, without a precoated finish.
 - 1. Available Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Wilsonart
 - b. DuPont Corian
 - c. LG Hi-Macs
 - d. Avonite
 - e. Starton
 - f. Formica
 - 2. Colors and Patterns: As indicated in Finish Legend on Drawings
- E. Adhesive for Bonding Plastic Laminate: Unpigmented contact cement.

1. Adhesive for Bonding Edges: Hot-melt adhesive.

2.3 CABINET HARDWARE AND ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with architectural woodwork.
- B. Hinges:
 1. GRASS Institutional hinge or approved equal
 2. Quantity of hinges per door as required by the manufacturer's specifications.
- C. Pulls:
 1. Metal Pull, back mounted, solid metal, B.O.D: Mockett DP 128.
 2. Wire Pull, back mounted, solid metal, 12 inches long, 5/16" in diameter where indicated in drawings.
- D. Locks:
 1. Provide on all doors and drawers. Brand: TIMBERLINE Cam Lock, Model CB-080 through 199 series. Locks to have a Bezel. Strike plates used where appropriate. Keying Requirements: All locks in a single room shall be keyed alike. Locks shall be keyed differently from room to room. Provide 2 master keys per room.
- E. Drawer Slides:
 1. Drawer slides for all standard drawers shall be full extension epoxy coated steel modular system by one of the following:
 - a. BLUM METABOX; Drawer System 330 Series. Color, white.
 - b. GRASS ZARGEN; Drawer System 6200 Series. Color, white.
 - c. GRASS INTEGRA; Drawer System "Integra Top" Clip on.
 2. Where shown in drawings, file drawers shall have full extension slides and standard file hangers and dividers with option for letter or legal size files
- F. Edge banding:
 1. Colors to match panel face color.
- G. Casework Shelf Supports:
 1. Bainbridge Mfg, 5mm dual pin part #3220 or equal.
- H. Door Stop/ Restraint
 1. Provide chain stop in all locations where cabinet doors hit adjacent gypsum board or casework.
- I. Counter Supports:
 1. Mockett SWS1 in Metallic Silver finish, or equal on Reception and Media Center Desks
 2. A & M Hardware, Inc. steel workstation bracket with notch for wire run, or equal
 3. Stainless Steel tube support for transaction counter(s), 1 inch diameter.

J. Countertop Cable Grommet:

1. Sugatsune LS60BL Cable Grommet in Black finish, or equal. Computer Lab Desks as indicated.

K. Exposed Hardware Finishes:

1. For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
 - a. Satin Stainless Steel: BHMA 630
2. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

2.4 INSTALLATION 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 elsewhere as required for corrosion resistance. Provide toothed-steel or lead expansion sleeves for drilled-in-place anchors.

2.5 CABINET FABRICATION, GENERAL

- A. Interior Woodwork Grade: Unless otherwise indicated, provide Custom-grade interior woodwork complying with referenced quality standard.
 1. All casework is custom grade except casework with wood grain or patterned laminate or wood veneer faces. In these cases, grain matching of the casework faces will be premium grade, and all other details will remain custom grade.
- 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.
- D. Complete fabrication, including assembly, finishing, and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
 1. Notify Architect seven days in advance of the dates and times woodwork fabrication will be complete.
 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 that various parts fit as intended and check measurements of assemblies against field measurements indicated on Shop Drawings before disassembling for shipment.
- E. 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.

2.6 PLASTIC-LAMINATE CABINETS

A. General:

1. Comply with the AWI Quality Standards (latest edition) Custom Grade.
 - a. Where casework has wood grain or patterned laminate, grain matching of the casework faces will be premium grade, and all other details will remain custom grade.
2. Reference Section 400-G-3, Identification of Parts, for the criteria of exposed and semi-exposed surfaces.
3. Cabinetry style shall be constructed per Section 400-G-7, B; Reveal Overlay.

B. Drawers:

1. Drawer fronts shall be 3/4 inch thick particleboard overlaid with high-pressure plastic laminate on both faces. Edges are banded with 3mm PVC with outer edges 1/8 inch radius. Reference edgebanding schedule for PVC colors.
2. Drawer System: Integral drawer slide and drawer side panel, equal to "Metabox" full drawer extension, as manufactured by Julius Blum, Inc. or Equal.
3. File Drawer System: Integral drawer slide and drawer side panel, equal to "Metafile" full drawer extension, as manufactured by Julius Blum, Inc. or Equal.

C. Doors:

1. Doors shall be 3/4 inch thick particleboard overlaid with a high-pressure plastic laminate on both faces. Edges shall be banded 3mm PVC with outer edges 1/8 inch radius. Color As indicated in Finish Legend on Drawings.

D. Cabinet Ends, Tops & Bottoms:

1. All panels shall be constructed with 3/4 inch particleboard as the core material.
2. At Semi-exposed (see AWI standards for definition and locations) ends, tops or bottoms the particleboard shall be overlaid with thermofused melamine on the exterior face.
3. At Exposed (see AWI standards for definition and locations) ends, tops or bottoms, the particleboard shall be overlaid with a high pressure decorative laminate on exposed faces. The inside color shall match the cabinet interior with the face color to match exterior color. The front edges shall be banded with .5mm PVC, reference edgebanding schedule for PVC colors.
4. In cabinets with doors, the interior surfaces of the particleboard shall be overlaid with either high pressure laminate cabinet liner or thermofused melamine. The color shall match the melamine surfaced back color. The front edges shall be banded with .5mm PVC, reference edgebanding schedule for PVC colors.
5. In open cabinets (without doors), the interior surfaces of the particleboard shall be overlaid with high pressure decorative to match exposed exterior color. The front edges shall be banded with .5mm PVC, reference edgebanding schedule for PVC colors.
6. All end panels shall be drilled for adjustable shelf supports with 0.5mm diameter holes on 32mm (1-1/4 inch) centers. For shelves up to and including 30 inch depth, two vertical sets of holes shall be provided at each end panel. For shelves over 30 inch deep, three vertical sets of holes shall be provided at each end panel.

E. Fixed And Adjustable Shelves:

1. Semi-exposed Shelves: Regardless of cabinet width, all shelves shall be 1 inch thick particleboard overlaid with thermofused melamine on top and bottom faces. Color to match cabinet interior.
2. Exposed Shelves: Regardless of cabinet width, all shelves shall be 1 inch particleboard overlaid with high pressure decorative laminate. Color to match exterior unless otherwise noted on the drawings.
3. All four edges of adjustable shelves and front edge of fixed shelves shall be banded with 0.5mm PVC, Color As indicated in Finish Legend on Drawings.

F. Cabinet Backs:

1. All semi-exposed cabinet backs shall be 3/4 inch thick minimum thermofused melamine. Color to match cabinet interior.
2. All exposed backs shall be 3/4 inch thick minimum particleboard overlaid with a high-pressure plastic laminate. Color to match exterior for exposed backs.
3. Provide removable backs for service access where shown on the project drawings.
4. All backs shall be full bound by all sides, tops and bottoms of the cabinet.

G. Dividers And Partitions:

1. Vertical dividers and partitions shall be 3/4 inch particleboard overlaid with thermofused melamine on both faces when semi-exposed and high pressure decorative laminate for exposed surfaces. The exposed edges shall be banded with .5mm PVC to match the other case edges.

H. Cabinet Toe Bases:

1. Cabinet bases shall be 4 inch standard height made in continuous lengths to ensure straight, level and true line of casework. The standard core materials shall be 3/4 inch CDX or paint grade maple plywood.
2. Bases shall be unfinished and ready for scheduled base finish to be applied.

2.7 SOLID-SURFACING-MATERIAL COUNTERTOPS

- A. Grade: Custom.
- B. Solid-Surfacing-Material Thickness: 1/2".
- C. Countertop Thickness: As indicated on Drawings.
- D. Colors, Patterns, and Finishes: As indicated in Finish Legend on Drawings.
- E. Edge Treatment: Eased.
- F. 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.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Condition woodwork to average prevailing humidity conditions in installation areas before installation.

- B. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and back priming.

3.2 INSTALLATION

- A. Grade: Install woodwork to comply with requirements for the same grade specified in Part 2 for fabrication of type of woodwork involved.
- B. Assemble woodwork and complete fabrication at Project site to comply with requirements for fabrication in Part 2, to extent that it was not completed in the shop.
- C. 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 inches.
- D. Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- E. 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.
- 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 sag, bow, or other 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 o.c. with No. 10 wafer-head screws sized for 1-inch penetration into framing, blocking, or hanging strips
- G. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.
 - 1. Align adjacent 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. Install countertops with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
 - 3. Secure backsplashes to tops with concealed metal brackets at 16 inches o.c. and to walls with adhesive.
 - 4. Calk space between backsplash and wall with sealant specified in Division 07 Section "Joint Sealants."
- H. Touch up finishing work specified in this Section after installation of woodwork. Fill nail holes with matching filler where exposed.
- I. Complete the finishing work specified in this Section to extent not completed at shop or before installation of woodwork. Fill nail holes with matching filler where exposed. Apply specified finish coats, including stains and paste fillers if any, to exposed surfaces where only sealer/prime coats were applied in shop.

3.3 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. Clean woodwork on exposed and semi exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION

SECTION 072100 - THERMAL INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Rigid board insulation in walls
 - 2. Concealed building insulation
 - 3. Exposed building insulation
 - 4. Sound insulation
 - 5. Expanding foam insulation

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for insulation products.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of building insulation through one source.
- B. Fire-Test-Response Characteristics: Provide insulation and related materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
 - 1. Surface-Burning Characteristics: ASTM E 84.
 - 2. Fire-Resistance Ratings: ASTM E 119.
 - 3. Combustion Characteristics: ASTM E 136.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
- B. Protect plastic insulation as follows:
 - 1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.

2. Protect against ignition at all times. Do not deliver plastic insulating materials to Project site before installation time.
3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Extruded-Polystyrene Rigid Board Insulation (XPS):
 - a. Tenneco Building Products.
 - b. Dow Chemical Company.
 - c. Owens Corning.
 2. Glass-Fiber Insulation:
 - a. CertainTeed Corporation.
 - b. Johns Manville Corporation.
 - c. Owens Corning.
 - d. Guardian Fiberglass.
 3. Expanding Foam (Closed Cell) Insulation:
 - a. Certainteed or equal.

2.2 INSULATING MATERIALS

- A. General: Provide insulating materials that comply with requirements and with referenced standards.
- B. Extruded-Polystyrene Rigid Board Insulation XPS, ASTM C 578, of type and density indicated below, with maximum flame-spread and smoke-developed indices of 75 and 450, respectively:
1. Type IV, 1.60 lb/cu. ft., unless otherwise indicated. Minimum thermal resistance aged R-value per inch shall be 5.0 at 75 degree F mean temperature.
 2. Provide the following R-values:
 - a. R-10, 2 inches thick, interior side of all exterior walls.
- C. Exterior Wall Thermal Insulation: Faced Mineral-Fiber Blanket Insulation: ASTM C 665, Type III (blankets with reflective membrane facing), Class A (membrane-faced surface with a flame spread of 25 or less); Category 1 (membrane is a vapor barrier), faced with, FSK foil-scrim vapor-retarder membrane on one face; consisting of fibers manufactured from glass.
1. Sound Insulation only: Nominal density of 1.0 lb/cu.ft., thermal resistivity of 3.7 deg F x h x sq.ft/Btu x in. at 75 deg F. Material combustion characteristics shall pass ATM E 136.

2. Provide the following R-values at metal stud locations for exterior wall thermal insulation:
 - a. 2-1/2 inch metal studs: R-11.
 - b. 3-5/8 inch metal studs: R-13.
 - c. 6 inch metal studs: R-19.
 - d. 8 inch metal studs: R-19.

D. Expanding Foam (Closed Cell) Insulation: In encapsulated locations of exterior door and window framing headers, studs and nestled sills.

1. Flame Spread less than 25.
2. Smoke developed less than 450 when tested in accordance with ASTM E-84.

2.3 AUXILIARY INSULATING MATERIALS

A. Adhesive for Bonding Insulation: Product with demonstrated capability to bond insulation securely to substrates indicated without damaging insulation and substrates.

2.4 INSULATION FASTENERS

A. Adhesively Attached, Spindle-Type Anchors: Plate welded to projecting spindle; capable of holding insulation of thickness indicated securely in position indicated with self-locking washer in place; and complying with the following requirements:

1. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. AGM Industries, Inc.; Series T TACTOO Insul-Hangers.
 - b. Eckel Industries of Canada; Stic-Klip Type N Fasteners.
 - c. Gemco; Spindle Type.
2. Plate: Perforated galvanized carbon-steel sheet, 0.030 inch thick by 2 inches square.
3. Spindle: Copper-coated, low carbon steel; fully annealed; 0.105 inch in diameter; length to suit depth of insulation indicated.
4. Anchor Adhesives:
 - a. AGM Industries, Inc.; TACTOO Adhesive.
 - b. Eckel Industries of Canada Limited; Stic-Klip Type S Adhesive.
 - c. Gemco; Tuff Bond Hanger Adhesive.

B. Anchor Adhesive: Product with demonstrated capability to bond insulation anchors securely to substrates indicated without damaging insulation, fasteners, and substrates.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for Sections in which substrates and related work are specified and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrates of substances harmful to insulations or vapor retarders, including removing projections capable of puncturing vapor retarders or of interfering with insulation attachment.

3.3 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and application indicated.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed at any time to ice and snow.
- C. Extend insulation in thickness indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Water-Piping Coordination: If water piping is located on inside of insulated exterior walls, coordinate location of piping to ensure that it is placed on warm side of insulation and insulation encapsulates piping.
- E. Apply single layer of insulation to produce thickness indicated, unless multiple layers are otherwise shown or required to make up total thickness.

3.4 INSTALLATION OF GENERAL BUILDING INSULATION

- A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.
- B. Seal joints between closed-cell (nonbreathing) insulation units by applying adhesive, mastic, or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with adhesive, mastic, or sealant as recommended by insulation manufacturer.
- C. Set vapor-retarder-faced units with vapor retarder to warm side of construction, unless otherwise indicated. Do not obstruct ventilation spaces, except for firestopping.
 - 1. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to surrounding construction to ensure airtight installation.
- D. Install mineral-fiber blankets in cavities formed by framing members according to the following requirements:
 - 1. Use blanket widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends.

2. Place blankets in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
3. For metal-framed wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically and support faced blankets by taping stapling flanges to flanges of metal studs.
4. With faced blankets having stapling flanges, lap blanket flange over flange of adjacent blanket to produce airtight installation after concealing finish material is in place.

3.5 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 072100

SECTION 075423 - THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

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:

1. Thermoplastic polyolefin (TPO) roofing system.
2. Roof insulation.
3. Cover board.

B. Related Requirements:

1. Section 061000 Rough Carpentry for wood nailers, curbs, blocking, and fire-retardant Plywood Sheathing; and for wood-based, structural-use roof deck panels.
2. Section 076200 – “Sheet Metal Flashing and Trim”
3. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.

1.3 DEFINITIONS

- A. TPO: Thermoplastic polyolefin
- B. Roofing Terminology: Definitions in ASTM D 1079 and glossary in NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to Work of this Section.

1.4 PREINSTALLATION MEETINGS

- A. Preliminary Roofing Conference: Before starting removal Work, conduct conference at Project Site. See 070150.19 for additional items.
 1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, air barrier Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 4. Review deck substrate requirements for conditions and finishes, including flatness and fastening.

5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
 - 1.
 2. For insulation and roof system component fasteners, include copy of FM Approvals' RoofNav listing.
- B. Shop Drawings: For roofing system. Include roof plans, sections, details, and attachments to other work, including the following:
 1. Layout and thickness of insulation.
 2. Base flashings and membrane termination details.
 3. Flashing details at penetrations.
 4. Tapered insulation layout, thickness, and slopes.
 5. Tie-in with adjoining air barrier.
- C. Samples for Selection for the following products:
 1. Roof membrane and flashings, match existing colors, including T-shaped side and end lap seam.
 2. Cover Board, match existing adjacent roofing system
 3. Roof Insulation, match existing adjacent roofing system (match match existing adjacent roofing system roof slope and R-value.
 4. Metal termination bars, match existing adjacent roofing system
 5. Roof attachment type, match existing adjacent roofing system
 6. Report showing the existing adjacent roofing system construction for comparison to submitted products.
- D. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with code mandated wind uplift performance requirements.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer & manufacturer.
- B. Manufacturer Certificates:
 1. Performance Requirement Certificate: Signed by roof membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.

- a. Submit evidence of compliance with performance requirements.
 2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.
 - C. Product Test Reports: For roof membrane and insulation, for tests performed by a qualified testing agency, indicating compliance with specified requirements.
 - D. Evaluation Reports: For components of roofing system, from ICC-ES.
 - E. Field Test Reports:
 - F. Field quality-control reports.
 - G. Sample Warranties: For manufacturer's special warranties.
- 1.7 CLOSEOUT SUBMITTALS
- A. Maintenance Data: For roofing system to include in maintenance manuals.
 - B. Certified statement from existing roof membrane manufacturer stating that existing roof warranty has not been affected by Work performed under this Section.
- 1.8 QUALITY ASSURANCE
- A. Manufacturer Qualifications: A qualified manufacturer that is listed in FM Approvals' for roofing system identical to that used for this Project.
 - B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.
 - C. Source Limitations: Obtain components including roof insulation, fasteners for membrane roofing system from same manufacturer as membrane roofing or approved by membrane roofing.
 - D. Exterior Fire-Test Exposure: ASTM E 108, Class A; for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.
- 1.9 DELIVERY, STORAGE, AND HANDLING
- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
 - B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.10 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.11 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.
 1. Special warranty includes roof membrane, base flashings, roof insulation, fasteners, cover boards, vapor barrier, roofing accessories and other components of membrane roofing system
 2. Warranty Period: 20 Twenty years from date of Substantial Completion.
- B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of roofing system such as roof membrane, base flashing, roof insulation, fasteners, cover boards, and vapor barrier for the following warranty period:
 1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed roofing system and flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roof system and flashings shall remain watertight.
- B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.

- C. Roofing System Design: Provide membrane roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure calculated according to ASCE/SEI 7.
 - 1. Uplift pressures as indicated on structural drawings.
- D. Provide membrane roofing, base flashings, and component materials that are equivalent with requirements in FM Approvals 4450 and FM Approvals 4470 as part of a membrane roofing system, and that are equivalent to those listed in FM Approvals' "RoofNav" for Class 1 or noncombustible construction, as applicable. Equivalent FM Fire/Windstorm Classification: Class 1A- 90.
 - 1. Hail Resistance: SH.
- E. Energy Performance: Provide roofing system that is listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.
- F. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- G. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.2 THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

- A. TPO Sheet: ASTM D 6878/D 6878M, Match existing Everguard membrane on adjacent roofing system so to maintain existing warranty.
 - 1. GAF Materials Corporation,
 - 2. Source Limitations: Obtain components for roofing system from roof membrane manufacturer.
 - 3. Thickness: Match Existing
 - 4. Exposed Face Color: Match Existing.

2.3 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.
 - 1. Adhesive and Sealants: Comply with VOC limits of authorities having jurisdiction.
 - 2. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - a. Plastic Foam Adhesives: 50 g/L.
 - b. Gypsum Board and Panel Adhesives: 50 g/L.
 - c. Multipurpose Construction Adhesives: 70 g/L.

- d. Fiberglass Adhesives: 80 g/L.
 - e. Single-Ply Roof Membrane Adhesives: 250 g/L.
 - f. Other Adhesives: 250 g/L.
 - g. Single-Ply Roof Membrane Sealants: 450 g/L.
 - h. Nonmembrane Roof Sealants: 300 g/L.
 - i. Sealant Primers for Nonporous Substrates: 250 g/L.
 - j. Sealant Primers for Porous Substrates: 775 g/L.
- B. Sheet Flashing: Manufacturer's standard unreinforced TPO sheet flashing, 55 mils (1.4 mm) thick, minimum, of same color as TPO sheet.
- C. Membrane-Coated Sheet Metal - As supplied by membrane Manufacturer.
- D. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- E. Roof Vents: As recommended by roof membrane manufacturer.
- 1. Size: Not less than 4-inch (100-mm) diameter.
- F. Bonding Adhesive: Manufacturer's standard, water based.
- G. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch (25 by 3 mm) thick; with anchors.
- H. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roofing components to substrate, and acceptable to roofing system manufacturer.
- I. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.
- J. Foam Backer Rod: Provide acceptable foam backer rod materials for expansion joints, install per manufacturers recommendation.

2.4 ROOF INSULATION

- A. General: Preformed roof insulation boards manufactured or approved by TPO roof membrane manufacturer, selected from manufacturer's standard sizes suitable for application, match thickness and slope of existing roof thicknesses and that are approved for use in FM Approvals' RoofNav-listed roof assemblies.
- B. Assumed, Contractor to Confirm and verify via submittal; Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 2, felt or glass-fiber mat facer on both major surfaces.
- 1. Average minimum R-value = Match Existing (Assume average R30)
- C. Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope of (match existing) inch per 12 inches, unless otherwise indicated.

1. Average minimum R-value = Match existing (Assume Average R-30)
- D. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

2.5 INSULATION ACCESSORIES

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with other roofing system components.
- B. Fasteners: Factory-coated steel fasteners with metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation and cover boards to substrate, and acceptable to roofing system manufacturer.
- C. Attachment method unknown (mechanically fastened vs adhered), Contractor to Confirm and verify via submittal. Method to be acceptable to roofing system manufacturer
- D. Assumed, Contractor to Confirm and verify via submittal. Cover Board: ASTM D1621, D 1622 and D 3273, closed-cell high density polyisocyanurate core with fiberglass facer, 1/2 inch (8 mm) thick.
 1. Products: Subject to compliance with requirements, provide the following:
 - a. Match Existing.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
 1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
 2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing system installation according to roofing system manufacturer's written instructions. Remove sharp projections.

- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

3.3 ROOFING INSTALLATION, GENERAL

- A. Install roofing system according to roofing system manufacturer's written instructions, equivalent FM Approvals' RoofNav assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.
- B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning Work on adjoining roofing.
- C. Install roof membrane and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition and to not void warranty for existing roofing system.

3.4 INSULATION INSTALLATION

- A. Match existing
- B. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.
- C. Comply with roofing system and roof insulation manufacturer's written instructions for installing roof insulation.
- D. Installation Over Metal Deck:
 - 1. Install base layer of insulation with joints staggered not less than 24 inches (610 mm) in adjacent rows and end joints staggered not less than 12 inches (305 mm) in adjacent rows.
 - a. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
 - b. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
 - c. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
 - d. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
 - e. Contractor to Verify, if existing roofing system is adhered or mechanically fastened. Adhere base layer of insulation to deck and/or vapor retarder according to manufacturer's recommendations for specified Windstorm Resistance Classification, as follows:
 - 1) Set insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place As per manufacturers recommendations. or
 - 2) Set insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place
As per manufacturers recommendations.

2. Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches (305 mm) from previous layer of insulation.
 - a. Staggered end joints within each layer not less than 24 inches (305 mm) in adjacent rows.
 - b. Install with long joints continuous and with end joints staggered not less than 12 inches (305 mm) in adjacent rows.
 - c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
 - d. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
 - e. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
 - f. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
 - g. Contractor to Verify, if existing roofing system is adhered or mechanically fastened. Adhere each layer of insulation to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:
 - 1) Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place or
 - 2) Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

3.5 INSTALLATION OF COVER BOARDS

- A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches (150 mm) in each direction.
 1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
 2. Cut and fit cover board tight to nailers, projections, and penetrations.
 3. Contractor to Verify, if existing roofing system is adhered or mechanically fastened. Adhere cover board to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:
 - a. Set cover board in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place or.
 - b. Set cover board in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

3.6 ADHERED ROOFING INSTALLATION (Contractor to Verify, if existing roofing system is adhered or mechanically fastened.)

- A. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.
- B. Unroll roof membrane and allow to relax before installing.

- C. Start installation of roofing in presence of roofing system manufacturer's technical personnel and Owner's testing and inspection agency.
- D. Accurately align roof membrane and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- E. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer, and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.
- F. Fleece-Backed Roof Membrane Adhesive: Apply to substrate at rate required by manufacturer, and install fabric-backed roof membrane.
- G. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeter of roofing.
- H. Apply roof membrane with side laps shingled with slope of roof deck where possible.
- I. Seams: Clean seam areas, overlap roof membrane, and hot-air weld side and end laps of roof membrane and sheet flashings, to ensure a watertight seam installation.
 - 1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roof membrane and sheet flashings.
 - 2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
 - 3. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.
- J. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.
 - 1. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.
- K. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

3.7 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.

- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.8 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and to inspect substrate conditions, surface preparation, roof membrane application, sheet flashings, protection, and drainage components, and to furnish reports to Architect.
- B. Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion, in presence of Architect, and to prepare inspection report.
- C. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.
- D. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.9 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing system, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.10 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
 - 1. Owner: **<Insert name of Owner>**.
 - 2. Address: **<Insert address>**.
 - 3. Building Name/Type: **<Insert information>**.
 - 4. Address: **<Insert address>**.
 - 5. Area of Work: **<Insert information>**.
 - 6. Acceptance Date: _____.
 - 7. Warranty Period: **<Insert time>**.
 - 8. Expiration Date: _____.

- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period Roofing Installer will, at Roofing Installer's own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:
1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. lightning;
 - b. peak gust wind speed exceeding 55 **mph (m/sec)** as per standard manufacturer's warranty language;
 - c. fire;
 - d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. vapor condensation on bottom of roofing; and
 - g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
 2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
 3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
 4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
 5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
 6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.

- 7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this _____ day of _____, _____.

- 1. Authorized Signature: _____.
- 2. Name: _____.
- 3. Title: _____.

END OF SECTION 075423

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SCOPE OF WORK

- A. Furnish and install roof related sheet metal work per the drawings and specifications, include all clips, sealant, fasteners, and joining to make weather and watertight.

1.3 CODE COMPLIANCE

- A. The installed copings and metal fascia shall comply with ANSI/SPRI ES-1 Standards and shall meet the following design wind pressures.
 - 1. Horizontal: 23 psf
 - 2. Vertical: 37 psf

1.4 QUALIFICATIONS

- A. Installer Qualifications:
 - 1. The installer of the roofing shall have been engaged in the business of installing the specified roofing system for not less than five (5) years and shall be certified by the roofing system Manufacturer in the layout and application of this system. The installer shall have successfully installed the specified system as follows:
 - a. At least once and:
 - b. At least five (5) years prior to Bid on this Project
 - 2. The crew shall be composed of experienced and skilled workers in this work.

1.5 QUALITY ASSURANCE

- A. Standards: Comply with latest edition of standards specified in this section and as referenced below:
 - 1. *ANSI / SPRI ES-1.*
 - 2. *Architectural Sheet Metal Manual*, Sheet Metal and Air Conditioning Contractors National Association, Fifth edition, 1993, as published by SMACNA.
 - 3. *The NRCA Roofing and Waterproofing Manual* – National Roofing Contractors Association.
 - 4. Published installation instructions from Manufacturers of selected products.
 - 5. *Annual Book of ASTM Standards*, Latest Revision – ASTM International.

- B. Qualifications of Installers: Use adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and methods needed for proper performance of the work in this section.
- C. In acceptance or rejection of the work of this section, the Owner will make no allowance for lack of skill on the part of the workers.

1.6 SUBMITTALS

- A. General: Comply with the provisions of the General Conditions of the Contract and Division 01 specification sections. Submittal schedule shall allow ample time for processing and approval prior to Pre-Roofing Coordination Meeting and start of roof system installation work.
- B. Drawings of all shop and Pre-Manufactured components to show type and gauge of metal used. Gauges of sheet metal specified in this section are minimums.
- C. Submit roof manufacturer's certification that metal fasteners and sealants are acceptable to roof manufacturer.
- D. Submit product information or material list noting fasteners, sealants, sealant primers, sealant tapes, and other required accessories.
- E. Submit color chart or physical samples for selection of prefinished metal color by the Design Professional.
- F. For fasteners that are to penetrate into, or through, pressure preservative treated lumber use stainless steel, hot dipped galvanized coated or provide certification from manufacturer that coating is compatible with preservative used for wood treatment.
- G. Cut sheets on all products.
- H. Submit copies of all required warranties.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Use all means to protect the materials of this section before, during, and after installation and to protect the work and materials of all other trades. Roof surfaces shall be protected from damage at all times.
- B. Deliver only new materials to the job site. Materials to be stored in such a manner as to be protected from rain, snow, or inclement weather. When storing materials on the roof, do not overstress the deck.
- C. In the event of damage, immediately make all repairs and replacements to the approval of the Owner and at no additional cost to the Owner.
- D. Securely store and protect materials designated for removal and re-installation as part of the re-roofing work.

1.8 SCHEDULING

- A. Work is to be performed on a daily basis with each section completed before progressing to the next

day's work, unless specifically directed otherwise by the Design Professional.

- B. Substantial Completion of sheet metal flashing and trim work will be defined as the contractually required and weathertight installation of all specified roof preparation, insulation, field membrane, flashings, counterflashings, sheet metal, fasteners and caulking.
- C. All new sheet metal work shall be closely coordinated with the installation of the new roofing membrane.
- D. Sheet metal shall be installed directly after roofing work such that roofing terminations shall not be left unprotected by metal.
- E. Once roofing is started, the roofing application must be Substantially Complete within the time period required by the Contract. All punch list items must be complete prior to Final Completion.

1.9 WARRANTY

- A. The Roofing Contractor shall warrant all materials and workmanship for a period of two (2) years from the date of acceptance of the completed work by the Owner. The Roofing Contractor shall make good any defects in materials or workmanship that may develop during the two-year period by repairing or replacing such defects at his own expense without cost to the Owner. Roofing Contractor shall use the form entitled "Sheet Metal Contractor's Warranty" provided in this Section.
- B. 20-year warranty for Kynar 500/Hylar 5000 metal finish.
- C. 25-year standard warranty from copper Manufacturer covering defects in materials and pre-patinated finish.
- D. All copings and metal fascia must meet ES-1 Code requirements of design wind speed of 90 mph.

PART 2 - PRODUCTS

2.1 GENERAL

- A. All materials used on this project shall be compatible with the existing conditions and with each other.
- B. No product shall contain any asbestos or asbestos-related products.

2.2 MATERIALS

- A. Sheet metal components, metal types, finishes, gauges/thicknesses, joint types, and ANSI/SPRI ES-1 compliance data are specified in the detail drawings.
- B. Where sheet metal is required and no material or gauge is indicated on the drawings, provide the highest quality and gauge commensurate with the referenced standards.
- C. Contractor shall use gauges or thicknesses listed in the schedule or as prescribed in the referenced standards for specific girths, whichever is greater.
- D. Continuous clip shall be fabricated with material one gauge heavier than connecting component.

2.3 MATERIAL SPECIFICATIONS

A. Aluminum:

1. The aluminum alloy and temper for sheet metal work shall be 3003-H14.
2. Specification References:
 - a. Fed. Spec. QQ-A-250d, Aluminum and Aluminum Alloy, Plate and Sheet.
 - b. ASTM B209 Specification for Aluminum Alloy, Sheet and Plate.
 - c. ASTM B221 Specification for Aluminum Extrusions.

B. Copper:

1. Specification References:
 - a. Fed. Spec. QQ-C-576b, Copper Flat Products (Plate, Bar, Sheet and Strip).
 - b. ASTM B370, Copper Sheet and Strip for Building Construction.
 - c. ASTM B152 Specification for Copper Sheet, Strip, Plate and Rolled Bar.
2. Copper metal work shall be soldered using 50/50 solder and neutralize flux after soldering.

C. Galvanized Steel:

1. Galvanized steel shall be G-90 material.
2. Specifications References:
 - a. Fed. Spec. AA-S-775d.
 - b. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-coated (Galvanized) or Zinc-Iron Alloy - Coated (Galvannealed) by the Hot Dip Process.

D. Stainless Steel:

1. Specification References:
 - a. Fed. Spec. QQ-S-766C, Steel Plates, Sheets, and Strip, Corrosion Resisting.
 - b. ASTM - A167 Specification for Stainless and Heat Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
2. Finish shall be selected by the Design Professional.

E. Kynar Prefinished Steel:

1. Approved Products:
 - a. PAC-CLAD by Peterson Aluminum Corporation.
 - b. TUFFCLAD by Clad-Tex Metals.
 - c. Color Klad by Vincent Metals.
 - d. UNA-CLAD by Firestone Building Products.
2. Color shall be selected by the Design Professional from the Manufacturer's standard colors.

2.4 CARBON STEEL FASTENERS

- A. All fasteners shall be carbon steel with corrosion-resistant coating, unless otherwise noted. Fasteners shall show no more than 15% red rust corrosion after 30 cycles of Kesternich testing.
- B. Masonry / Concrete Fasteners:
1. Fasteners shall be threaded or expansion type as required by site conditions.
 2. Threaded fasteners shall be corrosion-resistant with hex washer head.
 3. Expansion fasteners shall be zinc-alloy jacketed with stainless steel drive pin and mushroom head (nylon or plastic anchors are not approved).
 4. Corrosion-resistant, watertight, EPDM sealing washer shall be supplied for either threaded or expansion type fasteners.
 5. Fasteners shall be approved by FM Global.
 6. Approved Products:
 - a. Tapcon Hex Washer Head with Blue Climaseal or White UltraShield Coating by ITW Buildex.
 - b. Tapper with Perma-Seal Coating by Powers Fasteners, Inc.
 - c. Metal Hit Anchor by Hilti.
 - d. Zamac Hammer-Screw with Carbon Steel Drive Screw by Powers Fasteners, Inc.
 - e. Masonry Anchor by OMG
 - f. Approved equal
 7. Fasteners to be nominal 1/4" thickness minimum and of sufficient length to penetrate the masonry/concrete 1".
- C. Steel / Wood Fasteners:
1. Corrosion-resistant, self-drilling, self-tapping screw with hex washer head for exposed fastening.
 2. Corrosion-resistant, watertight, EPDM sealing washer for exposed fastening.
 3. Approved Products - Steel Fasteners:
 - a. Tek Screw with Climaseal Coating by ITW Buildex.
 - b. Dekfast Zac Anchor with Sentri XP Coating by SFS intec, Inc.
 - c. Owner approved equal.
 4. Approved Products -Wood Fasteners:
 - a. TruGrip GT with Climaseal Coating by ITW Buildex.
 - b. Dekfast Zac Anchor with Sentri XP Coating by SFS intec, Inc.
 - c. Owner approved equal.
 5. Fasteners to be nominal 1/4" thickness minimum and of sufficient length to penetrate the steel 1/2" or into wood minimum 1".
 6. 1-1/4" x 11-gauge, galvanized, ring shank roofing nails shall be used for concealed fastening into wood.

2.5 STAINLESS STEEL FASTENERS

- A. All fasteners shall be Type 304 or Series 400 stainless steel, or zinc alloy in composition.
- B. Masonry / Concrete Fasteners:

1. Fasteners shall be threaded or expansion type as required by site conditions.
2. Threaded fasteners shall be corrosion-resistant with hex washer head.
3. Expansion fasteners shall be zinc alloy with stainless steel nail and mushroom head (nylon or plastic anchors are not approved).
4. Stainless steel, watertight, EPDM sealing washer shall be supplied for either threaded or expansion type fasteners.
5. Fasteners shall be approved by FM Global.
6. Fasteners to be nominal 1/4" thickness minimum and of sufficient length to penetrate the masonry/concrete 1".
7. Approved Products:
 - a. Scots Tapcon Hex Washer Head with Silver Climaseal Coating by ITW Buildex.
 - b. Metal Hit Anchor by Hilti.
 - c. Zamac Hammer Screw with Stainless Steel Drive Screw by Powers Fasteners, Inc.
 - d. Masonry Anchor by OMG.
 - e. Approved Equal.

C. Steel / Wood Fasteners:

1. Corrosion-resistant, stainless steel, self-drilling, self-tapping screw with hex washer head for exposed fastening.
2. Stainless steel, watertight, EPDM sealing washer for exposed fastening.
3. Approved Products - Steel Fasteners.
 - a. 12 - 14 Scots Tek Screw with Climaseal Coating by ITW Buildex.
 - b. Approved Equal.
4. Approved Products - Wood Fasteners:
 - a. 17 - 14 Scots Tek Screw with Climaseal Coating by ITW Buildex.
 - b. Approved Equal.
5. Fasteners to be of sufficient length to penetrate the steel 1/2" or into wood minimum 1"
6. 1-1/4" x 11-gauge, stainless steel, ring shank, roofing nails shall be used for concealed fastening into wood.

2.6 OTHER MATERIALS

A. Membrane Closure / Cover:

1. Sheet waterproofing underlayment at parapets, expansion joints, etc., shall be 36-mil (minimum) single-ply material and associated seaming materials. Sheet waterproofing material shall be compatible and approved by the primary roofing membrane Manufacturer.

B. Sealants and Related Accessories:

1. General: Except as specifically otherwise directed by the Owner's Representative, use only the type of sealants described in this section.
 - a. Silyl-Termination Polyether (Hybrid) Sealant.
 - b. Approved Products:
 - 1) Sonolastic 150 VLM by BASF Building Systems.
 - 2) Approved Equal

2. Cleaner:
 - a. Industrial solvent recommended by the sealant Manufacturer, such as Isopropyl Alcohol, Naphtha, Mineral Spirits, Xylol, Toluene, MEK, or Manufacturer-supplied cleaner.
 3. Primer:
 - a. General: Use only those primers that are specifically recommended for this installation by the caulking Manufacturer.
 - b. Primer shall be one of the following:
 - 1) Primer 733 BASF Building Systems.
 - 2) Approved Equal.
 4. Backer Rod:
 - a. General: Use only those backup materials that are specifically recommended for this installation by the sealant Manufacturer and that are non-absorbent, non-staining, and non-gassing when punctured. Backup materials must be 1½ times the width of the joint.
 - b. Backer rod shall be one of the following:
 - 1) Soft Backer-Rod by BASF Building Systems.
 - 2) Approved Equal.
 5. High Temperature Resistant Sealant:
 - a. Trade Mate[®] Hi-Temp Silicone Sealant by Dow Corning Corporation.
 - b. Approved Equal.
- C. Sealant Tape:
1. Permanently elastic isobutylene tripolymer tape or isobutylene isoprene copolymer tape that will bond to galvanized steel; aluminum; siliconized polyester, and polyvinyl flouride painted metals; as well as wood, concrete, etc., 1/8" x 1" nominal cross section, meeting Federal Specification TT-C 1796A, Type II, Class B, with minimum 20 psi adhesive tensile strength according to ASTM C 907, with a service temperature range of -60° F to 212° F.
 - a. Approved Products.
 - 1) Sika Lastomer - 95 Gray by Sika Corp.
 - 2) Sika Lastomer - 93 Black by Sika Corp.
 - 3) Sika Lastomer - 65 White by Sika Corp.
- D. Gutter and Downspout Fabrication:
1. SMACNA Architectural Sheet Metal Manual, Material gauge and profile shall be as indicated on the Drawings. The finish shall match existing gutters or shall be as indicated on the Drawings. Each gutter joint will be cleaned, primed and covered with a 6" wide strip of Eternabond glued in place in accordance with manufacturer's recommendations and the edges sealed with recommended seam caulk.
 2. Downspouts to be 22 gauge.
 3. Size for rainfall intensity determined by a storm occurrence of one in five years in accordance with SMACNA Architectural Sheet Metal Manual. Material and gauge shall match existing gutters.
 4. Accessories: Profiled to suit gutters and downspouts.

5. Splash Pads: If required, match existing
 6. Downspout Boots: Steel
 - a. At grade level and areas accessible to the public: Eight feet high, 16 gauge primed steel and painted to match existing downspouts.
 - b. Areas of downspouts inaccessible to the public: Two feet high, 16 gauge primed steel.
 7. Seal metal joints.
- E. Solder:
1. ASTM B 32, flux type and alloy composition as required for use with metals to be soldered.
- F. Rivets:
1. Use copper, copper alloy, bronze, brass, or stainless steel for copper and stainless steel for stainless steel and aluminum alloy, galvanized steel or stainless steel for galvanized steel.
 2. Not less than 1/8" diameter.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions under which work of this section will be installed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.2 FABRICATION

- A. Sheet metal shall be formed accurately to sheet shapes as indicated on the drawings and in conformance with details on the approved shop drawings. Contractor shall be responsible for all dimensions.
- B. Counterflashing shall be furnished where indicated on drawings. Form flashing sections not less than 8'-0" in length, unless otherwise approved prior to fabrication and installation. Counterflashing shall overlap base flashing a minimum of 3".
- C. Coping caps and / or metal fascia shall be furnished where indicated on drawings. Form coping and metal fascia in sections not less than 10'-0" in length, unless otherwise approved prior to fabrication and installation. Metal fascia shall extend 1/2" below fascia board.
- D. Where loose lock lap joints are specified on the drawings, adjacent sections of metal shall overlap a minimum of 3".
- E. Where joint covers are specified on the drawings, they shall be slightly larger than the primary component to ensure a proper fit. Edges of joint covers shall be tipped toward primary component to form a compression seal.
- F. Miter all inside and outside corner joints in coping caps, metal fascia, and expansion joints. Joints adjacent to inside and outside corners shall be placed exactly 24" each direction from the corner, unless otherwise approved prior to fabrication and installation.

- G. Break counterflashing, coping cap, or metal fascia sections where they cross building expansion joints, if applicable.
- H. Horizontal flanges of metal fascia, soil pipe leads, pitch pans, lower flanges, pipe jacks, etc., shall be 4" minimum with rounded corners.
- I. All exposed edges of cut sheet metal shall be folded back on concealed surfaces.
- J. Form, fabricate, and install all sheet metal so as to adequately provide for expansion and contraction in the finished work.
- K. Where a continuous clip is specified on the drawings, the primary component shall be continuously crimped along the bottom edge of the clip.
- L. Fabricate radial coping/ metal fascia in uniform length sections using radial components with finished edges.

3.3 DISSIMILAR METALS

- A. Dissimilar materials in contact, which are subject to electrolysis, shall be protected against such action prior to installation. Protective materials shall not be visible after installation. Protect metals using coatings recommended by Manufacturer, or separated using felt or EPDM membrane.

3.4 WEATHERPROOFING

- A. Finish all sheet metal watertight and weathertight where so required.
- B. Where lap seams do not have a joint cover, lap 3" minimum according to pitch.
- C. Make all lap seams in the direction of the water flow.
- D. Where roof membrane is not already carried over top of parapet wall, expansion joint blocking, etc., the top of each is to be covered with sheet waterproofing membrane (or the flashing membrane material if the roof system is a single-ply). Unless otherwise shown on the drawings, the membrane is to be fastened only on sides as required to hold it in place and make the wall or curb watertight until sheet metal cover can be installed over it. All laps in the membrane material shall be seamed watertight per the Manufacturer's published installation instructions.

3.5 JOINTS

- A. Join parts with rivets or sheet metal screws where necessary for strength or stiffness.
- B. Provide suitable watertight expansion joints for all sheet metal as required for proper installation in accordance with the schedule of roof related sheet metal and detail drawings.
- C. Sealant application shall be neatly and thoroughly performed for a watertight seal. Sealant shall be installed within all loose lock joints under joint cover plates, and in other locations shown on the drawings. All exposed caulking joints shall be dry tooled to the profile shown on the detail drawings. If required, Contractor shall build custom tools on job site to provide the specified profile(s).

- D. Surfaces to receive sealant shall be thoroughly cleaned as recommended by the sealant Manufacturer. All bitumen coating materials, roof cement, adhesive residue, rust, old caulking and/or other contaminants shall be removed down to the substrate to which sealant bonding is intended.
- E. All surfaces to receive sealant shall be primed initially with the sealant Manufacturer's recommended primer.
- F. Provide solder/weld joints where noted on the drawings.

3.6 FASTENING

- A. Only stainless steel fasteners shall be used to fasten aluminum components, where specified.
- B. Only stainless steel fasteners shall be used to fasten copper components, where specified.
- C. Secure metal as per detail drawings. Do not in any case install exposed fasteners on a horizontal plane, unless specifically shown on a particular detail drawing.
- D. All clips and cleats are to be fastened 6" o.c., unless otherwise noted on the drawings.
- E. On the roof facing side, copings are to be fastened 12" o.c. with EPDM washered fasteners, unless noted otherwise on the drawings.
- F. Do not fasten adjacent coping, counterflashing, or metal fascia sections together at laps or at joint covers, so as to limit expansion/contraction ability. Fasten through center of joint cover through butt joint gap between primary component sections.
- G. Embedded metal flanges are to be fastened 3" o.c., staggered.
- H. The specified spacing for all fasteners in perimeter metal work shall be reduced by a factor of two in the corner zones of each roof section. Corner zones shall be as calculated based upon the applicable version of ASCE-7.
- I. For concealed fastening into wood, use annular ring shank roofing nails.
- J. For fastening into concrete, use masonry/concrete anchors with EPDM washers. Use only metal anchors. Plastic anchors shall not be used.
- K. For exposed fastening into wood, use screws with EPDM washers. Deformed shank nails shall not be used.
- L. Ensure that fasteners are not overdriven such that EPDM washer damage results. Remove and replace all such damaged fasteners, using oversized fasteners.

3.7 PROTECTION

- A. Roof surfaces and flashing shall be adequately protected to prevent damage during the installation of metal work. The Contractor shall repair, at no cost to the Owner, any materials damaged.

3.8 CLEANUP

- A. Debris from sheet metal work shall be frequently removed from building site as it accumulates.
- B. Leave job site absolutely clean at completion of work, and properly dispose of all construction debris such as metal trimmings, fasteners, rivet nails, caulk tube ends, etc.

SECTION 078413 – PENETRATION FIRESTOPPING

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 through-penetration firestop systems for penetrations through the following fire-resistance-rated assemblies, including both empty openings and openings containing penetrating items:
 - 1. Roofs.
 - 2. Walls and partitions.
 - 3. Smoke barriers.

1.3 PERFORMANCE REQUIREMENTS

- A. General: For the following constructions, provide through-penetration firestop systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of assembly penetrated.
 - 1. Fire-resistance-rated load-bearing walls, including partitions, with fire-protection-rated openings.
 - 2. Fire-resistance-rated non-load-bearing walls, including partitions, with fire-protection-rated openings.
 - 3. Fire-resistance-rated roof assemblies.
- B. For through-penetration firestop systems exposed to view, provide products with flame-spread ratings of less than 25 and smoke-developed ratings of less than 450, as determined per ASTM E 84.

1.4 SUBMITTALS

- A. Product Data: For each type of through-penetration firestop system product indicated.
- B. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- C. Product Certificates: Signed by manufacturers of through-penetration firestop system products certifying that products furnished comply with requirements.
- D. Product Test Reports: From a qualified testing agency indicating through-penetration firestop system complies with requirements, based on comprehensive testing of current products.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed through-penetration firestop systems similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Source Limitations: Obtain through-penetration firestop systems, for each kind of penetration and construction condition indicated, from a single manufacturer.
- C. Fire-Test-Response Characteristics: Provide through-penetration firestop systems that comply with the following requirements and those specified in "Performance Requirements" Article:
 - 1. Through-penetration firestop systems are identical to those tested per ASTM E 814. Provide rated systems complying with the following requirements:
 - a. Through-penetration firestop systems correspond to those indicated by reference to through-penetration firestop system designations listed by UL in "Fire Resistance Directory."

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver through-penetration firestop system products to Project site in original, unopened containers or packages with intact and legible manufacturers' labels identifying product and manufacturer; date of manufacture; lot number; shelf life, if applicable; qualified testing and inspecting agency's classification marking applicable to Project; curing time; and mixing instructions for multicomponent materials.
- B. Store and handle materials for through-penetration firestop systems to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install through-penetration firestop systems when ambient or substrate temperatures are outside limits permitted by through-penetration firestop system manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.
- B. Ventilate through-penetration firestop systems per manufacturer's written instructions by natural means or, where this is inadequate, forced-air circulation.

1.8 COORDINATION

- A. Coordinate construction of openings and penetrating items to ensure that through-penetration firestop systems are installed according to specified requirements.
- B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate through-penetration firestop systems.
- C. Do not cover up through-penetration firestop system installations that will become concealed behind other construction until Owner's representative and building inspector, if required by authorities having jurisdiction, have examined each installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, through-penetration firestop systems that may be incorporated into the Work include, but are not limited to, those systems indicated.
- B. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. DAP Inc.
 - 2. Hilti Construction Chemicals, Inc.
 - 3. Instant Firestop Mfg. Inc.
 - 4. 3M Fire Protection Products.
 - 5. Tremco.
 - 6. United States Gypsum Company.

2.2 FIRESTOPPING, GENERAL

- A. Compatibility: Provide through-penetration firestop systems that are compatible with one another, with the substrates forming openings, and with the items, if any, penetrating through-penetration firestop systems, under conditions of service and application, as demonstrated by through-penetration firestop system manufacturer based on testing and field experience.
- B. Accessories: Provide components for each through-penetration firestop system that are needed to install fill materials and to comply with "Performance Requirements" Article. Use only components specified by through-penetration firestop system manufacturer and approved by the qualified testing and inspecting agency for firestop systems indicated. Accessories include, but are not limited to, the following items:
 - 1. Permanent forming/damming/backing materials, including the following:
 - a. Slag-/rock-wool-fiber insulation.
 - b. Sealants used in combination with other forming/damming/backing materials to prevent leakage of fill materials in liquid state.
 - c. Fire-rated form board.
 - d. Fillers for sealants.
 - 2. Temporary forming materials.
 - 3. Substrate primers.
 - 4. Collars.
 - 5. Steel sleeves.

2.3 MIXING

- A. For those products requiring mixing before application, comply with through-penetration firestop system manufacturer's written instructions for accurate proportioning of materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other items or procedures needed to produce products of uniform quality with optimum performance characteristics for application indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning: Clean out openings immediately before installing through-penetration firestop systems to comply with written recommendations of firestop system manufacturer and the following requirements:
 - 1. Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of through-penetration firestop systems.
 - 2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with through-penetration firestop systems. Remove loose particles remaining from cleaning operation.
 - 3. Remove laitance and form-release agents from concrete.
- B. Priming: Prime substrates where recommended in writing by through-penetration firestop system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.
- C. Masking Tape: Use masking tape to prevent through-penetration firestop systems from contacting adjoining surfaces that will remain exposed on completion of Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from firestop system materials. Remove tape as soon as possible without disturbing firestop system's seal with substrates.

3.3 THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATION

- A. General: Install through-penetration firestop systems to comply with "Performance Requirements" Article and firestop system manufacturer's written installation instructions and published drawings for products and applications indicated.
- B. Install forming/damming/backing materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.
- C. Install fill materials for firestop systems by proven techniques to produce the following results:
 - 1. Fill voids and cavities formed by openings, forming materials, accessories, and penetrating items as required to achieve fire-resistance ratings indicated.
 - 2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
 - 3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.4 CLEANING AND PROTECTION

- A. Clean off excess fill materials adjacent to openings as Work progresses by methods and with cleaning materials that are approved in writing by through-penetration firestop system manufacturers and that do not damage materials in which openings occur.
- B. Provide final protection and maintain conditions during and after installation that ensure through-penetration firestop systems are without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated through-penetration firestop systems immediately and install new materials to produce through-penetration firestop systems complying with specified requirements.

3.5 THROUGH-PENETRATION FIRESTOP SYSTEM SCHEDULE

- A. Where UL-classified systems are indicated, they refer to the alpha-alpha-numeric designations listed in UL's "Fire Resistance Directory" under product Category XHEZ.
- B. Firestop Systems for Metallic Pipes, Conduit, or Tubing: Comply with the following:
 - 1. UL-Classified Systems: C-AJ.
 - 2. Type of Fill Materials: One or more of the following:
 - a. Latex sealant.
 - b. Silicone sealant.
 - c. Intumescent putty.
 - d. Mortar.
- C. Firestop Systems for Nonmetallic Pipe, Conduit, or Tubing: Comply with the following:
 - 1. UL-Classified Systems: C-AJ.
 - 2. Type of Fill Materials: One or more of the following:
 - a. Latex sealant.
 - b. Silicone sealant.
 - c. Intumescent putty.
 - d. Intumescent wrap strips.
 - e. Firestop device.
- D. Firestop Systems for Electrical Cables: Comply with the following:
 - 1. UL-Classified Systems: C-AJ.
 - 2. Type of Fill Materials: One or more of the following:
 - a. Latex sealant.
 - b. Silicone sealant.
 - c. Intumescent putty.
 - d. Silicone foam.
- E. Firestop Systems for Cable Trays: Comply with the following:
 - 1. UL-Classified Systems: C-AJ.
 - 2. Type of Fill Materials: One or more of the following:

- a. Latex sealant.
 - b. Intumescent putty.
 - c. Silicone foam.
 - d. Pillows/bags.
- F. Firestop Systems for Insulated Pipes: Comply with the following:
1. UL-Classified Systems: C-AJ.
 2. Type of Fill Materials: One or more of the following:
 - a. Latex sealant.
 - b. Intumescent putty.
 - c. Silicone foam.
 - d. Intumescent wrap strips.
- G. Firestop Systems for Miscellaneous Electrical Penetrants: Comply with the following:
1. UL-Classified Systems: C-AJ.
 2. Type of Fill Materials: One or more of the following:
 - a. Latex sealant.
 - b. Intumescent putty.
 - c. Mortar.
- H. Firestop Systems for Miscellaneous Mechanical Penetrations: Comply with the following:
1. UL-Classified Systems: C-AJ.
 2. Type of Fill Materials: One or both of the following:
 - a. Latex sealant.
 - b. Mortar.
- I. Firestop Systems for Groupings of Penetrations: Comply with the following:
1. UL-Classified Systems: C-AJ.
 2. Type of Fill Materials: One or more of the following:
 - a. Latex sealant.
 - b. Mortar.
 - c. Intumescent wrap strips.
 - d. Firestop device.
 - e. Intumescent composite sheet.

END OF SECTION 078413

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes, but is not limited to, joint sealants for the following applications. Also see Joint Sealant Schedule, Article 3.7.

- 1. Interior joints in the following vertical surfaces and horizontal nontraffic surfaces:

- a. Perimeter joints of exterior openings where indicated.
- b. Tile control and expansion joints.
- c. Perimeter joints between interior wall surfaces and frames of interior doors and windows.
- d. Joints between plumbing fixtures and adjoining walls, floors, and counters.
- e. Other joints as indicated.
- f. STC rated joints.

- 2. Interior joints in the following horizontal traffic surfaces:

- a. Isolation joints in cast-in-place concrete slabs.
- b. Control and expansion joints in tile flooring.
- c. Other joints as indicated.

- B. Expansion Control Seal.

1.3 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

1.4 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- C. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch wide joints formed between two 6-inch long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- D. Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

1.5 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of joint sealant and accessory, signed by product manufacturer.
- B. Qualification Data: For manufacturer and installer.
- C. Preconstruction Field Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on preconstruction testing specified in "Quality Assurance" Article.
 1. Complete field-adhesion-test log with recorded results.
- D. Product Test Reports: Based on comprehensive testing by manufacturer of product formulations performed by a qualified testing agency, indicating that sealants comply with requirements.
- E. Warranties: Specimen copy of manufacturer's warranties specified in this Section for review.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized Installer who is approved or licensed for installation of elastomeric sealants required for this Project.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.
- C. Product Testing: Obtain test results for "Product Test Reports" Paragraph in "Submittals" Article from a qualified testing agency based on testing current sealant formulations within a 36-month period preceding the commencement of the Work.
 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated, as documented according to ASTM E 548.
- D. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to Project joint substrates as follows:
 1. Locate test joints where indicated on Project or, if not indicated, as directed by Architect.
 2. Conduct field tests for each application indicated below:
 - a. Each type of elastomeric sealant and joint substrate indicated.
 - b. Each type of nonelastomeric sealant and joint substrate indicated.
 3. Notify Architect seven days in advance of dates and times when test joints will be erected.
 4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.
 - a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193.

- 1) 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.
 - b. Manufacturer's technical representative shall write up test results and submit a copy on manufacturer's letterhead to Owner and Architect within 10 work days.
 5. Report whether sealant in joint connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
 6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.
- E. Preinstallation Conference: Conduct conference at Project site.
1. Meet with Installer, and installers whose work interfaces with or affects joint sealers.
 2. Review methods and procedures related to joint sealers.
 3. Examine substrate conditions for compliance with requirements, including joint configuration and installation tolerances.
 4. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant, Owner, and Architect.

1.7 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.
 2. When joint substrates are wet.
 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
 4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.8 WARRANTY

- A. Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
1. Warranty Period: One year from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
1. Warranty Period: Two years from date of Substantial Completion.
- C. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:

1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
2. Disintegration of joint substrates from natural causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.
4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles. Submit equal or better products for approval under provisions of Substitutions requirements Section 01 6000.

2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range to match as close as possible an adjacent surface.

2.3 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- C. Suitability for Immersion in Liquids: Where elastomeric sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247 and qualify for the length of exposure indicated by reference to ASTM C 920 for Class 1 or 2. Liquid used for testing sealants is deionized water, unless otherwise indicated.
- D. Suitability for Contact with Food: Where elastomeric sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.
- E. Single-Component Neutral-Curing Silicone Sealant:
 1. Type and Grade: S (single component) and NS (nonsag).
 2. Class: 25.
 3. Use Related to Exposure: NT (nontraffic).
- F. Single-Component Acid-Curing Silicone Sealant:
 1. Type and Grade: S (single component) and NS (nonsag).

2. Class: 25.
3. Use Related to Exposure: NT (nontraffic).

G. Single-Component Mildew-Resistant Neutral-Curing Silicone Sealant:

1. Type and Grade: S (single component) and NS (nonsag).
2. Class: 25.
3. Use Related to Exposure: NT (nontraffic).

H. Multicomponent Pourable Urethane Sealant:

1. Type and Grade: Type 1, Grade M (multicomponent) and P (pourable).
2. Class: A.
3. Use Related to Exposure: T (traffic).

2.4 LATEX JOINT SEALANTS

- A. Latex Sealant: Comply with ASTM C 834, Type P, Grade NF.

2.5 ACOUSTICAL SEALANTS

- A. Latex Sealant: Nonsag, paintable, nonstaining complying with ASTM C834.

2.6 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330; any of the following types: type C (closed-cell material with a surface skin), type O (open-cell material), or type B (bicellular material with a surface skin), approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
- C. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F. Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and to otherwise contribute to optimum sealant performance.
- D. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.7 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates

and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
 - a. Concrete.
 - 3. Remove laitance and form-release agents from concrete.
 - 4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - a. Metal.
 - b. Glass.
 - c. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

3.4 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
 - 1. Extent of Testing: Test completed sealant joints as follows:
 - a. Perform 2 tests on different buildings for each type of sealant and joint substrate. If results are different, repeat.
 - 2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab in Appendix X1 in ASTM C 1193.
 - a. For joints with dissimilar substrates, verify adhesion to each substrate separately; do this by extending cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 - 3. Inspect joints for complete fill, for absence of voids, and for joint configuration complying with specified requirements. Record results in a field-adhesion-test log.
 - 4. Inspect tested joints and report on the following:
 - a. 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 type of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.
 - b. Whether sealants filled joint cavities and are free of voids.
 - c. Whether sealant dimensions and configurations comply with specified requirements.

- 5. 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 fill, sealant configuration, and sealant dimensions.
 - 6. 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 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 off 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 joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.7 JOINT SEALANT SCHEDULE

JOINT SEALANT SCHEDULE	
JOINT SEALERS	DESCRIPTION OF JOINT CONSTRUCTION AND LOCATION WHERE SEALANT IS TYPICALLY APPLIED*
Multi-Part Pourable Urethane Sealant	Exterior and interior joints in horizontal surfaces of concrete; between metal, concrete, mortar, and masonry.
One-Part Neutral Cure Silicone Sealant	Exterior and interior joints in vertical surfaces of concrete, masonry, metal, mortar; interior and exterior perimeter joints of hollow metal frames in exterior walls; and exterior overhead joints.
One-Part Acid-Curing Silicone Sealant	Exposed joints within glazed skylight framing systems, and aluminum entrance framing systems.
One-Part Mildew-Resistant Silicone Sealant	Interior joints of ceramic tile, plastic laminate, and metal in toilet rooms, locker rooms, utility closets, and similar wet spaces.
One-Part Latex Acrylic Sealant (Non-Sag)	Interior joints in field-painted surfaces at perimeter of hollow metal door and window frames; in gypsum drywall, and all other interior joints not indicated otherwise.
Acoustical Sealant	Interior exposed and concealed joints in STC rated partitions.
* Install sealant indicated in joints fitting descriptions and locations listed above and as indicated on Drawings.	

END OF SECTION 079200

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

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:
 - 1. Hollow-metal work.

1.3 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

1.4 COORDINATION

- A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.5 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, core descriptions, fire-resistance ratings and finishes.
- B. Shop Drawings: Include the following:
 - 1. Elevations of each door type.
 - 2. Details of doors, including vertical- and horizontal-edge details and metal thicknesses.
 - 3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
 - 4. Locations of reinforcement and preparations for hardware.
 - 5. Details of each different wall opening condition.
 - 6. Details of anchorages, joints, field splices, and connections.
 - 7. Details of accessories.
 - 8. Details of moldings, removable stops, and glazing.

9. Details of conduit and preparations for power, signal, and control systems.

- C. Schedule: Provide a schedule of hollow-metal work prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final Door Hardware Schedule.

1.7 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each type of hollow-metal door and frame assembly, for tests performed by a qualified testing agency.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow-metal work palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
1. Provide additional protection to prevent damage to factory-finished units.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow-metal work vertically under cover at Project site with head up. Place on minimum 4-inch-high wood blocking. Provide minimum 1/4-inch space between each stacked door to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Amweld International, LLC.
 2. Ceco Door Products; an Assa Abloy Group company.
 3. Steelcraft; an Ingersoll-Rand company.
 4. Curries Company; an Assa Abloy Group company.
- B. Source Limitations: Obtain hollow-metal work from single source from single manufacturer.

2.2 REGULATORY REQUIREMENTS

- A. Fire-Rated Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.
1. Smoke- and Draft-Control Assemblies: Provide an assembly with gaskets listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.

2.3 INTERIOR HOLLOW METAL DOORS AND FRAMES

- A. Construct interior doors and frames to comply with the standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- B. Commercial Doors and Frames: NAAMM-HMMA 861.
 - 1. Physical Performance: Level A (Extra Heavy Duty) according to SDI A250.4.
 - 2. Doors:
 - a. Type: As indicated in the Door and Frame Schedule.
 - b. Thickness: 1-3/4 inches.
 - c. Face: Uncoated, cold-rolled steel sheet, minimum thickness of 0.042 inch.
 - d. Edge Construction: Continuously welded with no visible seam.
 - e. Core: Steel stiffened.
 - 3. Frames:
 - a. Construction: Face welded.
 - b. See E2/AF101A for HM Frame with Custom Back Bend a Tile Locations.
 - 4. Exposed Finish: Prime.

2.4 FRAME ANCHORS

- A. Jamb Anchors:
 - 1. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch thick.
 - 2. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch- diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.

2.5 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.
- D. Frame Anchors: ASTM A 879/A 879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.
 - 1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.
- E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

- F. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.
- G. Glazing: Comply with requirements in Section 088000 "Glazing."

2.6 FABRICATION

- A. Fabricate hollow-metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for metal thickness. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.
- B. Hollow-Metal Doors:
 - 1. Fire Door Cores: As required to provide fire-protection ratings indicated.
 - 2. Vertical Edges for Single-Acting Doors: Bevel edges 1/8 inch in 2 inches
 - 3. Top Edge Closures: Close top edges of doors with inverted closures, except provide flush closures at exterior doors of same material as face sheets.
 - 4. Bottom Edge Closures: Close bottom edges of doors with end closures or channels of same material as face sheets.
 - 5. Exterior Doors: Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.
 - 6. Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted or as required to comply with published listing of qualified testing agency.
- C. Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
 - 1. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 - 2. Jamb Anchors: Provide number and spacing of anchors as follows:
 - a. Stud-Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
 - 1) Three anchors per jamb up to 60 inches high.
 - 2) Four anchors per jamb from 60 to 90 inches high.
 - 3) Five anchors per jamb from 90 to 96 inches high.
 - 4) Five anchors per jamb plus one additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
 - b. Postinstalled Expansion Type: Locate anchors not more than 6 inches from top and bottom of frame. Space anchors not more than 26 inches o.c.
 - 3. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
 - b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.
- D. Fabricate concealed stiffeners and edge channels from either cold- or hot-rolled steel sheet.

- E. Hardware Preparation: Factory prepare hollow-metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.
 - 1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
 - 2. Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.
- F. Stops and Moldings: Provide stops and moldings around glazed lites and louvers where indicated. Form corners of stops and moldings with mitered hairline joints.
 - 1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow-metal work.
 - 2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
 - 3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.
 - 4. Provide loose stops and moldings on inside of hollow-metal work.
 - 5. Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.

2.7 STEEL FINISHES

- A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
 - 1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.
- C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

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.
- B. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.3 INSTALLATION

- A. General: Install hollow-metal work plumb, rigid, properly aligned, and securely fastened in place. Comply with Drawings and manufacturer's written instructions.
- B. Hollow-Metal Frames: Install hollow-metal frames of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.
 - 1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
 - a. At fire-rated openings, install frames according to NFPA 80.
 - b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
 - c. Install door silencers in frames.
 - d. Remove temporary braces necessary for installation only after frames have been properly set and secured.
 - e. Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
 - 2. Metal-Stud Partitions and Masonry Walls: Solidly fill spray foam insulation inside frames. Spray Foam Insulation Low expansion rate, quick-cure, polyurethane foam. Basis of Design: Dow; Froth-Pak: greatstuff.dow.com.
 - 3. Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
 - a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.
- C. Hollow-Metal Doors: Fit hollow-metal doors accurately in frames, within clearances specified below. Shim as necessary.
 - 1. Non-Fire-Rated Steel Doors:
 - a. Between Door and Frame Jambs and Head: 1/8 inch plus or minus 1/32 inch.
 - b. Between Edges of Pairs of Doors: 1/8 inch to 1/4 inch plus or minus 1/32 inch.
 - c. At Bottom of Door: 5/8 inch plus or minus 1/32 inch.
 - d. Between Door Face and Stop: 1/16 inch to 1/8 inch plus or minus 1/32 inch.
 - 2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
 - 3. Smoke-Control Doors: Install doors and gaskets according to NFPA 105.
- D. Glazing: Comply with installation requirements in Section 088000 "Glazing" and with hollow-metal manufacturer's written instructions.
 - 1. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c. and not more than 2 inches o.c. from each corner.

3.4 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.
- B. Remove spray foam insulation and bonding material from hollow-metal work immediately after installation.
- C. 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.
- D. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

END OF SECTION

SECTION 081416 - FLUSH WOOD DOORS

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:
 - 1. Solid-core doors with wood-veneer faces.
 - 2. Factory finishing flush wood doors.
 - 3. Factory fitting flush wood doors to frames and factory machining for hardware.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of door. Include details of core and edge construction and trim for openings. Include factory-finishing specifications.
- B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:
 - 1. Dimensions and locations of blocking.
 - 2. Dimensions and locations of mortises and holes for hardware.
 - 3. Dimensions and locations of cutouts.
 - 4. Undercuts.
 - 5. Requirements for veneer matching.
 - 6. Doors to be factory finished and finish requirements.
 - 7. Fire-protection ratings for fire-rated doors.
- C. Samples for Initial Selection: For factory-finished doors.

1.5 INFORMATIONAL SUBMITTALS

- A. Sample Warranty: For special warranty.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body and is a certified participant in AWI's Quality Certification Program.

- B. Vendor Qualifications: A vendor that is certified for chain of custody by an FSC-accredited certification body.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Package doors individually in plastic bags or cardboard cartons
- C. Mark each door on top and bottom rail with opening number used on Shop Drawings.

1.8 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during remainder of construction period.

1.9 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section.
 - b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.
 - 2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
 - 3. Warranty Period for Solid-Core Interior Doors: Life of installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Eggers Industries.
 - 2. Graham Wood Doors; an Assa Abloy Group company.
 - 3. Mohawk Flush Doors, Inc.
 - 4. Marshfield.
 - 5. Vancouver Door Company.
- B. Source Limitations: Obtain flush wood doors from single manufacturer.

2.2 FLUSH WOOD DOORS, GENERAL

- A. Quality Standard: In addition to requirements specified, comply with AWI's, AWMAC's, and WI's "Architectural Woodwork Standards."
- B. Fire-Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.
 - 1. Oversize Fire-Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide certification by a qualified testing agency that doors comply with standard construction requirements for tested and labeled fire-rated door assemblies except for size.
 - 2. Temperature-Rise Limit: At vertical exit enclosures and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F above ambient after 30 minutes of standard fire-test exposure.
 - 3. Cores: Provide core specified or mineral core as needed to provide fire-protection rating indicated.
 - 4. Pairs: Provide fire-retardant stiles that are listed and labeled for applications indicated without formed-steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.
- C. Smoke- and Draft-Control Door Assemblies: Listed and labeled for smoke and draft control, based on testing according to UL 1784.
- D. Edge Construction: At hinge stiles, provide manufacturer's standard laminated-edge construction with improved screw-holding capability and split resistance and with outer stile matching face veneer.

2.3 VENEER-FACED DOORS FOR TRANSPARENT FINISH

- A. Interior Solid-Core Doors:
 - 1. Grade: Premium, with Grade AA faces.
 - 2. Species: White maple to be selected from manufactures full line or veneers.
 - 3. Cut: Plain sliced (flat sliced).
 - 4. Match between Veneer Leaves: Book match.
 - 5. Assembly of Veneer Leaves on Door Faces: Balance match.
 - 6. Pair and Set Match: Provide for doors hung in same opening or separated only by mullions.
 - 7. Room Match: Match door faces within each separate room or area of building. Corridor-door faces do not need to match where they are separated by 10 feet or more.
 - 8. Core: Either glued wood stave or structural composite lumber.
 - 9. Construction: five plies, either bonded or nonbonded construction.

2.4 FABRICATION

- A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
 - 1. Comply with NFPA 80 requirements for fire-rated doors.
- B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, BHMA-156.115-W, and hardware templates.
 - 1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.

2. Metal Astragals: Factory machine astragals and formed-steel edges for hardware for pairs of fire-rated doors.
- C. Openings: Factory cut and trim openings through doors.
1. Light Openings: Trim openings with moldings of material and profile indicated.
 2. Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Section 088000 "Glazing."

2.5 FACTORY FINISHING

- A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
1. Finish faces, all four edges, edges of cutouts, and mortises.
- B. Factory finish doors.
- C. Transparent Finish:
1. Grade: Premium.
 2. Finish: AWI's, AWMAC's, and WI's "Architectural Woodwork Standards" System 10, UV curable, water based or System 11, catalyzed polyurethane.
 3. Staining: As selected by Architect from manufacturer's full range.
 4. Effect: Semifilled finish, produced by applying an additional finish coat to partially fill the wood pores.
 5. Sheen: Satin.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and installed door frames, with Installer present, before hanging doors.
1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
 2. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Hardware: For installation, see Section 087100 "Door Hardware."
- B. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.
1. Install fire-rated doors according to NFPA 80.
 2. Install smoke- and draft-control doors according to NFPA 105.
- C. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

- D. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

3.3 ADJUSTING

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 081416

SECTION 083113 - ACCESS DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Access doors and frames for walls and ceilings.

1.3 SUBMITTALS

- A. Product Data: For each type of access door and frame indicated. Include construction details, fire ratings where required, materials, individual components and profiles, and finishes.
- B. Shop Drawings: Show fabrication and installation details of access doors and frames for each type of substrate. Include plans, elevations, sections, details, and attachments to other work.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain access door(s) and frame(s) through one source from a single manufacturer.
- B. Fire-Rated Access Doors and Frames: Where required provide units complying with NFPA 80 that are identical to access door and frame assemblies tested for fire-test-response characteristics per the following test method and that are listed and labeled by UL or another testing and inspecting agency acceptable to authorities having jurisdiction:
 - 1. UL 10B for vertical access doors and frames.
 - 2. UL 263 for horizontal access doors and frames.
- C. Size Variations: Obtain Architect's acceptance of manufacturer's standard-size units, which may vary slightly from sizes indicated.

1.5 COORDINATION

- A. Verification: Determine specific locations and sizes for access doors needed to gain access to concealed plumbing, mechanical, electrical, or other concealed work, and indicate in the schedule specified in "Submittals" Article 1.3.
 - 1. Reflected Ceiling Plans and Interior Elevations do not show access panels. If terminal units, sprinkler valves, or any other similar mechanical, plumbing, or electrical equipment requiring access is located behind gypsum board, a properly sized access panel shall be provided with exact location subject to review by Architect.

PART 2 - PRODUCTS

2.1 STEEL MATERIALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
 - 1. ASTM A 123/A 123M, for galvanizing steel and iron products.
- B. Steel Sheet: Electrolytic zinc-coated, ASTM A 591/A 591M with cold-rolled steel sheet substrate complying with ASTM A 1008/A 1008M, Commercial Steel (CS), exposed.
- C. Steel Finishes: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
 - 1. Surface Preparation for Steel Sheet: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, or other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."
 - 2. Factory-Primed Finish: Apply shop primer immediately after cleaning and pre-treating.

2.2 STAINLESS-STEEL MATERIALS

- A. Stainless-Steel Sheet, Strip, Plate, and Flat Bars: ASTM A 666, Type 304. Remove tool and die marks and stretch lines or blend into finish.

2.3 ACCESS DOORS AND FRAMES FOR WALLS AND CEILINGS

- A. Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, or are equal to, the following;
 - 1. Babcock-Davis; A Cierra Products Co.
 - 2. Acudor Products Inc.
- B. Flush Access Doors and Frames with 1 inch flange:
 - 1. Locations: Wall and ceiling surfaces on any finish painted material.
 - 2. Door: Minimum 14 gauge sheet metal.
 - 3. Frame: Minimum 16 gauge sheet metal and a 1 inch flange with drywall bead for gypsum board surfaces.
 - 4. Hinges: Spring-loaded, flush continuous piano hinge or concealed pivoting rod.
 - 5. Latch: Cam latch or self-latching bolt operated by screwdriver with interior release.
 - 6. Lock: None.
 - 7. Size: 24 inch square in ceilings if service personnel must penetrate to adequately perform service; otherwise, size as appropriate.
- C. Satin Stainless Steel with Finished Frame:
 - 1. Locations: Ceramic, Porcelain, Stone and/or Glass Tile
 - 2. Door: Minimum 14 gauge.
 - 3. Frame: Minimum 16 gauge
 - 4. Hinges: Spring-loaded, flush continuous piano hinge or concealed pivoting rod.

5. Latch: Stainless Steel Cam latch or self-latching bolt operated by screwdriver with interior release.
6. Lock: None.
7. Size: 24 inch square in ceilings if service personnel must penetrate to adequately perform service; otherwise, size as appropriate.

2.4 FABRICATION

- A. General: Provide access door and frame assemblies manufactured as integral units ready for installation.
- B. Metal Surfaces: For metal surfaces exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.
- C. Doors and Frames: Grind exposed welds smooth and flush with adjacent surfaces. Furnish attachment devices and fasteners of type required to secure access panels to types of supports indicated.
 1. Provide edge trim for gypsum board securely attached to perimeter of frames.
 2. Provide mounting holes in frames for attachment of units to metal framing.
- D. Latching Mechanisms: Furnish number required to hold doors in flush, smooth plane when closed.
 1. For flush panel doors, provide screwdriver access sleeves for each latching device. Furnish plastic grommets and install in holes cut through finish.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with manufacturer's written instructions for installing access doors and frames.
- B. Set frames accurately in position and attach securely to supports with plane of face panels aligned with adjacent finish surfaces.
- C. Install doors flush with adjacent finish surfaces or recessed to receive finish material.

3.2 ADJUSTING AND CLEANING

- A. Adjust doors and hardware after installation for proper operation.
- B. Remove and replace doors and frames that are warped, bowed, or otherwise damaged.

END OF SECTION 083113

SECTION 084113 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

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 an integral exterior aluminum storefront framing system with fixed windows and attached sunshades, and a matching interior aluminum storefront framing system. The system shall include the following:
 - 1. Exterior storefront framing.
 - 2. Exterior manual-swing entrance doors and door-frame units.
 - 3. Interior storefront framing with manual-swing entrance doors.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site to verify requirements, substrate conditions, manufacturer's installation instructions, and manufacturer's warranty requirements.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For aluminum-framed entrances and storefronts. Include plans, elevations, sections, full-size details, and attachments to other work.
 - 1. Include details of provisions for assembly expansion and contraction and for draining moisture occurring within the assembly to the exterior.
 - 2. Include full-size isometric details of each vertical-to-horizontal intersection of aluminum-framed entrances and storefronts, showing the following:
 - a. Joinery, including concealed welds.
 - b. Anchorage.
 - c. Expansion provisions.
 - d. Glazing.
 - e. Flashing and drainage.
 - 3. Show connection to and continuity with adjacent thermal, weather, air, and vapor barriers.
- C. Samples for color verification: For units with factory-applied color finishes.

1.5 INFORMATIONAL SUBMITTALS

- A. Sample Warranties: For special warranties.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
- B. Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.
 - 1. Do not change intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If changes are proposed, submit comprehensive explanatory data to Architect for review.

1.7 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of aluminum-framed entrances and storefronts that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including, but not limited to, excessive deflection.
 - b. Noise or vibration created by wind and thermal and structural movements.
 - c. Deterioration of metals and other materials beyond normal weathering.
 - d. Water penetration through fixed glazing and framing areas.
 - e. Failure of operating components.
 - 2. Warranty Period: Two years from date of Substantial Completion.
- B. Special Finish Warranty: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - 2. Warranty Period: Ten years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Comply with performance requirements specified, as determined by testing of aluminum-framed entrances and storefronts representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.
1. Aluminum-framed entrances and storefronts shall withstand movements of supporting structure including, but not limited to, story drift, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
 2. Failure also includes the following:
 - a. Thermal stresses transferring to building structure.
 - b. Glass breakage.
 - c. Noise or vibration created by wind and thermal and structural movements.
 - d. Loosening or weakening of fasteners, attachments, and other components.
 - e. Failure of operating units.
 3. Storefront System Performance Requirements:
 - a. Wind loads: Provide framing system; include anchorage, capable of withstanding wind load design pressures calculated according to the requirements of authorities having jurisdiction or the American Society of Civil Engineers' ASCE 7, "Minimum Design Loads for Buildings and Other Structures," 6.4.2, "Analytical Procedure," whichever is more stringent.
 - b. Air Infiltration: The test specimen shall be tested in accordance with ASTM E 283. Air infiltration rate shall not exceed 0.06 cfm/ft² at a static air pressure differential of 6.24 psf.
 - c. Water Resistance: The test specimen shall be tested in accordance with ASTM E 331. There shall be no leakage at a minimum static air pressure differential of 8 psf as defined in AAMA 501.
 - d. Uniform Load: A static air design load of 20 psf shall be applied in the positive and negative direction in accordance with ASTM E 330. There shall be no deflection in excess of L/175 of the span of any framing member. At a structural test load equal to 1.5 times the specified design load, no glass breakage or permanent set in the framing members in excess of 0.2% of their clear spans shall occur.
 - e. Thermal Transmittance (U-factor): When tested to AAMA Specification 1503, the thermal transmittance (U-factor) shall not be more than: 0.46 (low-e).
 - f. Condensation Resistance (CRF): When tested to AAMA Specification 1503, the condensation resistance factor shall not be less than: Glass to Exterior – 60frame and 63glass (low-e).

2.1 MANUFACTURERS

- A. Basis-of-Design Product for Exterior Storefront Windows: The design shall be based on the "Trifab VG 451T" as manufactured by Kawneer Company, Inc., 555 Guthridge Court, Technology Park/Atlanta, Norcross, GA 30092; Telephone (770) 449-5555. Framing member shall be a thermal break design with a profile of 2 inches x 4-1/2 inches nominal dimensions, center plane exterior glazed; screw spline assembly. Provide the necessary steel support framing within the storefront framing members as required to handle the attached Trifab SunShade, as indicated below. Provide manufacturer's standard high-performance sill flashing.
- B. Basis-of-Design Product for Interior Storefront Windows: The design shall be based on the "Trifab VG-451" center glazed system as manufactured by Kawneer Company, Inc., 555 Guthridge Court, Technology Park/Atlanta, Norcross, GA 30092; Telephone (770) 449-5555. Framing member profile shall be 2 inches x 4-1/2 inches nominal dimensions, center plane glazed; screw spline assembly.
- C. Subject to compliance with requirements as specified here-in, provide the named product, or a comparable product by one of the following or approved equal:

1. EFCO Corporation.
3. International Aluminum Corporation; US Aluminum.
4. Vistawall.
4. Tubelite Architectural Systems.

- D. Source Limitations: Obtain all components of aluminum-framed entrance and storefront system, including framing venting windows, sunshades, and accessories, from single manufacturer.

2.2 FRAMING

- A. Framing Members: Manufacturer's extruded- or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads.

1. Construction: Thermally broken.
2. Glazing Plane: Center.

- B. Backer Plates: Manufacturer's standard, continuous backer plates for framing members, if not integral, where framing abuts adjacent construction.

- C. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

1. Reinforce storefront framing and entrance doors at all areas to receive door hardware, such as closers and door operators with additional steel plate for maximum screw holding.

- D. Materials:

1. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
 - a. Sheet and Plate: **ASTM B 209 (ASTM B 209M)**.
 - b. Extruded Bars, Rods, Profiles, and Tubes: **ASTM B 221 (ASTM B 221M)**.
 - c. Extruded Structural Pipe and Tubes: ASTM B 429/B 429M.
 - d. Structural Profiles: ASTM B 308/B 308M.
2. Steel Reinforcement: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM, and prepare surfaces according to applicable SSPC standard.
 - a. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
 - b. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.
 - c. Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M.

2.3 ENTRANCE DOOR SYSTEMS

- A. Entrance Doors: Manufacturer's standard glazed entrance doors for manual-swing operation.

1. Door Construction: 1-3/4-inch (44.5-mm) overall thickness, with minimum 0.125-inch- (3.2-mm-) thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods.
2. Door Design: Wide stile; 5-inch (127-mm) nominal width.

3. Glazing Stops and Gaskets: Square snap-on, extruded-aluminum stops and preformed gaskets.

2.4 ENTRANCE DOOR HARDWARE

- A. Entrance Door Hardware: Hardware not specified in this Section is specified in Section 087100

2.5 GLAZING

- A. Glazing: Comply with Section 088000 "Glazing."
- B. Glazing Gaskets: Manufacturer's standard sealed-corner pressure-glazing system of black, resilient elastomeric glazing gaskets, setting blocks, and shims or spacers.
- C. Glazing Sealants: As recommended by manufacturer.

2.6 ACCESSORIES

- A. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.
 1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration.
 2. Reinforce members as required to receive fastener threads, included at all door hardware such as closers and door operators.
- B. Anchors: Three-way adjustable anchors with minimum adjustment of 1 inch (25.4 mm) that accommodate fabrication and installation tolerances in material and finish compatible with adjoining materials and recommended by manufacturer.
 1. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts complying with ASTM A 123/A 123M or ASTM A 153/A 153M requirements.
- C. Concealed Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials.
- D. Bituminous Paint: Cold-applied asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos, formulated for 30-mil (0.762-mm) thickness per coat.
- E. Metal Trim: Manufacturer's standard interior sill, aluminum trim.

2.7 FABRICATION

- A. Form or extrude aluminum shapes before finishing.
- B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.
- C. Fabricate components that, when assembled, have the following characteristics:
 1. Profiles that are sharp, straight, and free of defects or deformations.
 2. Accurately fitted joints with ends coped or mitered.

3. Physical and thermal isolation of glazing from framing members.
 4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
 5. Provisions for field replacement of glazing from exterior.
 6. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
- D. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.
- E. Structural-Sealant-Glazed Framing Members: Include accommodations for using temporary support device to retain glazing in place while structural sealant cures.
- F. Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware.
1. At exterior doors, provide compression weather stripping at fixed stops.
- G. Entrance Doors: Reinforce doors as required for installing entrance door hardware.
1. At pairs of exterior doors, provide sliding-type weather stripping retained in adjustable strip and mortised into door edge.
 2. At exterior doors, provide weather sweeps applied to door bottoms.
- H. Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, drill, and tap for factory-installed entrance door hardware before applying finishes.
- I. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.8 FINISHES

- A. Factory Finishing: AA-M12C22A41, AAMA611, Architectural Class 1 Clear Anodic Coating.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Site Verification of Conditions: Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions. Verify openings are sized to receive storefront system and sill plate is level in accordance with manufacturer's acceptable tolerances.
1. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

3.2 PREPARATION

- A. Prepare surfaces that are in contact with structural sealant according to sealant manufacturer's written instructions to ensure compatibility and adhesion. Preparation includes, but is not limited to, cleaning and priming surfaces.

3.3 INSTALLATION

A. General:

1. Comply with manufacturer's written instructions.
2. Do not install damaged components.
3. Fit joints to produce hairline joints free of burrs and distortion.
4. Rigidly secure nonmovement joints.
5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.
6. Seal perimeter and other joints watertight unless otherwise indicated.

B. Metal Protection:

1. Where aluminum is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with materials recommended by manufacturer for this purpose or by installing nonconductive spacers.
2. Where aluminum is in contact with concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

C. Set continuous sill members and flashing in full sealant bed as specified in Section 7 "Joint Sealants" to produce weathertight installation.

D. Install components plumb and true in alignment with established lines and grades.

E. Install glazing as specified in Section 088000 "Glazing."

F. Entrance Doors: Install doors to produce smooth operation and tight fit at contact points.

1. Exterior Doors: Install to produce weathertight enclosure and tight fit at weather stripping.
2. Field-Installed Entrance Door Hardware: Install surface-mounted entrance door hardware according to entrance door hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.

G. Mockups: Build mockups to demonstrate aesthetic effects and to set quality standards for materials and execution.

1. Install framing and accessories in mockups as shown in the Drawings.

3.4 ERECTION TOLERANCES

A. Erection Tolerances: Install aluminum-framed entrances and storefronts to comply with the following maximum tolerances:

1. Plumb: 1/8 inch in 10 feet (3.2 mm in 3 m); 1/4 inch in 40 feet (6.35 mm in 12.2 m).
2. Level: 1/8 inch in 20 feet (3.2 mm in 6 m); 1/4 inch in 40 feet (6.35 mm in 12.2 m).
3. Alignment:
 - a. Where surfaces abut in line or are separated by reveal or protruding element up to 1/2 inch (12.7 mm) wide, limit offset from true alignment to 1/16 inch (1.6 mm).
 - b. Where surfaces are separated by reveal or protruding element from 1/2 to 1 inch (12.7 to 25.4 mm) wide, limit offset from true alignment to 1/8 inch (3.2 mm).
 - c. Where surfaces are separated by reveal or protruding element of 1 inch (25.4 mm) wide or more, limit offset from true alignment to 1/4 inch (6 mm).

4. Location: Limit variation from plane to 1/8 inch in 12 feet (3.2 mm in 3.6 m); 1/2 inch (12.7 mm) over total length.

3.5 PROTECTION AND CLEANING

- A. Protection: Protect installed product's finish surfaces from damage during construction. Protect aluminum storefront systems from damage from grinding and polishing compounds, plaster, lime, acid, cement, or other harmful contaminants.
- B. Cleaning: Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance. Remove construction debris from project site and legally dispose of debris.

END OF SECTION 084113

SECTION 084523 - FIBERGLASS-SANDWICH-PANEL ASSEMBLIES

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 the insulated translucent sandwich panel system and accessories, factory unitized, as shown and specified. Work includes providing and installing:
 - 1. Flat factory prefabricated structural insulated translucent sandwich panels
 - 2. Aluminum installation system
 - 3. Aluminum sill flashing
 - 4. Thermal break windows
- B. Related Sections:
 - 1. Section 076200 "Sheet Metal Flashing and Trim"
 - 2. Section 079200 "Joint Sealants"
 - 3. Section 088000 "Glazing"

1.3 SUBMITTALS

- A. Submit manufacturer's product data. Include construction details, material descriptions, profiles and finishes of components.
- B. Submit shop drawings. Include elevations and details.
- C. Submit manufacturer's color charts showing the full range of colors available for factory-finished aluminum.
 - 1. When requested, submit samples for each exposed finish required, in same thickness and material indicated for the work and in size indicated below. If finishes involve normal color variations, include sample sets consisting of two or more units showing the full range of variations expected.
 - a. Sandwich panels: 14" x 28" units
 - b. Factory finished aluminum: 5" long sections
 - c. For each type of exposed finish for framing members
- D. Submit Installer Certificate, signed by installer, certifying compliance with project qualification requirements.
- E. Submit product reports from a qualified independent testing agency indicating each type and class of panel system complies with the project performance requirements, based on comprehensive testing of current products. Previously completed reports will be acceptable if for current manufacturer and indicative of products used on this project.
 - 1. Reports required are:
 - a. International Building Code Evaluation Report

- b. Flame Spread and Smoke Developed (UL 723) – Submit UL Card
- c. Burn Extent (ASTM D 635)
- d. Color Difference (ASTM D 2244)
- e. Impact Strength (UL 972)
- f. Bond Tensile Strength (ASTM C 297 after aging by ASTM D 1037)
- g. Bond Shear Strength (ASTM D 1002)
- h. Beam Bending Strength (ASTM E 72)
- i. Insulation U-Factor (NFRC 100)
- j. NFRC System U-Factor Certification (NFRC 700)
- k. Solar Heat Gain Coefficient (NFRC or Calculations)
- l. Condensation Resistance Factor (AAMA 1503)
- m. Air Leakage (ASTM E 283)
- n. Structural Performance (ASTM E 330)
- o. Water Penetration (ASTM E 331)
- p. 1200°F Fire Resistance (SWRI)
- q. Performance for Windows (AAMA/WDMA/CSA-101/I.S.2/A440-05)
- r. LEED Credits
- s. Daylight Autonomy

1.4 QUALITY ASSURANCE

A. Manufacturer's Qualifications

1. Material and products shall be manufactured by a company continuously and regularly employed in the manufacture of specified materials for a period of at least ten consecutive years and which can show evidence of those materials being satisfactorily used on at least six projects of similar size, scope and location. At least three of the projects shall have been in successful use for ten years or longer.
2. Panel system must be listed by an ANSI accredited Evaluation Service, which requires quality control inspections and fire, structural and water infiltration testing of sandwich panel systems by an accredited agency.
3. Quality control inspections shall be conducted at least once each year and shall include manufacturing facilities, sandwich panel components and production sandwich panels for conformance with AC177 “Translucent Fiberglass Reinforced Plastic (FRP) Faced Panel Wall, Roof and Skylight Systems” as issued by the ICC-ES.

- B. Installer’s Qualifications: Installation shall be by an experienced installer, which has been in the business of installing specified panel systems for at least two consecutive years and can show evidence of satisfactory completion of projects of similar size, scope and type.

1.5 PERFORMANCE REQUIREMENTS

- A. The manufacturer shall be responsible for the configuration and fabrication of the complete unitized panel system.

1. When requested, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
2. Standard panel system shall have less than 0.01 cfm/ft² air leakage by ASTM E 283 at 6.24 PSF (50 mph) and no water penetration by ASTM E 331 at 15 PSF; and structural testing by ASTM E 330.
3. Structural Loads; Provide system capable of handling the following loads:
 - a. Positive Wind Load: 12.41psf Ultimate
 - b. Negative Wind Load: -21.07psf Ultimate
 - c. Seismic Design Criteria: Seismic Design Category A

1.6 DELIVERY STORAGE AND HANDLING

- A. Deliver panel system, components and materials in manufacturer's standard protective packaging.
- B. Store panels on the long edge; several inches above the ground, blocked and under cover in accordance with manufacturer's storage and handling instructions.

1.7 WARRANTY

- A. Submit manufacturer's and installer's written warranty agreeing to repair or replace panel system work, which fails in materials or workmanship within two years of the date of substantial completion. Failure of materials or workmanship shall include leakage, excessive deflection, deterioration of finish on metal in excess of normal weathering, defects in accessories, insulated translucent sandwich panels and other components of the work.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. The basis for this specification is for products manufactured by Kalwall Corporation. Other manufacturers may bid this project provided they comply with all of the performance requirements of this specification and submit evidence thereof. Listing other manufacturers' names in this specification does not constitute approval of their products or relieve them of compliance with all the performance requirements contained herein.
- B. Kalwall Corporation, Tel: (800) 258-9777 – Fax: (603) 627-7905 – Email: info@kalwall.com

2.2 PANEL COMPONENTS

A. Face Sheets

1. Translucent faces: Manufactured from glass fiber reinforced thermoset resins, formulated specifically for architectural use.
 - a. Thermoplastic (e.g. polycarbonate, acrylic) faces are not acceptable.
 - b. Face sheets shall not deform, deflect or drip when subjected to fire or flame.
2. Interior face sheets:
 - a. Flame spread: Underwriters Laboratories (UL) listed, which requires periodic unannounced retesting, with flame spread rating no greater than 50 and smoke developed no greater than 250 when tested in accordance with UL 723.
 - b. Burn extent by ASTM D 635 shall be no greater than 1”.
3. Exterior face sheets:
 - a. Color stability: Full thickness of the exterior face sheet shall not change color more than 3 CIE Units DELTA E by ASTM D 2244 after 5 years outdoor South Florida weathering at 5° facing south, determined by the average of at least three white samples with and without a protective film or coating to ensure long-term color stability. Color stability shall be unaffected by abrasion or scratching.
 - b. Strength: Exterior face sheet shall be uniform in strength, impenetrable by hand held pencil and repel an impact minimum of 70 ft. lbs. without fracture or tear when impacted by a 3-1/4” diameter, 5 lb. free-falling ball per UL 972.

4. Appearance:
 - a. Exterior face sheets: Smooth .070" thick and crystal in color.
 - b. Interior face sheets: Smooth .045" thick and white in color.
 - c. Face sheets shall not vary more than $\pm 10\%$ in thickness and be uniform in color.
- B. Grid Core
 1. I-beam Thermal break: Minimum 1", thermoset fiberglass composite.
- C. Laminate Adhesive
 1. Heat and pressure resin type adhesive engineered for structural sandwich panel use, with minimum 25-years field use. Adhesive shall pass testing requirements specified by the International Code Council "Acceptance Criteria for Sandwich Panel Adhesives".
 2. Minimum tensile strength of 750 PSI when the panel assembly is tested by ASTM C 297 after two exposures to six cycles each of the aging conditions prescribed by ASTM D 1037.
 3. Minimum shear strength of the panel adhesive by ASTM D 1002 after exposure to four separate conditions:
 - a. 50% Relative Humidity at 68° F: 540 PSI
 - b. 182° F: 100 PSI
 - c. Accelerated Aging by ASTM D 1037 at room temperature: 800 PSI
 - d. Accelerated Aging by ASTM D 1037 at 182° F: 250 PSI

2.3 PANEL CONSTRUCTION

- A. Provide sandwich panels of flat fiberglass reinforced translucent face sheets laminated to a grid core of mechanically interlocking I-beams. The adhesive bonding line shall be straight, cover the entire width of the I-beam and have a neat, sharp edge.
 1. Thickness: 2-3/4"
 2. Light transmission: 13%
 3. Solar heat gain coefficient 0.18.
 4. Panel U-factor by NFRC certified laboratory: 2-3/4" thermally broken grid .14
 5. Complete insulated panel system shall have NFRC certified U-factor of 0.19.
 6. Grid pattern: Nominal size 10" spacing; pattern Verti-Kal
- B. Standard panels shall deflect no more than 1.9" at 30 PSF in 10' 0" span without a supporting frame by ASTM E 72.
- C. Standard panels shall withstand 1200° F fire for minimum one hour without collapse or exterior flaming.
- D. Thermally broken panels: Minimum Condensation Resistance Factor of 80 by AAMA 1503 measured on the bond line.

2.4 BATTENS AND PERIMETER CLOSURE SYSTEM

- A. Closure system: Thermally Broken extruded aluminum 6063-T6 and 6063-T5 alloy and temper clamp-tite screw type closure system.
- B. Sealing tape: Manufacturer's standard, pre-applied to closure system at the factory under controlled conditions.
- C. Fasteners: 300 series stainless steel screws for aluminum closures, excluding final fasteners to the building.

D. Finish:

1. Manufacturer's factory applied finish, which meets the performance requirements of AAMA 2604. Color to be selected from manufacturer's standards.

2.5 WINDOWS

A. Windows shall be designed specifically for inclusion in the translucent panel unit wall system and factory unitized to panels.

1. Units shall be of the following type(s):

- a. Fixed lite

B. Performance: Windows shall pass or exceed requirements of AAMA/WDMA/CSA-101/I.S.2/A440-05 (08).

1. **HC-2000 fixed widows: F-AW80**; shall pass requirements at 120 psf uniform structural load with air infiltration $<.01$ CFM/FT² at 6.24 psf and no water penetration at 12 psf.

C. Construction: All window frame members shall be of heavy gauge 6063-T5 extruded aluminum with a thermal break. Frame sections shall be coped and joined by stainless steel screws at each corner. All joints exposed to the weather shall be sealed with an elastic compound. All openings shall be double weather stripped using T-slot bulb gaskets to insure minimum air infiltration.

1. Operating sash shall be hollow extruded design, mitered and joined with heavy reinforcing corners.
2. Both operable and fixed lites shall be inside glazed with an expanded EPDM closed cell sponge gasket to exterior, with aluminum glazing bead and a driven EPDM wedge gasket to the interior for rapid removal and replacement.

D. Glazing:

1. Heavy commercial (HC2000) windows shall be glazed with 1" double insulated glass.
2. Glazing Specification: 088000

E. Finish is to be coordinated with closure system.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Installer shall examine substrates, supporting structure and installation conditions.
- B. Do not proceed with panel installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Metal Protection:

1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose.

2. Where aluminum will contact concrete, masonry or pressure treated wood, protect against corrosion by painting contact surfaces with bituminous paint or method recommended by manufacturer.

3.3 INSTALLATION

- A. Install the panel system in accordance with the manufacturer's suggested installation recommendations and approved shop drawings.
 1. Anchor component parts securely in place by permanent mechanical attachment system.
 2. Accommodate thermal and mechanical movements.
 3. Set perimeter framing in a full bed of sealant compound, or with joint fillers or gaskets to provide weather-tight construction.
- B. Install joint sealants at perimeter joints and within the panel system in accordance with manufacturer's installation instructions.

3.4 CLEANING

- A. Clean the panel system interior and exterior, immediately after installation.
- B. Refer to manufacturer's written recommendations.

END OF SECTION 084523

SECTION 08 7100 - FINISH HARDWARE

PART I - GENERAL

1.01 DESCRIPTION

A. Related Work:

- 1. Cabinet Hardware: Architectural Woodwork and Manufactured Cabinets and Casework.
- 2. Threshold Caulking: Joint Sealants.
- 3. Connecting Electrical Hardware: Electrical
All wire, pulling of wire, and connections electric hardware are to be supplied by the Electrical Contractor. Wiring diagrams, point to point termination diagrams, and riser diagrams are to be furnished by the Finish Hardware Supplier.

1.02 QUALITY ASSURANCE

- A. SUPPLIER QUALIFICATIONS: The hardware supplier must have in his/her employment an Architectural Hardware Consultant (AHC), as recognized by the Door And Hardware Institute, with a minimum of 10 years of Architectural Hardware experience or an equivalent person with 15 years of Architectural Hardware experience, who shall be responsible for the detailing , scheduling, and ordering of the finish hardware for this Contract.
- B. DESIGN CRITERIA: Provide Underwriter’s Laboratory listed hardware for fire or accident hazard where scheduled or required to maintain rating of openings. Comply with requirements of door and door frame labels. Comply with NFPA No. 80 and local codes that are used in the area of the project.

1.03 SUBMITTALS

- A. Hardware Schedule: Within 10 days after receipt of a contract for the finish hardware, prepare a complete schedule and submit 8 copies of the hardware schedule with 3 copies of catalogue cuts, highlighted to show each different hardware item to the Architect for review.
- B. Do not order hardware until a corrected copy of the schedule is returned to the supplier bearing the approval of the Architect.
- C. This schedule shall indicate the following details:

Door numbers	Frame materials
Location	Hand of door
Size and thickness of door	Degree of opening
Door material	Type of attachment
Door / Hdw Set Index	
- D. Templates: After receipt of the approved corrected hardware schedule, upon request the hardware supplier shall send 4 sets of all templates and corrected hardware schedule to the

general contractor for distribution to the wood door, metal door, and frame manufacturers/suppliers.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hardware to the jobsite only after proper provision for storage has been made. NO DIRECT SHIPMENTS WILL BE ALLOWED.
- B. Properly package and clearly identify each item relative to the hardware schedule.
- C. The hardware supplier shall authorize his representative to be present when all finish hardware is delivered to the jobsite and shall check-in each item and turn over to the General Trades Contractor for storage in a secure place under lock and key.

1.05 WARRANTY

Furnish 3 copies of the following written warranty to be included in the Maintenance Manual:

- 1. Warranty against mechanical failure of exit devices for a 3 year period.
- 2. Warranty against mechanical failure of locksets and cores for a 7 year period.
- 3. Warranty against mechanical failure of door closers for a 10 year period.
- 4. Warranty door operators and supporting equipment for a 2 year period.
- 5. Warranty against failure of parts of all hardware except exit devices, locksets, and door closers for a 1 year period.
- 6. Starting date for all warranty periods to be the date of substantial completion of building by Architect.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- | | | |
|-------------------------------|------------------------------------|-----|
| A. Butts: | Ives, Bommer, Hager | IVE |
| B. Exit Devices: | Von Duprin - 99 Series - *** | VON |
| C. Door Closers: | LCN – 4000 Series -*** | LCN |
| D. Locksets: | Schlage ND Series - *** | SCH |
| E. Thresholds & Weatherstrip: | National Guard, Reese, Zero, Pemko | ZER |
| F. Stops & Door Trim: | Ives, Trimco, Rockwood, Don-Jo | IVE |
| G. O/H Stops: | Glynn Johnson, Rixson | GLY |
| H. Operators and Accessories: | See Section 08 7113 - *** | |
- *** School District Standard - NO SUBSTITUTES

OTHER MANUFACTURERS BY PRIOR APPROVAL OF THE ARCHITECT AND LISTED IN AN ADDENDUM.

2.02 SCHEDULED HARDWARE

- A. Requirements for design: grade, function, finish, size, and other distinctive qualities of each type of Builders Hardware is indicated in the Hardware Schedule at the end of this section. Products are identified by using manufacturer's hardware product numbers.

- B. **Manufacturer's Product Designation:** One or more manufacturers are listed for each hardware type required. The initial after the manufacturer's name indicates whose product designation is used in the Hardware Schedule for purposes of establishing minimum requirements. Provide either the product as designated or where more than one manufacturer is listed, the comparable product of one of the other manufacturers which comply with requirements including those specified elsewhere in the section.

2.03 MATERIALS AND FABRICATION

- A. **Hand of Door:** The drawings show the direction of slide, swing, or hand of each door leaf. Furnish each item of hardware for proper installation and operation of the door movement as shown.
- B. **Base Metals:** Produce hardware units of the basic metal and forming method indicated using the manufacturer's standard metal alloy, composition, temper, and hardness. Do not furnish "optional" materials or forming methods for those indicated except as otherwise specified.
- C. **Fasteners:** Manufacture hardware to conform to published templates generally prepared for machine screw installation. Do not provide hardware which has been prepared for self-tapping screws except as specifically indicated.
1. Furnish screws for installation with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match the hardware finish or if exposed in surfaces of other work to match the finish of such other work as closely as possible including "prepared for paint" in surfaces to receive painted finish.
 - a. **Sex Bolts:** Install door closer, door holders, and exit devices on wood doors by means of thru bolts and sex nuts.
 2. Provide concealed fasteners for hardware units which are exposed when the door is closed except to the extent no standard units of the type specified are available with concealed fasteners.

2.04 BUTTS, HINGES, AND PIVOTS

- A. **Templates:** Provide only template produced units.
- B. **Screws:** Furnish Phillips flat-head all purpose or machine screws for installation of units except furnish Phillips flat-head all purpose wood screws for installation of units into wood. Finish screw heads to match surface of hinges or pivots.
- C. **Hinge Pins:** Except as otherwise indicated provide hinge pins as follows:
1. **Steel Hinges:** Steel pins
 2. **Non-ferrous Hinges:** Stainless steel pins
 3. **Exterior Doors:** Non-removable pins (NRP)
 4. **Interior doors:** Non-rising pins
 5. **Tips:** Flat button and matching plug finished to match leaves
- D. **Number of hinges:** Provide number of hinges indicated but not less than 3 hinges per door leaf for doors 90" or less in height and 1 additional hinge for each 30" of additional height.

- E. Size of hinge leaves: 4.5" high, except 5" for doors over 3'6" wide.
- F. Width of hinges: Shall be sufficient to clear trim projection when door swings 180 degrees.
- G. Fire rated doors over 8'0" shall have heavy weight hinges.
- H. All hinges shall be made of steel and have steel ball bearings.

2.05 KEYING

- A. Final cylinders and keys provided and installed by the owner.
- B. Provide all locking devices with 1-bit cylinders as listed in the hardware sets for use during construction.
- C. Keys Required: Furnish quantity of keys as follows:
 - 4. Fifteen (15) Construction Keys.
- D. All keys shall be made of nickel silver.

2.06 CYLINDRICAL TYPE LOCKSETS

- A. Heavy Duty Cylindrical Locks and Latches: Schlage ND Series. Fastened with through-bolts.
- B. Chassis: Cylindrical design, corrosion - resistant plated cold-rolled steel.
- C. Latch Retractors: Forged steel. Balance of inner parts: Corrosion-resistant plated steel, or stainless steel.
- D. Lever Trim: Accessible design, independent operation, spring-cage supported, minimum 2" clearance from lever mid-point to door face.
- E. Locks shall be of such construction that when locked, the door may be opened from within by using lever and without the use of a key or special knowledge.
- F. Rosettes: Minimum 3-7/16" diameter for coverage of ANSI/DHI A115.18, 1994 door preparation, through-bolt lugs on both spring cages to fully engage this pattern.
- G. Springs: Full compression type.
- H. Strikes: 16 gage curved steel, bronze or brass with 1" deep box construction, lips of sufficient length to clear trim and protect clothing.

2.07 DEADLOCKS

- A. Deadlocks shall be tubular type with interior parts made of steel or bronze

- B. All steel parts shall be bronze plated or coated with zinc-dichromate to resist rusting and corrosion.

2.08 CLOSER AND DOOR CONTROL DEVICES

- A. Surface type door closers shall be fully hydraulic, full rack and pinion action with a one piece forged steel piston and have a cast iron case with a Thirty year warranty. Closers at fire rated doors shall be in compliance with UL 10 C and UBC 7.2 (1997) certified for positive pressure. Hydraulic fluid shall be of a type requiring no seasonal adjustments for temperatures from 120 degrees F. to -30 degrees F.. Pinion shaft shall be a minimum of 5/8" diameter. Closers shall be Barrier-free at all interior doors.
- B. Separate adjusting valves shall be provided for closing speed, latching speed and backcheck.
- C. Adjusting valves shall be of a metal material, concealed, adjustable only with special wrench, and shall be seated with "O" type rings.
- D. All closers shall be supplied with forged steel main arms.
- E. Closers shall NOT be supplied with "Pressure Relief Valves".

2.09 EXIT DEVICES

- A. Exit devices: Von Duprin as scheduled with push-through pad design, no exposed touch bar fasteners, no exposed cavities when operated.
- B. Provide certification by independent testing laboratory that specified devices have completed over 1,000,000 cycles and still perform in accordance to ANSI/BHMA A156.3 - 1997.
- C. All internal parts shall be of cold-rolled steel with zinc dichromate coating.
- D. Mechanism case shall have an average thickness of .140"
- E. Compression spring engineering.
- F. Non-handled basic device design with center case interchangeable with all functions.
- G. All devices shall have quiet return fluid dampeners.
- H. All latchbolts for wide stile devices shall be deadlocking with 3/4" throw and have a self-lubricating coating to reduce friction and wear.
- I. Device push bar must release when a force of 32 pounds, or less, of pressure is applied when a force of 250 pounds is applied to the door.
- J. Device shall bear UL label for fire and or panic as may be required.
- K. All surface strikes shall be roller type and utilize a plate underneath to prevent movement.
- L. Lever Trim: "Breakaway" design, forged brass or bronze escutcheon with a minimum

of .130" thickness, match lockset lever design.

- M. Removable Mullions: Removable with single turn of building key, securely reinstalled without need for key.
- N. Furnish glass bead kits for vision lites where required. Devices for flush doors must fit flat on the door.
- O. Exit devices shall be able to have latch-bolt monitoring switches, request to exit switches, electric latch-retraction, alarm kits, electric outside trim, or cylinder dogging added to the existing unit as the need arises for future electrified openings without replacing the original exit device.

2.10 MISCELLANEOUS DOOR TRIM UNITS

- A. Material shall be brass, bronze or stainless steel as appropriate for required finish. Brass bronze material to be 0.050" minimum thickness and stainless steel to be 0.050" minimum thickness. Edges of plates to be beveled and polished except lower edge can be square.
- B. Width of plates shall be 2" less than door width.
- C. Push Plates: Plate shall be 4" x 16".
- D. Pull Plates: Plate shall be 4" x 16". Grip shall be extruded or cast bronze or stainless steel located on center of plate.
- E. Smoke Seal and astragals at all fire rated doors shall be in compliance with UL 10 C and UBC 7.2 (1997) for positive pressure.

2.11 TOOLS FOR MAINTENANCE

Furnish a complete set of specialized tools as needed for Owner's continued adjustment, maintenance and removal or replacement of the finish hardware.

2.12 ELECTRICAL POWER TRANSFERS

- A. Electrical Power Transfer (EPT) units shall be fully concealed when the door is closed.
- B. EPT shall contain either 2 each 18 gauge stranded or 10 each 24 gauge stranded wires as determined in the hardware sets.
- C. The transfer tube shall be made of stainless steel. "Spring Tubes" are NOT acceptable.
- D. Electric hinges are NOT an approved substitution.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. General: All finish hardware shall be installed by the General Contractor.

- B. Furnish all items of hardware with attachment screws, bolts, nuts, etc., as required to attach hardware to type of material involved and with finish to match hardware with which they are to be used. Make all attachments to metal by template machine screws.
- C. Provide sex nuts and bolts for door closers, forearm shoes of closers, and holding devices.
- D. Attached hardware to masonry or concrete with expansion bolts or similar drilled anchors to develop full strength of attached device.
- E. Run weatherstripping or soundstripping full height of both jambs and full width of head. Run thresholds full width of opening. Run door bottoms full width of doors. Set expansion anchors in solid masonry, not mortar joints. Set thresholds in caulking by sealant contractor.

3.02 PROTECTION

- A. Do not install door silencers, kickplates, pushplates, door bottoms, and wall stops until after painting is complete. Loosen locksets and panic hardware prior to painting and re-tighten after painting is complete. Mask all hardware or otherwise protect during painting operation.

3.03 ADJUST AND CLEAN

- A. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application made.
- B. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.
- C. Instruct Owner's personnel in proper adjustment and maintenance of hardware and hardware finishes during the final adjustment of hardware.
- D. Adjust all closers to meet ADA Requirements for sweep time and opening force. Set the closer's backcheck valve to slow the doors opening from 85 degrees on.

3.04 HARDWARE SCHEDULE

- A. It is intended the following schedule include all item of finish hardware necessary to complete the work. If a discrepancy is found in the schedule, such as a missing item, improper hardware for frame, door, or fire codes, the Preamble will be the deciding document.
- B. All items shall be of proper type for attaching securely to type of material on which they occur.

C. The schedule of materials is as follows:

HARDWARE SET: 01

DOOR NUMBER:

100B.B 101B.A

EACH TO HAVE:

1	EA	CONT. HINGE	112HD	628	IVE
1	EA	CONT. HINGE	112HD EPT	628	IVE
1	EA	POWER TRANSFER	EPT10	✓ 689	VON
1	EA	REMOVABLE MULLION	KR4954-STAB-ANGLE PLATE	689	VON
1	EA	PANIC HARDWARE	99-EO	626	VON
1	EA	ELEC PANIC HARDWARE	QEL-99-NL-OP-110MD 24 VDC	✓ 626	VON
1	EA	MORTISE CYLINDER	20-001 1 -BIT	626	SCH
1	EA	RIM CYLINDER	20-021 1-BIT	626	SCH
2	EA	OFFSET PULL	8190HD-10"	630	IVE
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4021	689	LCN
2	EA	MOUNTING PLATE	4020-18G	689	LCN
1	EA	MULLION SEAL	8780N X D.H.	BK	ZER
2	EA	DOOR SWEEP	39A X D.W.	A	ZER
1	EA	THRESHOLD	8655A X D.W.	A	ZER
1	EA	CARD READER	BY ACCESS CONTROL INTEGRATOR	✓	
2	EA	DOOR CONTACT	679-05 WD OR HM AS REQ'D	✓ BLK	SCE
1	EA	RX MOTION SENSOR	BY ACCESS CONTROL INTEGRATOR	✓	
1	EA	POWER SUPPLY	PS902 BBK 900-2RS	✓ LGR	SCE
1	SET	SEALS	BY ALUM DOOR/FRAME MFG		

DOORS NORMALLY CLOSED AND LOCKED.

ENTRY BY VALID CREDENTIAL AT CARD READER OR BY KEY AT RIM CYLINDER.

FREE EGRESS AT ALL TIMES.

HARDWARE SET: 01.1

DOOR NUMBER:

100B.A

EACH TO HAVE:

1	EA	CONT. HINGE	112HD	628	IVE
1	EA	CONT. HINGE	112HD EPT	628	IVE
1	EA	POWER TRANSFER	EPT10	✎ 689	VON
1	EA	REMOVABLE MULLION	KR4954-STAB-ANGLE PLATE	689	VON
1	EA	PANIC HARDWARE	99-EO	626	VON
1	EA	ELEC PANIC HARDWARE	LX-QEL-99-NL-OP-110MD 24 VDC	✎ 626	VON
1	EA	MORTISE CYLINDER	20-001	626	SCH
			1 -BIT		
1	EA	RIM CYLINDER	20-021	626	SCH
			1-BIT		
2	EA	OFFSET PULL	8190HD-10"	630	IVE
2	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4021	689	LCN
1	EA	AUTO OPERATOR	BY SECTION 08 7113	✎	
2	EA	MOUNTING PLATE	4020-18G	689	LCN
2	EA	ACTUATOR	BY SECTION 08 7113	✎	
1	EA	MULLION SEAL	8780N X D.H.	BK	ZER
2	EA	DOOR SWEEP	39A X D.W.	A	ZER
1	EA	THRESHOLD	8655A X D.W.	A	ZER
1	EA	CARD READER	BY ACCESS CONTROL	✎	
			INTEGRATOR		
2	EA	DOOR CONTACT	679-05 WD OR HM AS REQ'D	✎ BLK	SCE
1	EA	RX MOTION SENSOR	BY ACCESS CONTROL	✎	
			INTEGRATOR		
1	EA	POWER SUPPLY	PS902 BBK 900-2RS	✎ LGR	SCE
1	SET	SEALS	BY ALUM DOOR/FRAME MFG		

DOORS NORMALLY CLOSED AND LOCKED.

ENTRY BY VALID CREDENTIAL AT CARD READER OR BY KEY AT RIM CYLINDER.

FREE EGRESS AT ALL TIMES.

NOTE: THE EXTERIOR WALL ACTUATOR SHALL BE WIRED IN SERIES WITH THE "LX" SWITCH IN THE PANIC DEVICE - SUCH THAT WHEN THE PANIC DEVICE IS UNLOCKED BY THE CARD READER ON THE EXTERIOR, THE EXTERIOR WALL ACTUATOR IS ACTIVE, AND THE OPERATOR WILL OPEN THE DOOR WHEN THE WALL ACTUATOR IS PUSHED. THE INTERIOR WALL ACTUATOR SHALL BE WIRED TO WHERE WHEN PUSHED THE "QEL" ON THE PANIC DEVICE WILL RETRACT AND THE OPERATOR WILL OPEN THE DOOR.

HARDWARE SET: 02

DOOR NUMBER:
100B.C

EACH TO HAVE:

1	EA	CONT. HINGE	112HD	628	IVE
1	EA	CONT. HINGE	112HD EPT	628	IVE
1	EA	POWER TRANSFER	EPT10	↗ 689	VON
1	EA	PANIC HARDWARE	9949-EO-LBL	626	VON
1	EA	ELEC PANIC HARDWARE	QEL-9949-NL-OP-110MD-LBL 24 VDC	↗ 626	VON
1	EA	RIM CYLINDER	20-021	626	SCH
			1-BIT		
2	EA	OFFSET PULL	8190HD-10"	630	IVE
2	EA	SURFACE CLOSER	4021 H	689	LCN
			HOLD OPEN		
2	EA	MOUNTING PLATE	4020-18G	689	LCN
2	EA	WALL STOP	WS406/407CVX	630	IVE
1	EA	CARD READER	BY ACCESS CONTROL INTEGRATOR	↗	
2	EA	DOOR CONTACT	679-05 WD OR HM AS REQ'D	↗ BLK	SCE
1	EA	RX MOTION SENSOR	BY ACCESS CONTROL INTEGRATOR	↗	
1	EA	POWER SUPPLY	PS902 BBK 900-2RS	↗ LGR	SCE
1	SET	SEALS	BY ALUM DOOR/FRAME MFG		

DOORS NORMALLY CLOSED AND LOCKED.
ENTRY BY VALID CREDENTIAL AT CARD READER OR BY KEY AT RIM CYLINDER.
FREE EGRESS AT ALL TIMES.

HARDWARE SET: 03

DOOR NUMBER:

102.A	103.A	103.B	104.A	104.B	110.A
110.B	111.A	111.B	112.A	112.B	113.A
114.A	118.A	118.B	119.A	119.B	120.A
120.B	128.A	129.A	130.A	130.B	131.A
131.B	132.A	132.B			

EACH TO HAVE:

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	LOCKSET	EXISTING TO REMAIN		
1	EA	OH STOP	90S	630	GLY
1	EA	SURFACE CLOSER	4011 H	689	LCN
			HOLD OPEN		
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE SET: 04

DOOR NUMBER:

102A.A	103A.A	104A.A	110A.A	111A.A	112A.A
118A.A	119A.A	120A.A	130A.A	131A.A	132A.A

EACH TO HAVE:

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	ND10S RHO	626	SCH
1	EA	TURN I/S X OCC IND	D271 X CDS-PR1 MODIFICATION BY CDS MFG	626	FAL
1	EA	OH STOP	90S	630	GLY
3	EA	SILENCER	SR64	GRY	IVE

INDICATOR DISPLAYED BY THUMB TURN UNIT INSIDE. OCCUPANCY INDICATOR ON OUTSIDE (READS EITHER "IN USE" OR "VACANT" WITH COLOR CODING). BOLT AUTOMATICALLY CATCHES WHEN FULLY THROWN. INDICATOR RETURNS TO "VACANT" BY INSIDE THUMB TURN OR BY SIMPLY OPENING THE DOOR.

HARDWARE SET: 05

DOOR NUMBER:

105.A	107.A	115.A	117.A
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EACH TO HAVE:

3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	PUSH PLATE	8200 4" X 16"	630	IVE
1	EA	PULL PLATE	8302 6" 4" X 16"	630	IVE
1	EA	SURFACE CLOSER	4011	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE SET: 06

DOOR NUMBER:

106.A	116.A
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EACH TO HAVE:

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	ND96PD RHO 1-BIT	626	SCH
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE SET: 07

DOOR NUMBER:

108.A 121.A 180B.A

EACH TO HAVE:

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	ND96PD RHO 1-BIT	626	SCH
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE SET: 08

DOOR NUMBER:

109.A 114.B 133.A

EACH TO HAVE:

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM SEC LOCK	ND95PD RHO XN12-035 1-BIT	626	SCH
1	EA	SURFACE CLOSER	4011	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE SET: 09

DOOR NUMBER:

123.A 124.A

EACH TO HAVE:

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PRIVACY LOCK	L9040 06A L583-363 L283-722 OCC/VAC INIDCATOR	626	SCH
1	EA	SURFACE CLOSER	4011	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE SET: 10

DOOR NUMBER:

126.A

EACH TO HAVE:

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	LOCKSET	EXISTING TO REMAIN		
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE SET: 11

DOOR NUMBER:

127.A

EACH TO HAVE:

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	ND10S RHO	626	SCH
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE SET: 12

DOOR NUMBER:

134.A

EACH TO HAVE:

6	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	SET	AUTO FLUSH BOLT	FB41P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	ND96PD RHO 14-042	626	SCH
			1-BIT		
1	EA	COORDINATOR	COR X FL	628	IVE
2	EA	MOUNTING BRACKET	MB2	689	IVE
2	EA	SURFACE CLOSER	4111 SCUSH	689	LCN
2	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	SET	SEALS	188S X D.S.	BLK	ZER
1	EA	ASTRAGAL	44SP X 188S X D.H.	600	ZER
			MOUNT PUSH SIDE OF INACTIVE		
			LEAF		

HARDWARE SET: 13

DOOR NUMBER:

134.B

EACH TO HAVE:

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	ND96PD RHO 1-BIT	626	SCH
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	SET	SEALS	188S X D.S.	BLK	ZER

HARDWARE SET: 14

DOOR NUMBER:

135.A

EACH TO HAVE:

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	LOCKSET	EXISTING TO REMAIN		
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE SET: 15

DOOR NUMBER:

135.B 136.A

EACH TO HAVE:

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	LOCKSET	EXISTING TO REMAIN		
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE SET: 16

DOOR NUMBER:

135A.A

EACH TO HAVE:

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PRIVACY LOCK	ND40S RHO	626	SCH
1	EA	OH STOP	90S	630	GLY
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE SET: 17

DOOR NUMBER:

137.A 138.A

EACH TO HAVE:

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	LOCKSET	EXISTING TO REMAIN		
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE SET: 18

DOOR NUMBER:

122.A 180A.A

EACH TO HAVE:

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	PANIC HARDWARE	99-NL	626	VON
1	EA	RIM CYLINDER	20-021	626	SCH
			1-BIT		
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

END OF SECTION

Door Numbers	HwSet#
100B.A	01
100B.B	01
100B.C	02
101B.A	01
102.A	03
102A.A	04
103.A	03
103.B	03
103A.A	04
104.A	03
104.B	03
104A.A	04
105.A	05
106.A	06
107.A	05
108.A	07
109.A	08
110.A	03
110.B	03
110A.A	04
111.A	03
111.B	03
111A.A	04
112.A	03
112.B	03
112A.A	04
113.A	03
114.A	03
114.B	08
115.A	05
116.A	06
117.A	05
118.A	03
118.B	03
118A.A	04
119.A	03
119.B	03
119A.A	04
120.A	03
120.B	03
120A.A	04
121.A	07
122.A	07
123.A	09
124.A	09
126.A	10
127.A	11
128.A	03
129.A	03

Door Numbers	HwSet#
130.A	03
130.B	03
130A.A	04
131.A	03
131.B	03
131A.A	04
132.A	03
132.B	03
132A.A	04
133.A	08
134.A	12
134.B	13
135.A	14
135.B	15
135A.A	16
136.A	15
137.A	17
138.A	17
180A.A	07
180B.A	07

SECTION 087113 - AUTOMATIC DOOR OPERATORS (Heavy Duty-Low Energy)**PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. The heavy duty low energy automatic swing door operator shall consist of aluminum operator housing, electro-mechanical motor, operator assembly, swing arm and electronic control. Installation shall be performed by a local AAADM certified installer.

1.2 RELATED SECTIONS

- A. Section 08410 - Aluminum entrances & storefronts
- B. Section 08120 - Aluminum doors & frames
- C. Section 08210 - Wood doors & frames
- D. Section 08110 - Hollow metal doors & frames
- E. Section 08710 - Door hardware
- F. Section 08810 - Glass and glazing
- G. Section 07920 - Caulking & sealants
- H. Division 1600 - Electrical
- I. Division 26 and 28 Sections for emergency generated power source electrical connections including conduit and wiring for automatic entrance door operators, fire alarm, smoke EVAC system, electrified hardware and related power supply terminations, and access control devices.

1.3 REFERENCES – (Codes & Approvals)

- A. Unit described complies with current ANSI A156.19 for Power Assist and Low Energy Power Operated Doors.
- B. Unit is listed with UL 325-1997 standard for Door, Drapery, Gate, Louver, and Window Operators and Systems (File E218616).
- C. Unit is listed with UL991 Tests for Safety-Related Controls Employing Solid-State Devices
- D. CNL approved (UL listing for use in Canada).
- E. Unit complies with NFPA 101 Life Safety Code. (Section 1.4 of UL 325 includes NFPA 101)
- F. Unit complies with NFPA 70 National Electrical Code. (Section 1.1 of UL 325 includes NFPA 70)
- G. Unit complies with IBC (2003)
- H. Unit exceeds BHMA testing - ANSI BHMA A156.19 Section 5 Cycle Testing. (tested 1,000,000 ops)
- I. Listed in accordance with the Uniform Building Code standard 7-2, "Fire Tests of Door Assemblies", (1997) Part I in addition to UL 10C.

1.4 PERFORMANCE REQUIREMENTS

- A. Operator to be used on doors weighing up to 350 pounds per leaf.
- B. Operator capable of operating within temperature ranges of -40°F and +140°F

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300
- B. Product Data: Submit manufacturer's product data and standard details for automatic operators.
- C. Shop Drawings: Submit shop drawings detailing exact dimensions for each door unit including door operator details, activation components, and electric hardware interface, wiring details and electrical requirements.
- D. Anodized/Finish Samples

1.6 OPERATION AND MAINTENANCE DATA

- A. Owner's manual will be supplied as part of the close out documentation.

1.7 QUALITY ASSURANCE

- A. Operator shall be manufactured by an AAADM registered manufacture. Manufactured to meet or exceed the American National Standard for Low Energy Power Operated Pedestrian Doors ANSI / BHMA 156.19.
- B. Source Limitations: Obtain automatic door operators and installation services through one source from a single manufacturer.

1.8 INSTALLER QUALIFICATIONS

- A. Equipment must be installed by an AAADM Certified, record-USA factory trained and record-USA authorized company with a minimum of 5 years experience in the installation this the specified product type.
- B. Installing company of the equipment, to provide local central dispatch system for warranty service, this is to be available 24 hours a day, 365 days per year. A sticker will be placed in a prominent position on the header of each installed unit giving details of local service company, name and telephone number. If a SMART panel option is used, then details of the telephone number to be called will be programmed into the device.

1.9 WARRANTY

- A. All automatic door components are warranted to be free of defects in materials or workmanship under normal use for a period of two years from the date of substantial completion.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Acceptable manufacturer:

record-usa series 8100 Electromechanical Automatic Operator.

Consideration will be given to products considered to be equal or better than those specified. Only those manufacturers listed or a product approved by the architect as an equal will be allowed to be used.

2.2 EQUIPMENT

The swing door operator consists of operator housing, swing power operator, electronic control, wire harnesses and connecting hardware.

2.3 AUTOMATIC SWING DOOR OPERATOR

- A. Operator: Electro-mechanical operator, powered by 24 volt, 1/4 hp motor.
- B. Operator is to be non-handed to ensure maximum versatility in adapting to varying field conditions. Opening Force shall be adjustable by means of one screw, to compensate for different manual push forces required on varying door widths.
- C. The non-handed operator is completely contained in extruded aluminum housing. All aluminum sections are 6063-T5 alloy while the structural walls of the base plate have a minimum thickness of 0.187" (3/16") while the access cover (non-structural) has a minimum wall thickness of 0.094" (3/32"). The operator housing width by height shall not exceed 4-1/2" x 5". Length of operator housing determined by site conditions and/or specifications herein. Motor/gear box shall be secured to operator housing via tamper proof extruded channel on the back member of operator housing.
- D. Electronic Controls: Microprocessor controlled unit shall control the operation and switching of the swing power operator. The microprocessor control to provide low voltage power supply for all means of actuation. No external or auxiliary low voltage power source will be allowed. The controls include time delay for normal cycle.
- E. Connecting Hardware: Surface mounted operator is connected to the door by means of a steel door arm. The door arm is secured to the top rail of the swing door using one piece threaded tubular inserts for aluminum doors, 1/4-20 binding head and post screws (sex bolts) for wood and hollow metal doors. The standard power arm and connecting arm shall accommodate up to 12" reveals and opening angles to 120 degrees. The arm will be equipped with a mechanical device which will in the case of extreme force, "sheer" thus protecting any internal mechanical components from damage, in the case of abuse.
- F. Manual Use: The operator shall serve as a manual door closer in the direction of swing with or without electrical power.
- G. External Control: A three position switch will be mounted in the end cover of the housing, along with a "fault warning" LED. The switch will be clearly marked, ON/OFF/HOLD OPEN. The LED will flash if the microprocessor detects a fault of any kind.
- H. Simplified Access: An access port that eliminates the need to remove the cover for service or adjustment is included as standard and located on the bottom of the unit unless specified elsewhere.
- I. Power Open: When an opening signal is received by the control unit, the door shall be opened at the operator-adjusted opening speed. Before the door is fully open at back check, it slows automatically to low speed. The motor stops when the selected door opening angle has been reached. The open position is held by the motor. If the door is obstructed while opening, it will either stop or reverse (field selectable).
- J. Field Adjustable Open Stop: The operator shall provide a field adjustable mechanical open stop to accommodate opening angles from 80 to 180 degrees.
- K. Normal Close: Closing shall be provided by means of spring, adjustable tension will be by means of a single screw.
- L. Power Close: Closing shall be provided by means of a spring and motor. When the hold open time has elapsed, the operator will close the door automatically, using spring force and motor. The door will slow to low speed at latch check before it reaches the fully closed position. The door is kept closed by spring power or extended closing force

by the motor.

- M. Power Assist: Operator can be adjusted to lower the open forces when used manually. Power Assist will be active only while pushing or pulling the door and will allow the door to close when an opening force is no longer applied to the door.
- N. Electronic Dampening: Operator to include standard electric dampening system which automatically counteracts additional forces applied to the door during the opening or closing cycle by reducing door speed.
- O. Stack Pressure Feature: The electronic control allows for increases of forces to overcome stack pressure issues. The control automatically compensates for lower manual push forces when the door is used in manual mode. The door must comply with ANSI A156.19, when using this feature.
- P. Lock engage circuit: If locking is unsuccessful when the door reaches the closed position, the operator will automatically reverse open 10 degrees and reclose in an attempt to successfully lock the door.
- Q. Test of Safety Sensors: If optional safety sensors are specified, the control will monitor the sensors before opening and closing the door. If sensors are not functioning correctly, automation is deactivated and the door will function as a manual swing door with a door closer and a fault is registered in the controls log.
- R. Fire rated surface applied operators connect to the surface of an existing fire rated labelled door frame or wall. Connecting hardware and UL approved fire exit hardware is required. See UL materials directory.
- S. A separate contact will be provided that upon receipt of a signal from an external source (fire alarm), the unit will close if in an open condition and not operate as an automatic door, until the signal from the external source has been reset.
- T. Signage: Provide signage in accordance with ANSI/BHMA A156.19.

2.4 OPTIONAL FEATURES

- A. S.M.A.R.T. panel LCD display: Will display the current status of the operator, any faults that the control sees and if required display a screen giving contact details for fault notification.
- B. Battery back-up: Accessibility and convenience at non-fire rated opening under power failure. The minimum size Uninterrupted Power Supply (UPS) should be rated at 1500VA.

2.5 PUSH PLATE CONTROL DEVICE

Actuation device is either:

- A. Hard wired push plate switches. These will be either surface mounted with an appropriate enclosure or in a concealed single gang electrical box.
- B. Radio controlled push plate switches.
- C. Touch less Activation sensor plates, 4 ½ inch square microwave technology, adjustable from 2” to 24.”

Option: Suitable bollard for remotely mounting push plates in areas where no suitable mounting for existing methods of mounting the push plates exist.

Option: Push to Activate - is a programmable feature. Push or pull the door open from any position, and the door will gently power open, time out and slowly close.

Door can be used as a manual door with no damage to the operator.

ELECTRICAL CHARACTERISTICS AND COMPONENTS

- A. **ELECTRICAL CHARACTERISTICS:** Power consumption must be less than or equal to the following: Nominal power 67 watts, Nominal current .08A at 120 VAC. Peak power consumption 2.9A, Standby .02A with power consumption of 13 watts.
- B. **OVERLOAD PROTECTION:** Electric motor is equipped standard with a built-in thermal overload protection.
- C. **ELECTRICAL CONTRACTOR NOTE:** provide two low voltage 18 gauge stranded wires from automatic operator to (50 feet max.) activation devices (if required).

2.6 ALUMINUM FINISHES

- A. All exposed aluminum surfaces are dark bronze anodized (AAC23A44) or clear anodized (AAC22A31). Custom finishes such as stainless steel clad, powder coatings or paint are available, if specified (architect to provide color).

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify the openings are plumb and are dimensioned properly. Insure adequate support has been provided at the operator header. Proceed with the installation only after conditions are deemed satisfactory.

3.2 INSTALLATION AND ADJUSTMENT

- A. Install equipment in accordance with the manufacturers' installation instructions. Adjust equipment per instructions and current ANSI/BHMA 156.19 American National Standard for Power assist and low energy power operated doors.
- B. Door Operators: Connect door operators to electrical power distribution system as specified in Division 26 Sections.
- C. Controls: terminate wire to: controls, press plates, safety sensors.

END OF SECTION 087113

SECTION 088000 - GLAZING

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:
 - 1. Glass for doors, storefront framing, HM Framing, glazed Fiberglass-Sandwich-Panel Assemblies.
 - 2. Glazing sealants and accessories.

1.3 DEFINITIONS

- A. Glass Manufacturers: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.
- B. Glass Thicknesses: Indicated by thickness designations in millimeters according to ASTM C 1036.
- C. IBC: International Building Code.
- D. Interspace: Space between lites of an insulating-glass unit.

1.4 COORDINATION

- A. Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.

1.5 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project Site.
 - 1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 2. Review temporary protection requirements for glazing during and after installation.

1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Glass Samples: For each type of glass product other than clear monolithic vision glass the following products; 12 inches (300 mm) square.

1. Tinted glass.
2. Coated glass.
3. Laminated glass.
4. Insulating glass.

C. Glazing Accessory Samples: For sealants in 12-inch (300-mm) lengths.

D. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations indicated on Drawings.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturers of insulating-glass units with sputter-coated, low-E coatings.

B. Product Certificates: For glass.

C. Product Test Reports: For coated glass, insulating glass, laminated glass and glazing sealants, for tests performed by a qualified testing agency.

1. For glazing sealants, provide test reports based on testing current sealant formulations within previous 36-month period.

D. Preconstruction adhesion and compatibility test report.

E. Sample Warranties: For special warranties.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications for Insulating-Glass Units with Sputter-Coated, Low-E Coatings: A qualified insulating-glass manufacturer who is approved and certified by coated-glass manufacturer.

B. Installer Qualifications: A qualified installer who employs glass installers for this Project who are certified under the National Glass Association's Certified Glass Installer Program.

C. Glass Testing Agency Qualifications: A qualified independent testing agency accredited according to the NFRC CAP 1 Certification Agency Program.

D. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.

E. Mockups: Build mockups to demonstrate aesthetic effects and to set quality standards for materials and execution.

1. Install glazing in mockups specified in Section 084113 "Aluminum-Framed Entrances and Storefronts" to match glazing systems required for Project, including glazing methods.

1.9 PRECONSTRUCTION TESTING

A. Preconstruction Adhesion and Compatibility Testing: Test each glass product, tape sealant, gasket, glazing accessory, and glass-framing member for adhesion to and compatibility with elastomeric glazing sealants.

1. Testing is not required if data are submitted based on previous testing of current sealant products and glazing materials matching those submitted.
2. Use ASTM C 1087 to determine whether priming and other specific joint-preparation techniques are required to obtain rapid, optimum adhesion of glazing sealants to glass, tape sealants, gaskets, and glazing channel substrates.
3. Test no fewer than five Samples of each type of material, including joint substrates, shims, sealant backings, secondary seals, and miscellaneous materials.
4. Schedule enough time for testing and analyzing results to prevent delaying the Work.
5. For materials failing tests, submit sealant manufacturer's written instructions for corrective measures including the use of specially formulated primers.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Protect glazing materials according to manufacturer's written instructions. Prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.
- B. Comply with insulating-glass manufacturer's written instructions for venting and sealing units to avoid hermetic seal ruptures due to altitude change.

1.11 FIELD CONDITIONS

- A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.
 1. Do not install glazing sealants when ambient and substrate temperature conditions are outside limits permitted by sealant manufacturer or are below 40 deg F (4.4 deg C).

1.12 WARRANTY

- A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.
 1. Warranty Period: 10 years from date of Substantial Completion.
- B. Manufacturer's Special Warranty for Laminated Glass: Manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.
 1. Warranty Period: 10 years from date of Substantial Completion.
- C. Manufacturer's Special Warranty for Insulating Glass: Manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Glass Product: PPG Solarban 70XL, clear for 1" insulating glazing units. Subject to compliance with requirements, provide product indicated in glass schedules or comparable products.
- B. Source Limitations for Glass: Obtain from single source from single manufacturer for each glass type.
 1. Obtain laminated glass from single source from single manufacturer.
 2. Obtain reflective-coated glass from single source from single manufacturer.
- C. Source Limitations for Glazing Accessories: Obtain from single source from single manufacturer for each product and installation method.

2.2 PERFORMANCE REQUIREMENTS

- A. General: Installed glazing systems shall withstand normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, or installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.
- B. Structural Performance: Glazing shall withstand the following design loads within limits and under conditions indicated determined according to the IBC and ASTM E 1300.
 1. Design Wind Pressures: As indicated on Drawings.
 2. Design Wind Pressures: Determine design wind pressures applicable to Project according to ASCE/SEI 7, based on heights above grade indicated on Drawings.
 - a. Wind Design Data: As indicated on Drawings.
 - b. Basic Wind Speed: As indicated on Drawings.
 - c. Importance Factor: As indicated on Drawings.
 - d. Exposure Category: As indicated on Drawings.
 3. Design Snow Loads: As indicated on Drawings.
 4. Maximum Lateral Deflection: For glass supported on all four edges, limit center-of-glass deflection at design wind pressure to not more than 1/50 times the short-side length or 1 inch (25 mm), whichever is less.
 5. Differential Shading: Design glass to resist thermal stresses induced by differential shading within individual glass lites.
- C. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II.
- D. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:
 1. For monolithic-glass lites, properties are based on units with lites 6 mm thick.
 2. For laminated-glass lites, properties are based on products of construction indicated.

3. For insulating-glass units, properties are based on units of thickness indicated for overall unit and for each lite.
4. U-Factors: Center-of-glazing values, according to NFRC 100 and based on LBL's WINDOW 5.2 computer program, expressed as Btu/sq. ft. x h x deg F (W/sq. m x K).
5. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL's WINDOW 5.2 computer program.
6. Visible Reflectance: Center-of-glazing values, according to NFRC 300.

2.3 GLASS PRODUCTS, GENERAL

- A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.
 1. GANA Publications: "Laminated Glazing Reference Manual" and "Glazing Manual."
 2. IGMMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."
- B. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of manufacturer. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.
- C. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.
- D. Strength: Where annealed float glass is indicated, provide annealed float glass, heat-strengthened float glass, or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where heat-strengthened float glass is indicated, provide heat-strengthened float glass or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where fully tempered float glass is indicated on the Drawings, provide fully tempered float glass.

2.4 GLASS PRODUCTS

- A. Clear Annealed Float Glass: ASTM C 1036, Type I, Class 1 (clear), Quality-Q3.
- B. Ultraclear Float Glass: ASTM C 1036, Type I, Class I (clear), Quality-Q3; and with visible light transmission of not less than 91 percent and solar heat gain coefficient of not less than 0.87.
- C. Fully Tempered Float Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.
 1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed unless otherwise indicated.
- D. Heat-Strengthened Float Glass: ASTM C 1048, Kind HS (heat strengthened), Type I, Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.
 1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed unless otherwise indicated.
- E. Ceramic-Coated Spandrel Glass: ASTM C 1048, Type I, Condition B, Quality-Q3.

2.5 INSULATING GLASS

- A. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E 2190.
1. Sealing System: Dual seal, with manufacturer's standard primary and secondary sealants.
 2. Spacer: Aluminum with black, color anodic finish.
 3. Desiccant: Molecular sieve or silica gel, or a blend of both.

2.6 GLAZING SEALANTS

- A. General:
1. Compatibility: Compatible with one another and with other materials they contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
 2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
 3. Field-applied sealants shall have a VOC content of not more than 250 g/L.
 4. Sealants shall comply with the testing and product requirements of the California Department of Public Health's (formerly, the California Department of Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
 5. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.
- B. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 100/50, Use NT.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Dow Corning Corporation; 790.
 - b. GE Advanced Materials - Silicones; SilPruf LM SCS2700.
 - c. May National Associates, Inc.; Bondaflex Sil 290.
 - d. Pecora Corporation; 890NST.
 - e. Sika Corporation U.S.; Sikasil WS-290.
 - f. Tremco Incorporated; Spectrem 1.

2.7 GLAZING TAPES

- A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C 1281 and AAMA 800 for products indicated below:
1. AAMA 804.3 tape, where indicated.
 2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
 3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.
- B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; and complying with AAMA 800 for the following types:

1. AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.
2. AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

2.8 MISCELLANEOUS GLAZING MATERIALS

- A. General: Provide products of material, size, and shape complying with referenced glazing standard, with requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
- C. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.
- D. Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lites in place for installation indicated.
- E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).
- F. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

2.9 FABRICATION OF GLAZING UNITS

- A. Fabricate glazing units in sizes required to fit openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing publications, to comply with system performance requirements.
 1. Allow for thermal movements from ambient and surface temperature changes acting on glass framing members and glazing components.
 - a. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- B. Clean-cut or flat-grind vertical edges of butt-glazed monolithic lites to produce square edges with slight chamfers at junctions of edges and faces.
- C. Grind smooth and polish exposed glass edges and corners.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine framing, glazing channels, and stops, with Installer present, for compliance with the following:
 1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
 2. Presence and functioning of weep systems.
 3. Minimum required face and edge clearances.
 4. Effective sealing between joints of glass-framing members.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.
- B. Examine glazing units to locate exterior and interior surfaces. Label or mark units as needed so that exterior and interior surfaces are readily identifiable. Do not use materials that leave visible marks in the completed Work.

3.3 GLAZING, GENERAL

- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.
- B. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass includes glass with edge damage or other imperfections that, when installed, could weaken glass, impair performance, or impair appearance.
- C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.
- D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
- E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- F. Provide spacers for glass lites where length plus width is larger than 50 inches (1270 mm).
 - 1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
 - 2. Provide 1/8-inch (3-mm) minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.
- G. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.
- H. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.
- I. Set glass lites with proper orientation so that coatings face exterior or interior as specified.
- J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

- K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.4 TAPE GLAZING

- A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.
- B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.
- C. Cover vertical framing joints by applying tapes to heads and sills first, then to jambs. Cover horizontal framing joints by applying tapes to jambs, then to heads and sills.
- D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
- E. Do not remove release paper from tape until right before each glazing unit is installed.
- F. Apply heel bead of elastomeric sealant.
- G. Center glass lites in openings on setting blocks, and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.
- H. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.5 GASKET GLAZING (DRY)

- A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.
- B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.
- C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
- D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
- E. Install gaskets so they protrude past face of glazing stops.

3.6 SEALANT GLAZING (WET)

- A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.
- B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.
- C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.7 CLEANING AND PROTECTION

- A. Immediately after installation remove nonpermanent labels and clean surfaces.
- B. Protect glass from contact with contaminating substances resulting from construction operations. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains.
 - 1. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer. Remove and replace glass that cannot be cleaned without damage to coatings.
- C. Remove and replace glass that is damaged during construction period.
- D. Wash glass on both exposed surfaces not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by glass manufacturer.

3.8 GLASS SCHEDULE (Reference Drawings for Location) Fiberglass-Sandwich-Panel Assemblies

- A. Glass Type “A” : Fiberglass-Sandwich-Panel:
 - 1. Refer to Section 084523 - Fiberglass-Sandwich-Panel Assemblies
- B. Glass Type “B” INSULATED: Solar Control Low-E Insulating-Glass Units:
 - 1. Overall Unit Thickness: 1 inch.
 - 2. Thickness of Each Lite: 6.0 mm.
 - 3. Interspace Content: Air.
 - 4. Outdoor Lite (GLASS-1): Uncoated Clear Float-Glass Kind HS (heat-strengthened).
 - 5. Indoor Lite (GLASS-2): Coated Clear Float-Glass with Low-E coating on inboard (3) surface.
- C. Glass Type “C” INSULATED TEMPERED: Solar Control Low-E Insulating-Glass Units:
 - 1. Overall Unit Thickness: 1 inch.
 - 2. Thickness of Each Lite: 6.0 mm.
 - 3. Interspace Content: Air.
 - 4. Outdoor Lite (GLASS-1): Tempered Uncoated Clear Float-Glass Kind FT (Fully Tempered).
 - 5. Indoor Lite (GLASS-2): Tempered Coated Clear Float-Glass with Low-E coating on inboard (3) surface. Kind FT (Fully Tempered).
- D. Glass Type “D” 1/4 INCH CLEAR TEMPERED:

1. Thickness of Lite: 6.0 mm.
2. Lite (GLASS-1): Uncoated Clear Float-Glass Kind FT (Fully Tempered).

END OF SECTION 088000

SECTION 090170 - MAINTENANCE OF WALL FINISHES

PART 1 GENERAL**1.1 Summary**

- A. Provide cleaning of existing wall surface in preparation for resurfacing and/or recoating.

1.2 Related Documents

ASTM D 4258	Standard Practice for Surface Cleaning of Concrete for Coating
SSPC-SP 13/NACE 6	Surface Preparation of Concrete
ICRI No. 03732	Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays
Basis of Design: Sto Corp.	StoTherm® EIFS Reference Guide: Repair and Maintenance
Basis of Design: Sto Corp.	1.01 Stucco Repair and Maintenance

1.3 Materials – Cleaning Solutions

- A. General
 - 1. Mix and use commercially available cleaning solutions in accordance with the cleaning product manufacturer's instructions.
 - 2. Refer technical questions about specific commercial cleaning products to the cleaning product manufacturer.
 - 3. Use and dispose of cleaning solutions and rinse water in accordance with applicable local regulations.
 - 4. DO NOT USE solvent based cleaners (acetone, gasoline, ketones, mineral oils, or turpentine)

1.4 Mild Detergent Wash

- A. Solution of 1 – 2 cups tri-sodium-phosphate (TSP) or TSP substitute per gallon of warm water
- B. General Purpose Cleaner by Wind-lock Corp., www.wind-lock.com
- C. Wash Down™ by Demand Products, www.demandproducts.com
- D. EIFS Clean 'N Prep by PROSOCO, www.prosoco.com
- E. Other commercial general cleaners as recommended by the cleaning material manufacturer for the surface to be cleaned.

1.5 Efflorescence Removal

- A. Efflorescence and Scale Remover, by Demand Products
- B. Sentry Efflorescence and Scale Remover, by Wind-lock Corp.
- C. Other commercial efflorescence cleaners as recommended by the cleaning material manufacturer for the surface to be cleaned.

1.6 Algae and Mildew Removal

- A. Solution of ½ to 1 quart household bleach to 1 gallon of water (may be added to TSP detergent solution for general cleaning)
- B. Miracle Mildew Remover by Wind-lock Corp.
- C. Other commercial algae and mildew cleaners as recommended by the cleaning material manufacturer for the surface to be cleaned.

PART 2 Execution**2.1 General**

- A. The techniques described in this section may be used on painted or coated concrete, stucco or EIFS surfaces. All techniques are not necessarily appropriate for all substrates.
- B. Test method and material in an inconspicuous area to verify techniques and materials to be used.
- C. Use the least aggressive means that produces effective results.
- D. Use methods in compliance with applicable local regulations.
- E. Protect adjacent construction, property and landscaping from overspray where cleaning solutions are used.
- F. Follow applicable regulations for personal protective equipment when performing cleaning.

2.2 Application of Cleaning Solutions

- A. Commercial cleaning products:
 - 1. Select the appropriate cleaning solution and apply in accordance with the cleaning solution manufacturers recommendations.
 - 2. Rinse thoroughly with clean water to remove all residue and surface contaminants.
- B. Generic mild detergent wash:
 - 1. Apply mild detergent solution to the wall area to be cleaned.
 - 2. Rinse thoroughly with clean water to remove all residue and surface contaminants.
- C. Generic algae and mildew removal:
 - 1. Apply algae and mildew removal solution and allow to soak for minimum 15 minutes. (Reapplication may be necessary for severe growth).
 - 2. Use hand-scrubbing technique to remove streaking or other localized growth.
 - 3. Rinse thoroughly using clean water to remove all residue and surface contaminants.

2.3 Hand-Scrubbing

- A. Use hand scrubbing technique for localized stubborn stains that are resistant to low pressure washing techniques or otherwise require special treatment.
- B. Use soft to medium bristled brush

- C. Avoid overly aggressive scrubbing which could damage the existing coatings. DO NOT USE stiff-bristled or wire brushes.

2.4 Pressure Washing (as means of cleaning existing coating)

- A. Use cool or warm water. DO NOT USE steam or high temperature methods when existing coatings are to remain in-place
- B. Use minimum 30 degree fan tip
- C. Determine distance from wall and pressure required to provide satisfactory results without damage to existing coatings or substrates based on test area.
 - 1. Use pressure in the range of 2500 psi to 3000 psi for coatings applied to solid substrates (concrete, masonry, and stucco), unless undesirable effects are produced. If damage to existing coating occurs, adjust pressure, distance of tip from wall, or fan tip angle to achieve satisfactory results.
 - 2. Determine if architectural features are foam shapes to protect against accidental damage in cases where they are attached to solid substrates such as stucco, masonry or concrete. Limit pressure to 500 psi, maximum, for foam trim features.

2.5 Pressure Washing (as a means of removing existing coating layers)

- A. Determine pressure, fan tip angle and tip distance from wall as required to remove loose coatings or excess coating applications on solid substrates.
- B. Verify that the technique does not produce damage to the substrate and adjust as necessary.
- C. Dispose of rinse-water and waste in accordance with appropriate local regulations.

NOTE: A chemical paint stripper may be an option to improve efficiency in combination with pressure washing when existing coatings are to be removed. Consult with the paint stripper manufacturer for proper use and disposal of rinse-water and waste.

END OF SECTION 090170

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

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:

- 1. Non-load-bearing steel framing systems for interior gypsum board assemblies.
- 2. Suspension systems for interior gypsum ceilings, soffits, and grid systems.

B. Related Requirements:

- 1. Division Section 05 "Cold-Formed Metal Framing" for exterior and interior load-bearing and exterior non-load-bearing wall studs; floor joists; roof rafters and ceiling joists; and roof trusses.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

- A. Evaluation Reports: For firestop tracks, from ICC-ES.

PART 2 - PRODUCTS

2.1 FRAMING SYSTEMS

- A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.

- 1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
- 2. Protective Coating: Manufacturer's standard corrosion-resistant zinc coating.

- B. Studs and Runners: ASTM C 645.

1. Steel Studs and Runners:

- a. Minimum Base-Metal Thickness: 0.033 inch, minimum 20 gage.
- b. Depth: As indicated on Drawings.

- C. Slip-Type Head Joints: Where indicated, provide the following:

1. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
 - a. Products: Subject to compliance with requirements, provide one of the following:
 - 1) Clark/Dietrich Metal Framing; SLP-TRK Slotted Deflection Track.
 - 2) MBA Building Supplies; FlatSteel Deflection Track.
 - 3) Steel Network Inc. (The); VertiClip SLD Series.
 - 4) Superior Metal Trim; Superior Flex Track System (SFT).

D. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.

1. Minimum Base-Metal Thickness: Unless indicated on Drawings, provide 0.033 inch, minimum 20 gage.

E. Cold-Rolled Channel Bridging: Steel, 0.053-inch minimum base-metal thickness, with minimum 1/2-inch-wide flanges.

1. Depth: Unless indicated on Drawings, provide minimum 1-1/2 inches.
2. Clip Angle: Not less than 1-1/2 by 1-1/2 inches, 0.068-inch- thick, galvanized steel.

F. Hat-Shaped, Rigid Furring Channels: ASTM C 645.

1. Minimum Base-Metal Thickness: Unless indicated on Drawings, provide 0.033 inch, minimum 20 gage.
2. Depth: As indicated on Drawings.

G. Cold-Rolled Furring Channels: 0.053-inch uncoated-steel thickness, with minimum 1/2-inch wide flanges.

1. Depth: As indicated on Drawings.
2. Furring Brackets: Adjustable, corrugated-edge type of steel sheet with minimum uncoated-steel thickness of 0.033 inch.
3. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- diameter wire, or double strand of 0.048-inch-diameter wire.

2.2 STEEL SUSPENDED CEILINGS AND SOFFIT FRAMING

A. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- diameter wire, or double strand of 0.048-inch- diameter wire.

B. Grid Suspension System for Gypsum Board Ceilings: ASTM C 645, direct-hung system composed of main beams and cross-furring members that interlock.

1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Armstrong World Industries, Inc.; Drywall Grid Systems.
 - b. Chicago Metallic Corporation; Drywall Grid System.
 - c. USG Corporation; Drywall Suspension System.

2.3 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards.
 - 1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.
 - 1. Furnish concrete inserts and other devices indicated to other trades for installation in advance of time needed for coordination and construction.

3.3 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C 754.
 - 1. Gypsum Plaster Assemblies: Also comply with requirements in ASTM C 841 that apply to framing installation.
 - 2. Portland Cement Plaster Assemblies: Also comply with requirements in ASTM C 1063 that apply to framing installation.
 - 3. Gypsum Veneer Plaster Assemblies: Also comply with requirements in ASTM C 844 that apply to framing installation.
 - 4. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.
- B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- C. Install bracing at terminations in assemblies.
- D. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.4 INSTALLING FRAMED ASSEMBLIES

- A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

1. Single-Layer Application: 16 inches o.c. unless otherwise indicated.
 2. Tile Backing Panels: 16 inches o.c. unless otherwise indicated.
- B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- C. Install studs so flanges within framing system point in same direction.
- D. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.
1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
 2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
 - a. Install two studs at each jamb unless otherwise indicated.
 - b. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
 3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
 4. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
- E. Direct Furring:
1. Screw to wood framing.
 2. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.
- F. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.5 INSTALLING SUSPENSION SYSTEMS

- A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
1. Hangers: 48 inches o.c. unless otherwise indicated
- B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.
- C. Suspend hangers from building structure as follows:
1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
 - a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.

2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
 - a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.
 3. Do not attach hangers to steel roof deck.
 4. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
 5. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
 6. Do not connect or suspend steel framing from ducts, pipes, or conduit.
- D. Seismic Bracing: Sway-brace suspension systems with hangers used for support.
- E. Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.
- F. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

3.6 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.

END OF SECTION 092216

SECTION 092400 – CEMENT PLASTER (STUCCO) &
REPAIR OF PORTLAND CEMENT PLASTER (STUCCO) WALL ASSEMBLIES

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:
 - 1. Repair distress and construction deficiencies in portland cement-based plaster (stucco) walls.
 - 2. Repair nonstructural cracks in stucco brown coat and finish.
 - 3. Repair flashing and waterproofing deficiencies at stucco system terminations.
 - 4. Resurface wall to provide uniform appearance in accordance with owner's requirements.
 - 5. Exterior vertical plasterwork (stucco).

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project Site.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Show locations and installation of control and expansion joints, including plans, elevations, sections, details of components, and attachments to other work.
- C. Samples for Initial Selection: For each type of factory-prepared finish coat and for each color and texture specified.
- D. Repair and coating manufacturers' specifications, details, installation instructions and product data.
- E. Manufacturer's standard material warranty.
- F. A list of minimum three job references.

1.5 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
 - 1. Build mockups for each substrate and finish texture indicated for cement plastering, including accessories.
 - a. Size: **64 sq. ft.** or SF required to adequately show all conditions indicated below.
 - b. Location 1 – All Exterior Jamb, Head, Sill conditions, include soffit and exterior wing walls around 1 typical classroom room 104.
 - c. Location 2 – Transition from existing construction to new construction at the exterior wall of rooms #117 Girls & #115 Boys.
 - d. Location 3 – The Exterior Corner between rooms #115 Boys and #114 Computer Lab.
 - 2. For interior plasterwork, simulate finished lighting conditions for review of mockups.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 REFERENCES

- | | |
|---------------------|---|
| A. ASTM Standards | |
| ASTM C 926 | Specification for Portland Cement Plaster |
| ASTM C 1063 | Specification of Installation of Lath and Furring to Received Portland Cement-based Plaster |
| ASTM C 920 | Specification for Elastomeric Joint Sealants |
| B. Other References | |
| Sto RC 100 | reStore Guideline Cleaning Specification for Walls Surfaces |
| Sto | Sto Stucco Repair and Maintenance Guide |
| Sto S103 | Sto Specification S 103 Sto Powerwall Stucco |
| NWCB | Northwest Wall and Ceiling Bureau (NWCB) Portland Cement Plaster Resource Guide |
| ICRI | International Concrete Repair Institute (ICRI) Guidelines for Surface Preparation |
| SWRI | Sealant Waterproofing and Restoration Institute (SWRI) Validation Program for Wall Coatings (http://www.swrionline.org/validation/) |

1.7 DESIGN REQUIREMENTS

- A. A qualified repair contractor shall provide the services and details listed in this section.
- B. Determine repair scope and detail design requirements based on inspection of the field conditions.
- C. Provide crack repair detail for cracks not wider than 1/16-inch (1.6 mm) nominal width
- D. Provide crack repair detail for cracks wider than 1/16-inch (1.6 mm) but not wider than 1/8-inch (3.2 mm)
- E. Provide flashing installation, repair and/or replacement details for applicable conditions listed in 1.07 of this specification and indicate locations of each repair on project drawings. Flashing remediation shall be based on standard flashing requirements listed below and indications of distress or leakage observed during inspection.
 1. Provide head flashing above all window and door openings.
 2. Provide weep screed and/or flashing at the bottom of the stucco system.
 3. Terminate stucco system minimum 2-inches (51 mm) above paved grade and roofing materials.
 4. Terminate stucco system minimum 4-inches (102 mm) above soil and landscaped finished grades.
 5. Provide metal flashing for non-vertical or low slope projections to drain water away from the wall exterior.
 6. Provide control joint layout, 140 SF maximum coverage area without control joint.
- F. Integrate all flashing repair and replacement with the water-resistive barrier system to provide direct and continuous drainage to the exterior of the wall.

- G. Terminate stucco system using casing bead around perimeters of windows and doors. Provide minimum ½-inch-wide (12.5 mm) space between casing and window frame. Install sealant joint at perimeters of window, doors and mechanical penetrations.
- H. Indicate on the project drawings locations where resurfacing, refinishing, and/or recoating is required.
- I. Provide detail drawings consistent with Basis of Design - Sto guideline details and Sto product installation instructions.
- J. Where lath is cut to facilitate repairs, wire-tie replacement lath to surrounding lath with 1/2-inch (12.5 mm) overlap.
- K. As an option to flashing as noted in 1.04 D7, apply waterproof base coat with reinforcing mesh to stucco brown coat on the top surfaces of projecting elements and immediately above and below Projecting elements shall be sufficiently sloped to provide drainage to the exterior. Protect these surfaces with horizontal grade coating.

1.8 QUALITY ASSURANCE

- A. Manufacturer's requirements
 - 1. Stucco and finish material manufacturer shall be experienced provider of cementitious and polymer-based materials for use in stucco construction and repair for minimum 25 years.
 - 2. Stucco and finish manufacturer shall have a manufacturing quality control system that is certified to comply with ISO 9001-2008 and an environmental quality management system certified to comply with ISO 14001-2004.
- B. Contractor requirements
 - 1. Contractor shall be licensed and insured and shall have been engaged in stucco and stucco repair construction for minimum three years.
 - 2. Contractor shall be knowledgeable in the proper handling, use and installation of Sto or other manufacturer of materials..
 - 3. Contractor shall employ skilled mechanics who are experienced and knowledgeable in the repair procedures and requirements of the specified project.
 - 4. Contractor shall have completed minimum three projects of similar size, scope and complexity to the project being specified.
 - 5. Contractor shall provide the proper equipment, manpower and supervision on the job site to perform the repair procedures in accordance with Sto's published repair specifications, applicable Sto details and the contract documents.
- C. Inspection requirements
 - 1. Quality control inspections shall be provided for by the owner or owner's representative.
 - 2. Inspectors shall be qualified by experience to evaluate field conditions before and during the repair process and shall be familiar with the specified repair procedures prior to commencement of work.
 - 3. Inspections shall be provided at key intervals during each repair.
 - 4. Inspect locations for flashing repair and other locations where existing stucco must be removed after demolition of the cementitious stucco is completed; before any existing flashing is removed; and before any new materials are installed. Verify that the proposed repair is constructible and will function in the manner intended based on the visible conditions. Resolve any visible construction detail conflicts with the repair designer before allowing the contractor to proceed with the repair.

5. Inspect the condition of the water-resistive barrier and transition elements for visible evidence of material integrity and continuity of the system.
6. Inspect the conditions of newly installed or replaced flashing, water-resistive barrier components and replacement lath (if applicable) before installing the replacement scratch coat. Verify that flashing and water-resistive barrier installation is in accordance with the repair detail design. Verify visible continuity of the water-resistive barrier system to direct water to the exterior of the wall via the flashing.
7. Inspect the final appearance of each repair location to verify compliance with owner requirements.

1.9 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in their original sealed containers bearing manufacturer's name and product identification.
- B. Protect liquid products (pails) from freezing and temperatures greater than 90 degrees F (32 degrees C). Do not store in direct sunlight.
- C. Protect portland cement based materials (bag products) from moisture and humidity. Store under cover and off of the ground in a dry location.

1.10 PROJECT/SITE CONDITIONS

- A. Apply materials only when surface and ambient temperatures are above 40 degrees F (4 degrees C) and are expected to remain above 40 degrees F (4 degrees C) for 24 hours after application.
- B. Provide supplementary heat for installation in temperatures less than 40 degrees F (4 degrees C).
- C. Provide protection of surrounding areas and adjacent surfaces from spillage, splatter, overspray or other unintended contact with the materials that are being applied.

1.11 COORDINATION AND SCHEDULING

- A. Schedule repairs to permit inspections where specified in Section 1.05.
- B. Do not start repairs in an area unless sufficient work can be completed such that the area is weather-tight at the end of the work shift. Alternatively allow sufficient time before the end of the work shift to provide weather protection until work can resume.
- C. Coordinate with all trades involved to schedule work to result in the proper sequencing of materials within the repair (proper lapping of water resistive system components and flashing).
- D. Schedule finish and coating application to large areas such that each day's application will end at an architectural break.

1.12 WARRANTY

- A. Provide manufacturer's standard warranty for products used.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Provide stucco, surface leveling, primer, waterproofing, and coatings (as applicable) from single manufacturer:

1. Basis of Design - Sto Corp., 3800 Camp Creek PKWY, Building 1400, Suite 120, Atlanta, GA 30331; www.stocorp.com, 1-800-221-2397

- B. Provide galvanized metal lath and stucco accessory components from qualified manufacturer.

2.2 GLASS FIBER MESH REINFORCEMENT

- A. Provide alkali resistant, open weave glass fiber mesh reinforcing for surface leveling and waterproof base coat at all locations.
 1. Products:
 - a. Sto Mesh – alkali-resistant, glass-fiber reinforcing mesh for use with Sto base coat products to provide crack resistance.
 - b. Sto Detail Mesh – alkali-resistant, glass-fiber reinforcing mesh for use with Sto base coats to provide crack resistance and at system terminations.
 - c. StoGuard Mesh – self-adhesive mesh for use with Sto Gold Fill water resistive barrier joint and transition treatment.

2.3 LEVELER/BASE COAT/SKIM COAT

- A. Conditions vary, use the appropriate product based on the condition.
- B. Provide high-build polymer-modified portland cement-based base coat for surface leveling over cementitious finishes and brown coat.
 1. Products:
 - a. Sto Primer adhesive B – one-component, polymer-modified, cement based, dry powder material used as an adhesive and base coat

2.4 WATER-RESISTIVE BARRIER

- A. Provide water-resistive barrier coating and transition membrane system.
 1. Products:
 - a. Sto GoldCoat – fluid-applied waterproof air-barrier coating for moisture protection of sheathing, masonry and concrete substrates behind stucco cladding.
 - b. StoGuard Tape – fabric-faced, self-adhesive modified asphaltic flashing tape for use with Sto EmeraldCoat as transition at flashing, windows, mechanical penetrations and at system terminations.
 - c. StoGuard Fabric – non-woven fabric tape for use with Sto EmeraldCoat as a transition element by embedment of the StoGuard Fabric into wet EmeraldCoat. Used as transition membrane from Sto EmeraldCoat onto top edge of StoGuard Tape.
- B. Provide ASTM D 226 compliant asphalt saturated kraft building paper, Grade D, No. 15 (where required) over Sto GoldCoat.

2.5 PORTLAND CEMENT PLASTER

- A. Provide portland cement stucco scratch and brown coat.
 1. Products:
 - a. StoPowerwall 103 Stucco

- b. StoPowerwall 108 Scratch and Brown - Stucco Polymer Modified scratch and brown.

2.6 PORTLAND CEMENT

- A. Provide ASTM C 150 Type I, Type II, or Type I-II cement for mixing with Sto Flexyl.

2.7 PRIMER

- A. Provide pH resistant acrylic primer to be used on stucco brown coat.
 - 1. Product: Sto Prime

2.8 POLYMERIC FINISH

- A. Provide polymeric elastomeric or acrylic finish. Color and texture to be determined based on mockup.
 - 1. Elastomeric Finish products
 - a. Sto Powerflex – Elastomeric acrylic textured stucco finish

2.9 MIXING

- A. Mix in accordance with manufacturer’s printed instructions.
- B. Mix cementitious products with clean, potable water.

PART 3 EXECUTION

3.1 ACCEPTABLE INSTALLERS

- A. Prequalify repair contractor under Quality Assurance requirements of this specification (section 1.05.B).

3.2 EXAMINATION

- A. Field inspect locations in need of repair.
- B. Establish clear understanding of the repair scope and process with the mechanics that will perform the work for each individual location.

3.3 SELECTIVE DEMOLITION

- A. Use hearing, eye, ear and respiratory personal protective equipment when performing demolition.
- B. Provide adequate protection to persons and property from potential falling debris from demolition and repair construction.
- C. Stucco Removal:
 - 1. Saw cut perimeter of repair area with a masonry blade set to a depth that will not cut into the sheathing.
 - 2. Chip stucco at the edges of the saw cut to provide a minimum ½-inch perimeter of exposed lath where lath is to be repaired or replaced.
 - 3. Remove stucco such that patches will be square or rectangular shaped. Avoid re-entrant corners within patches and constructing patches with greater than 2.5: 1 length-to-width ratios.

- D. Finish removal:
1. Remove finish where required to cosmetically match finish texture with surrounding unaltered stucco. Finish shall be removed minimum 1-inch (25mm) around the perimeter of saw-cut or chipped areas, and on both sides of cracks to be repaired using crack-filling and bridging techniques. (Note: removal of finish can be omitted along crack repairs. However, a trial area should be done to verify that the finished appearance will comply with owner requirements because the crack repair will likely be visible.)
 2. Finish removal shall be by grinding, scraping, or chemical stripping product approved by the design professional.
 3. Use chemical stripping products in accordance with the product manufacturer's written instructions.
 4. Dispose of waste and rinse water from chemical stripping of finish in accordance with local regulations.

3.4 REPAIR OF CRACKS 1/16-INCH (1.6 mm) WIDE AND SMALLER

- A. Cracks not wider than 1/32-inch (0.8 mm) (hairline cracks).
1. Clean existing surface in accordance with Sto reStore Cleaning Specification RC100
 2. Coat wall surface with Sto Elastomeric Coating (Stolastic or StoSilco Lastic) in accordance with written product instructions.
- B. Cracks not wider than 1/16-inch (1.6 mm)
1. Remove finish along crack as specified in section 3.03.C.
 2. Clean crack using oil-free compressed air.
 3. Seal crack with Sto Flexible Crack Filler and tool surface flush with brown coat.
 4. Apply new finish to match surrounding texture and color.

3.5 REPAIR OF CRACKS 1/16-INCH (1.5mm) WIDE TO MAXIMUM 1/8-INCH (3.2mm) WIDE

- A. Remove finish along crack as specified in section 3.03.C.
- B. Clean crack using oil-free compressed air.
- C. Fill crack with Sto Flexible Crack Filler and tool surface flush.
- D. Apply Sto skim coat material (selected from section 2.05 of this specification) along both sides of crack and tool flat. Embed 2-inch wide (50 mm) strip Sto Detail Mesh generally centered on crack and tool into fresh Sto skim coat material using taping knife. Tool smooth to the thickness required to fully embed the mesh (approximately 1/16-inch (1.6 mm) thick). Allow skim coat to dry completely before applying finish.
- E. Apply new finish to match surrounding texture and color.

3.6 FLASHING REPLACEMENT

- A. Repair flashing and/or correct conditions in locations indicated on the project drawings and as described in section 1.04 of this specification.
- B. Remove stucco in accordance with section 3.01 of this specification.

- C. Remove enough area to permit proper installation of flashing as detailed in Sto Corp. guideline details for stucco construction (available at www.stocorp.com).
- D. Inspect the condition of the water-resistive barrier membrane and transition materials.
- E. Repair or replace damaged water resistive barrier system components.
- F. Install replacement components in a sequence and manner to provide shingle-laps and provide a continuous path for moisture drainage to the exterior of the wall via the flashing.
- G. Install new flashing components such that finished repair will comply with Sto Corp. guideline details for stucco construction.
- H. Mix and apply stucco scratch and brown coats in accordance with ASTM C 926 to match existing stucco thickness. Cover with polyethylene sheeting or otherwise moist-cure for minimum 48-hours.
- I. Where finish is specified directly to new stucco, prime the new stucco brown coat surfaces with Sto Hot Prime prior to finish application.
- J. Where further surface leveling or surface applied waterproofing is specified, apply leveler or waterproof base coat after completion of the 48-hour cure period.

3.7 SURFACE DEFECT REPAIR

- A. Localized finish repair
 - 1. Remove affected finish in accordance with section 3.03.C of this specification.
 - 2. Clean exposed brown coat surface to remove all dust, dirt, and other bond-inhibiting materials.
 - 3. Apply Sto Hot Prime in accordance with written product instructions.
 - 4. Apply finish to match surrounding stucco texture and color.
- B. Localized brown coat repair within field of wall
 - 1. Remove stucco in accordance with section 3.03 of this specification.
 - 2. Remove stucco minimum 2-inch (50 mm) in all directions beyond area of concern where lath replacement is required.
 - 3. Remove and replace damaged or corroded lath.
 - a. Remove damaged lath minimum 1-inch (25 mm) in all directions beyond area of concern.
 - b. Repair water-resistive barrier system as necessary to correct any damage that is either existing or caused by stucco and lath removal actions.
 - c. Cut replacement lath to provide minimum 1/2-inch (12.5 mm) overlap on all sides.
 - d. Wire tie new lath to existing lath at maximum spacing of 8-inches (203 mm).
 - e. Provide minimum 4 wire ties for small lath replacements.
 - 4. Mix and apply stucco scratch and brown coats in accordance with ASTM C 926 to match existing stucco thickness. Cover with polyethylene sheeting or otherwise moist-cure for minimum 48-hours.
 - 5. Where finish is specified directly to new stucco, prime the new stucco brown coat surfaces with Sto Hot Prime prior to finish application.
 - 6. Where further surface leveling or surface applied waterproofing is specified, apply leveler or waterproof base coat after completion of the 48-hour cure period.

- C. Remedial accessory installation
 - 1. Remove stucco in accordance with section 3.03 of this specification.
 - 2. Remove stucco a sufficient distance from accessory to permit removal of the existing accessory and wire-tie connection of new accessory.
 - 3. Remove and replaced damaged accessories
 - a. Cut damaged section of existing accessory and remove from wall.
 - b. Repair water-resistive barrier system if damage is present or occurs as a result of the accessory removal.
 - c. Wire tie new accessory to existing lath at maximum spacing of 8-inches (203 mm).
 - d. Provide minimum 4 wire ties for small lengths of replacement.
 - 4. Align new sections of corner and casing beads carefully to match adjacent accessories.
 - 5. Set both ends of all accessory replacements pieces in wet sealant. Mix and apply stucco scratch and brown coats in accordance with ASTM C 926 to match existing stucco thickness. Cover with polyethylene sheeting or otherwise moist-cure for minimum 48-hours.
 - 6. Where finish is specified directly to new stucco, prime the new stucco brown coat surfaces with Sto Hot Prime prior to finish application.
 - 7. Where further surface leveling or surface applied waterproofing is specified, apply leveler or waterproof base coat after completion of the 48-hour cure period.
- D. New accessory installation
 - 1. Remove stucco in accordance with section 3.03 of this specification in locations where required accessories are not present.
 - 2. Install new corner beads, casing beads, weep screeds or other accessories in accordance with ASTM C 1063.
 - 3. Set ends of accessories in wet sealant.
 - 4. Mix and apply stucco scratch and brown coats in accordance with ASTM C 926 to match existing stucco thickness. Cover with polyethylene sheeting or otherwise moist-cure for minimum 48-hours.
 - 5. Where finish is specified directly to new stucco, prime the new stucco brown coat surfaces with Sto Hot Prime prior to finish application.
 - 6. Where further surface leveling or surface applied waterproofing is specified, apply leveler or waterproof base coat after completion of the 48-hour cure period.

3.8 STUCCO DELAMINATION FROM CONCRETE SUBSTRATES

- A. Define repair area based on sounding and remove stucco to sound substrate.
- B. Extend repairs laterally to adjacent well-bonded material.
- C. Scarify or chip concrete substrates to provide a surface profile sufficient for bonding of new stucco application.
- D. ICRI surface profile minimum SP-3
- E. Clean prepared surface to remove all dust, dirt, laitance, oils and other potentially bond inhibiting materials.

- F. Check ability of surface to receive directly bonded stucco by checking for absorption of water into the concrete. If water does not readily absorb into concrete, provide additional surface preparation or mechanical anchorage for stucco.
- G. Install stucco in accordance with product instructions.

3.9 FINISH

- A. Apply Sto finish in accordance with Sto written instructions for the specified product.

3.10 COATING

- A. Prepare surface to receive Sto coating in accordance with Sto reStore Cleaning specification RC100.
- B. Apply Sto coating in accordance with Sto written instructions for the specified product.

END OF SECTION 092400

SECTION 092900 - GYPSUM BOARD

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:
 - 1. Interior gypsum board.
 - 2. Exterior gypsum board wall sheathing
 - 3. Tile backing panels
 - 4. Texture finishes
 - 5. Gypsum wall board accessories

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For the following products:
 - 1. Trim Accessories: Full-size Sample in 12-inch long length for each trim accessory indicated.
 - 2. Textured Finishes: Manufacturer's standard size for each textured finish indicated and on same backing indicated for Work.

1.4 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: For gypsum board assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Fire-Resistance-Rated Assemblies: Indicated by design designations from UL's "Fire Resistance Directory."
- B. Mockups: Before beginning gypsum board installation, install mockups of at least 100 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Install mockups for the following:
 - a. Each level of gypsum board finish indicated for use in exposed locations.
 - b. Each texture finish indicated.
 - 2. Apply or install final decoration indicated, including painting and wallcoverings, on exposed surfaces for review of mockups.
 - 3. Simulate finished lighting conditions for review of mockups.

4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.6 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.
- B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

2.2 GYPSUM BOARD, GENERAL

- A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. American Gypsum.
 2. CertainTeed Corp.
 3. Georgia-Pacific Gypsum LLC.
 4. National Gypsum Company.
 5. USG Corporation.
- B. Gypsum Board, Type X: ASTM C 1396/C 1396M.
 1. Thickness: 5/8 inch.

2. Long Edges: Tapered.

C. High Impact Resist Gypsum Wallboard:

1. "High Impact-Resistant Gypsum Wallboard", ASTM C 630 and C 1396, Type X, 5/8 inch thick, manufactured to produce Classification Level 3 - heavy duty resistance to surface indentation and through-penetration than standard gypsum panels, with core type and in thickness indicated, and with long edges tapered.
 - a. Available Products: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 1. National Gypsum Company; Fire-Shield Hi-Impact XP Wallboard

D. Abuse-Resistant Gypsum Board: ASTM C 1629/C 1629M.

1. Core: 5/8 inch, Type X.
2. Long Edges: Tapered.
Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.4 EXTERIOR GYPSUM BOARD WALL SHEATHING

- A. Panel Size: Provide in maximum lengths and widths available that will minimize joints in each area and correspond with support system indicated.
- B. Glass-Mat Gypsum Sheathing Board: ASTM C1177/C1177M, with Type X core, 5/8 inch thick unless otherwise indicated on Drawings.
 1. Available Product: Georgia-Pacific Gypsum Corp.; Dens-Glass Gold.
- C. Weather Barrier: Fluid Applied air and water barrier, See Section 072726.

2.5 TILE BACKING PANELS

- A. Panel Size: Provide in maximum lengths and widths available that will minimize joints in each area and correspond with support system indicated.
- B. Glass-Mat, Water-Resistant Backing Board: ASTM C 1178/C 1178M, with Type X core, 5/8 inch thick unless otherwise indicated on drawings. Provide tile backing panels behind all tile finish.
 1. Available Product: Georgia-Pacific Gypsum Corp.; Dens-Shield Tile Backer.

2.6 TRIM ACCESSORIES

- A. Interior Trim: ASTM C 1047.
 1. Material: Paper faced metal beads and trim products. Vinyl trim to receive joint compound
 - a. Available Product: USG; Beadex.
 - b. Available Product: TrimTex

2. Shapes:
 - a. Cornerbead: Use at outside corners.
 - b. L Bead: Where walls abut dissimilar surfaces.
 - c. Expansion (Control) Joint: Use where indicated and required per manufacturer's installation instructions.

2.7 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C 475/C 475M.
- B. Joint Tape:
 1. Interior Gypsum Board: Paper.
 2. Tile Backing Panels: As recommended by panel manufacturer.
- C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
 1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
 2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
 3. Fill Coat: For second coat, use drying-type, all-purpose compound.
 4. Finish Coat: For third coat, use drying-type, all-purpose compound.
 5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound.
- D. Joint Compound for Tile Backing Panels:
 1. Glass-Mat, Water-Resistant Backing Panel: As recommended by manufacturer.

2.8 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
 1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
- C. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
 1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- D. Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Accumetric LLC; BOSS 824 Acoustical Sound Sealant.
 - b. Grabber Construction Products; Acoustical Sealant GSC.
 - c. Pecora Corporation; AC-20 FTR.
 - d. Specified Technologies, Inc.; Smoke N Sound Acoustical Sealant.
 - e. USG Corporation; SHEETROCK Acoustical Sealant.

2.9 TEXTURE FINISHES

- A. Primer: As specified in Specification Section 099100.
- B. Non-Aggregate Finish: Pre-mixed, vinyl texture finish for spray application.
 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. CertainTeed Corp.; ProRoc Easi-Tex Spray Texture.
 - b. USG Corporation; BEADEx FasTex Wall and Ceiling Spray Texture.
 2. Texture: Medium Orange Peel.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates including welded hollow-metal frames and framing, with Installer present, for compliance with requirements and other conditions affecting performance.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.

- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
 - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
 - 2. Fit gypsum panels around ducts, pipes, and conduits.
 - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.
- G. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- H. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.
- I. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.
- J. Sound, Smoke, and Fire Isolation: Back-to-back penetrations, or openings within the same space between studs is unacceptable. Isolate one from the other with insulation, or other means approved by the Architect.

3.3 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
 - 1. Wallboard Type: As indicated on Drawings
 - 2. Abuse-Resistant Type: As indicated on Drawings.
 - 3. High Impact Resist Type: As indicated on Drawings.
- B. Single-Layer Application:
 - 1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
 - 2. On partitions/walls, apply gypsum panels horizontally (perpendicular to framing) unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
 - b. At stairwells and other high walls, install panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly.
 - 3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
 - 4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.
- C. Multilayer Application:
 - 1. On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing

- members and offset face-layer joints one framing member, 16 inches minimum, from parallel base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly.
2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
 3. On Z-furring members, apply base layer vertically (parallel to framing) and face layer either vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.
 4. Fastening Methods: Fasten base layers and face layers separately to supports with screws.

3.4 APPLYING TILE BACKING PANELS

- A. Glass-Mat, Water-Resistant Backing Panels: Comply with manufacturer's written installation instructions and install at locations indicated to receive tile. Install with 1/4-inch gap where panels abut other construction or penetrations.
- B. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.

3.5 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints, rounded or beveled edges, and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below, according to ASTM C 840, for locations indicated:
 1. Level 1: Embed tape at joints in ceiling plenum areas, concealed areas, and where indicated, unless a higher level of finish is required for fire-resistance-rated assemblies and sound-rated assemblies.
 2. Level 2: Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges where panels are substrate for tile.
 3. Level 4: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges at panel surfaces that will be exposed to view, unless otherwise indicated.

3.6 APPLYING TEXTURE FINISHES

- A. Surface Preparation and Primer: Prepare and apply primer to gypsum panels and other surfaces receiving texture finishes. Apply primer to surfaces that are clean, dry, and smooth.
- B. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture matching approved mockup and free of starved spots or other evidence of thin application or of application patterns.

- C. Prevent texture finishes from coming into contact with surfaces not indicated to receive texture finish by covering them with masking agents, polyethylene film, or other means. If, despite these precautions, texture finishes contact these surfaces, immediately remove droppings and overspray to prevent damage according to texture-finish manufacturer's written recommendations.

3.7 PROTECTION

- A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

SECTION 093000 – TILING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Floor tiles.
2. Wall tiles.
3. Waterproof membrane for thin set tile installations.
4. Crack-suppression membrane for thin-set tile installations.
5. Grouts
6. Metal edge strips installed as part of tile installations.

1.2 DEFINITIONS

- A. Module Size: Actual tile size (minor facial dimension as measured per ASTM C 499) plus joint width indicated.
- B. Facial Dimension: Actual tile size (minor facial dimension as measured per ASTM C 499).

1.3 PERFORMANCE REQUIREMENTS

- A. Static Coefficient of Friction: For tile installed on walkway surfaces, provide products with the following values as determined by testing identical products per ASTM C 1028:
1. Level Surfaces: Minimum 0.6.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show locations of each type of tile and tile pattern at wall locations only. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
1. Indicate locations of metal strips for floors and walls
- C. Samples for Verification:
1. Full-size units of each type and composition of tile and for each color and finish required.
 2. Full-size units of each type of trim and accessory for each color and finish required.
 3. Metal edge strips in 6 inch lengths.
- D. Master Grade Certificates: For each shipment, type, and composition of tile, signed by tile manufacturer and Installer.

- E. Product Certificates: For each type of product, signed by product manufacturer.
- F. Qualification Data: For Installer.
- G. Material Test Reports: For each tile-setting and -grouting product.

1.5 QUALITY ASSURANCE

- A. Manufacturers: Provide Products of company specializing in manufacture of wall and floor tiles (ceramic, porcelain, mosaics, etc.) with minimum experience of 10 years.
- B. Source Limitations for Setting and Grouting 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.
- C. Source Limitations for Other Products: Obtain each of the following products specified in this Section through one source from a single manufacturer for each product:
 - 1. Waterproofing.
 - 2. Joint sealants.
 - 3. Metal edge strips.
- D. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Installer to layout full size joint locations for floor and wall onsite. Layout to be approved by architect prior to installation.
- E. Installer Qualifications: Submit documentation that the flooring contractor employs installers that have:
 - 1. Installers: Execute work of this Section using a company who is a member in good standing with TCNA and has minimum 5 years successful experience in application of Products, systems and assemblies specified. Perform tile work using skilled mechanics trained and experienced in work of this complexity.
- F. Mockups:
 - 1. Construct a minimum [100 feet (10 m) square] mock-up complete with movement joint at Project location designated by Architect for acceptance. Ensure mock-up area is cleaned and properly prepared for tiling using specified setting and grouting materials in accordance with Specifications, Product instructions and discussions from pre-installation meeting. Ensure finish light scheme is replicated in area where mock-up is installed. During mock-up installation, ensure participants are present to observe substrate preparation, installation, grouting and cleaning procedures. Caution: When grouting with sanded grout, take special care and caution to prevent scratching, dulling or otherwise damaging tile natural surface appearance.
 - 2. After mock-up has cured and been inspected, discuss pertinent remarks, observations and recommendations in the presence of participants.
 - 3. Once accepted, mock-up including recorded remarks and recommendations remains part of finished work and used as a quality reference standard for balance of Project

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirement in ANSI A137.1 for labeling sealed tile packages.

- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Store liquid latexes and emulsion adhesives in unopened containers and protected from freezing.
- E. Handle tile that has temporary protective coating on exposed surfaces to prevent coated surfaces from contacting backs or edges of other units. If coating does contact bonding surfaces of tile, remove coating from bonding surfaces before setting tile.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.
- B. Concrete Curing: Do not install flooring material over concrete substrates unless substrates meet flooring, adhesive, or crack suppression membrane manufacturer's current requirements for bond test, calcium chloride test, relative humidity test and pH test.

1.8 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed, for each type, composition, color, pattern, and size indicated.
 - a. Verify amount of extra material required with Owner before Delivery.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, or are equal to, the manufacturers specified.

2.2 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1, "Specifications for Ceramic Tile," for types, compositions, and other characteristics indicated.
 - 1. Provide tile complying with Standard grade requirements, unless otherwise indicated.
 - 2. For facial dimensions of tile, comply with requirements relating to tile sizes specified in Part 1 "Definitions" Article.

- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI standards referenced in "Setting and Grouting Materials" Article.
- C. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCA installation methods specified in tile installation schedules, and other requirements specified.
- D. Colors, Textures, and Patterns: Where manufacturer's standard products are indicated for tile, grout, and other products requiring selection of colors, surface textures, patterns, and other appearance characteristics, provide specific products or materials complying with the following requirements:
 - 1. As specified in the Finish Legend on drawings.
- E. Factory Blending: For tile exhibiting color variations within ranges selected during Sample submittals, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.
- F. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, or are equal to, products specified.

2.3 TILE PRODUCTS

- A. Provide "Mosa.Tiles. Ultragres Porcelain Floor Tiles, unglazed", unglazed, dry-pressed, single fired, fully vitrified porcelain floor tiles, manufactured with Ultragres procedure in accordance with EN 14411 annex G (Bla) and in accordance with ANSI A137.1, Class P1 meeting or exceeding the following characteristics
 - 1. Product: As specified in the Finish Legend of the drawings.
 - 2. Composition: Porcelain
 - 3. Facial Dimensions: As specified in the Finish Legend of the drawings
 - 4. Color and Pattern: As specified in the Finish Legend of the drawings.
 - 5. Grout Color: be selected by Architect from manufacturer's full range.
- B. Provide "Mosa.Tiles. Glazed Wall tiles", glazed, dry-pressed ceramic wall tiles, with white body in accordance with ANSI A137.1, Class P4 meeting or exceeding the following characteristics.
 - 1. Product: As specified in the Finish Legend of the drawings.
 - 2. Composition: Porcelain
 - 3. Facial Dimensions: As specified in the Finish Legend of the drawings
 - 4. Color and Pattern: As specified in the Finish Legend of the drawings.
 - 5. Grout Color: be selected by Architect from manufacturer's full range.
- C. Wall Tile Trim Units: Matching characteristics of adjoining flat tile and coordinated with sizes and coursing of adjoining flat tile where applicable. Provide shapes as follows, selected from manufacturer's standard shapes:
 - 1. Outside corners on wall to receive metal accessory as indicated in drawings
 - 2. Top of tile wainscot to receive metal accessory as indicated in drawings
 - 3. Soffits where tile wraps from horizontal to vertical

2.4 WATERPROOFING AND CRACK SUPPRESSING MEMBRANES FOR THIN-SET TILE INSTALLATIONS

- A. General: Manufacturer's standard product that complies with ANSI A118.10. Submit one of the following products to the Architect for review.
- B. Unreinforced, Fluid-Applied Product: Liquid-latex rubber in a consistency suitable for trowel application and intended for use as waterproofing.
 - 1. Products:
 - a. Laticrete Hydroban or equal
 - 2. Coverage:
 - a. Floor- Cover 100% under tile
 - b. Wall- 6" up (behind cove base) in restrooms only
 - c. Showers- 100% under floor and wall tile

2.5 SETTING AND GROUTING MATERIALS

- A. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4, consisting of the following:
 - 1. Basis of Design: Laticrete 254 Platinum
 - 2. Prepackaged dry-mortar mix containing dry, redispersible, ethylene vinyl acetate additive to which only water must be added at Project site.
 - a. For wall applications, provide nonsagging mortar that complies with Paragraph F-4.6.1 in addition to the other requirements in ANSI A118.4.
 - b. Provide white mortar at all locations where glass tile is specified. Retain setting and grouting materials below as required for installation methods selected; delete others. For proprietary products, coordinate with list of manufacturers.
- B. Chemical-Resistant, Water-Cleanable, Tile-Setting and -Grouting Epoxy: ANSI A118.3.
 - 1. Laticrete, Spectralock or Equal

2.6 ELASTOMERIC SEALANTS

- A. General: Provide sealants, primers, backer rods, and other sealant accessories that comply with the following requirements and with the applicable requirements in Section 079200 "Joint Sealants."
 - 1. Sealants shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
 - 2. Use primers, backer rods, and sealant accessories recommended by sealant manufacturer.
- B. Colors: Provide colors of exposed sealants to match colors of grout in tile adjoining sealed joints unless otherwise indicated.
- C. One-Part, Mildew-Resistant Silicone Sealant: ASTM C 920; Type S; Grade NS; Class 25; Uses NT, G, A, and, as applicable to nonporous joint substrates indicated, O; formulated with fungicide, intended for sealing interior ceramic tile joints and other nonporous substrates that are subject to in-service exposures of high humidity and extreme temperatures.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. DAP Inc.; 100 percent Silicone Kitchen and Bath Sealant.
 - b. Dow Corning Corporation; Dow Corning 786.
 - c. GE Silicones; a division of GE Specialty Materials; Sanitary 1700.
 - d. Laticrete International, Inc.; Latasil Tile & Stone Sealant.
 - e. Pecora Corporation; Pecora 898 Sanitary Silicone Sealant.
 - f. Tremco Incorporated; Tremsil 600 White.

2.7 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Metal Edge Strips:
 1. Profile: As specified on drawings.
 2. Finish: As specified on drawings.
- C. Temporary Protective Coating: Product indicated below that is formulated to protect exposed surfaces of tile against adherence of mortar and grout; compatible with tile, mortar, and grout products; and easily removable after grouting is completed without damaging grout or tile.
 1. As recommended by manufacturer and/or supplier.
- D. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.
- E. Sealers used in interior locations must comply with VOC limits shown in Section 018113.

2.8 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.

1. Verify that substrates for setting tile are firm; dry; clean; free of oil, waxy films, and curing compounds; and within flatness tolerances required by referenced ANSI A108 Series of tile installation standards for installations indicated.
2. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed before installing tile.
3. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates according to manufacturer's current written recommendations to ensure adhesion of floor coverings. Refer to Division 3 cast-in-place concrete for further requirements.

B. Concrete Substrates: Prepare according to ASTM F 710.

1. Verify that substrates are dry and free of curing compounds, sealers, hardeners, and other materials that could have a detrimental effect.
2. Perform floor moisture, alkalinity, and bond tests in accordance with flooring manufacturer's current written directives. Proceed with flooring installation only after all tests meet flooring manufacturer's requirements.

C. If any of the above flooring, adhesive or crack suppression membrane manufacturer's current test requirements are not in compliance, architect shall be notified in writing. Work shall not proceed until slab is in compliance.

D. Provide concrete substrates for tile floors installed with thin set mortar that comply with flatness tolerances specified in referenced ANSI A108 Series of tile installation standards.

1. Fill cracks, holes, and depressions with trowelable leveling and patching compound according to tile-setting material manufacturer's written instructions. Use product specifically recommended by tile-setting material manufacturer.
2. Remove protrusions, bumps, and ridges by sanding or grinding.

E. Blending: For tile exhibiting color variations within ranges selected during Sample submittals, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

F. Field-Applied Temporary Protective Coating: Where indicated under tile type or needed to prevent grout from staining or adhering to exposed tile surfaces, precoat them with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.

3.3 INSTALLATION, GENERAL

A. Joint Widths: Install tile on floors and walls with the following joint widths:

1. Porcelain Tile: 1/8 inch.

- B. ANSI Tile Installation Standards: Comply with parts of ANSI A108 Series "Specifications for Installation of Ceramic Tile" that apply to types of setting and grouting materials and to methods indicated in ceramic tile installation schedules.
 - C. Comply with TCA's "Handbook for Ceramic Tile Installation" for TCA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
 - 1. For the following installations, follow procedures in the ANSI A108 Series of tile installation standards for providing 95 percent mortar coverage:
 - a. Tile floors in wet areas.
 - b. Tile floors composed of tiles 6 by 6 inches or larger.
 - D. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions, unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
 - E. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
 - F. Jointing Pattern: Lay tile in grid pattern, unless otherwise indicated. Align joints when adjoining tiles on floor, base, walls, and trim are same size. Lay out tile work as shown in the Construction Documents. Provide uniform joint widths, unless otherwise indicated.
 - G. Expansion Joints: Locate expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
 - 1. Locate joints in tile surfaces directly above joints in concrete substrates.
 - 2. Prepare joints and apply sealants to comply with requirements in Division 7 Section "Joint Sealants."
- 3.4 WATERPROOFING AND CRACK SUPPRESSION MEMBRANE INSTALLATION
- A. Install waterproofing to comply with ANSI A108.13 and waterproofing manufacturer's written instructions to produce waterproof membrane of uniform thickness bonded securely to substrate.
 - B. Install crack-suppression membrane to comply with manufacturer's written instructions to produce membrane of uniform thickness bonded securely to substrate.
 - C. Do not install tile over waterproofing until waterproofing has cured and been tested to determine that it is watertight.
- 3.5 WALL TILE INSTALLATION
- A. Install types of tile designated for wall installations to comply with requirements in the Wall Tile Installation Schedule, including those referencing TCA installation methods and ANSI setting-bed standards.
 - B. Metal Edge Strips: Install at locations as indicated on the drawings

- C. Grout Sealer: Apply grout sealer to grout joints according to grout-sealer manufacturer's written instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer and sealer that has gotten on tile faces by wiping with soft cloth.
- D. Joint Widths: Install tile on walls with the following joint widths:
 - 1. Glass and Stone Wall Tile: 1/8 inch or to match grout joint established on mesh by manufacturer.
 - 2. Glazed Porcelain Wall Tile: 1/8 inch.
- E. Elastomeric Sealants: Install where required by TCA. Provide where tile abuts another material.

3.6 CLEANING AND PROTECTING

- A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
 - 1. Remove grout residue from tile as soon as possible.
 - 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions, but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.
 - 3. Remove temporary protective coating by method recommended by coating manufacturer that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent it from clogging drains.
- B. When recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear.
- C. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
- D. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

END OF SECTION 093000

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Acoustical panels and exposed suspension systems for ceilings.
 - a. Acoustical ceiling panels
 - b. Exposed grid suspension system
 - c. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings
 - d. Perimeter Trim

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of size indicated below.
 - 1. Minimum 6 inch x 6 inch samples of specified acoustical panel; 8 inch long samples of exposed wall molding and suspension system, including main runner and 4 foot cross tees.
- C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each acoustical panel ceiling.
- D. Maintenance Data: For finishes to include in maintenance manuals.

1.4 QUALITY ASSURANCE

- A. Source Limitations:
 - 1. Acoustical Ceiling Panel: Obtain each type through one source from a single manufacturer.
 - 2. Suspension System: Obtain each type through one source from a single manufacturer.
- B. Seismic Standard: Provide acoustical panel ceilings designed and installed to withstand the effects of earthquake motions according to the following:
 - 1. UBC Standard 25-2, "Metal Suspension Systems for Acoustical Panel and for Lay-in Panel Ceilings."

2. Standard for Ceiling Suspension Systems Requiring Seismic Restraint: Comply with ASTM E 580.
3. Fire Performance Characteristics: When specified as "Fire Resistant", wood ceiling boards shall conform to Class 1, or A flame spread rating, when tested according to ASTM E-84

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver acoustical panels, suspension system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.
- C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
 1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical ceiling installation.

1.7 COORDINATION

- A. Coordinate layout and installation of acoustical panels and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

1.8 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 1. Acoustical Ceiling Panels: Full-size panels equal to 5.0 percent of quantity installed.
 2. Suspension System Components: Quantity of each exposed component equal to 2.0 percent of quantity installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the manufacturers specified.

2.2 ACOUSTICAL PANELS, GENERAL

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, or are equal to, products specified on finish legend of drawings.

2.3 METAL SUSPENSION SYSTEMS, GENERAL

- A. Metal Suspension System Standard: Provide manufacturer's standard direct-hung metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable requirements in ASTM C 635.
- B. Finishes and Colors, General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Provide manufacturer's standard factory-applied finish for type of system indicated.
- C. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated.
- D. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements:
 1. Zinc-Coated Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
 2. Size: Select wire diameter so its stress at three times hanger design load (ASTM C 635, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch-diameter wire.
- E. Seismic Struts: Manufacturer's standard compression struts designed to accommodate seismic forces.
- F. Seismic Clips: Manufacturer's standard seismic clips designed and spaced to secure acoustical panels in-place

2.4 METAL SUSPENSION SYSTEM FOR ACOUSTICAL PANEL CEILINGS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, or are equal to, products specified on finish legend of drawings.
- B. Wide-Face, Capped, Double-Web, Hot-Dip Galvanized, G60 (Z180), Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet, hot-dip galvanized according to ASTM A 653/A 653M, G60 (Z180) coating designation, with prefinished, cold-rolled, 15/16-inch-wide, aluminum caps on flanges.
 1. Structural Classification: Intermediate-duty system.
 2. End Condition of Cross Runners: Override (stepped) or butt-edge type.
 3. Face Design: Flat, flush.
 4. Cap Material: Steel or aluminum cold-rolled sheet.
 5. Cap Finish: White.

2EXECUTION

2.2 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

2.3 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.

2.4 INSTALLATION, GENERAL

- A. General: Install acoustical panel ceilings to comply with ASTM C 636 and seismic requirements indicated, per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
- B. Suspend ceiling hangers from building's structural members and as follows:
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
 - 2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
 - 4. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 - 5. Do not attach hangers to steel deck tabs.
 - 6. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 - 7. Space hangers not more than 48 inches o.c. along each member supported directly from hangers, unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
- C. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
 - 1. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet.
 - 2. Miter inside and outside corners accurately and connect securely.
 - 3. Do not use exposed fasteners, including pop rivets, on moldings and trim.

- D. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- E. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.
 - 1. Arrange directionally patterned acoustical panels as follows:
 - a. Install panels with pattern running in one direction parallel to long axis of space.
 - 2. For reveal-edged panels on suspension system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.

2.5 CLEANING

- A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095113

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

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:
 - 1. Resilient base.
 - 2. Resilient molding accessories.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Verification: For each type of product indicated, in manufacturer's standard-size Samples but not less than 12 inches long, of each resilient product color, texture, and pattern required.
- C. Product Schedule: As indicated in the drawings.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Furnish not less than 10 linear feet for every 500 linear feet or fraction thereof, of each type, color, pattern, and size of resilient product installed.

1.5 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
 - 1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.
- B. Mockups: Provide resilient products with mockups specified in other Sections.
- C. Installer Qualifications: Submit documentation that the flooring contractor employs installers that have:
 - 1. Completed three (3) commercial projects of similar scope, square footage and complexity.
 - 2. Are trained and/or certified by the flooring material manufacturer for installation of the flooring product specified.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F or more than 90 deg F.

1.7 PROJECT CONDITIONS

- A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F, in spaces to receive resilient products during the following time periods:
 - 1. 48 hours before installation.
 - 2. During installation.
 - 3. 48 hours after installation.
- B. Until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.
- C. Install resilient products after other finishing operations, including painting, have been completed.
- D. Concrete Curing: Do not install flooring material over concrete substrates unless substrates meet flooring manufacturer's requirements for bond test, calcium chloride test, relative humidity test and pH test

PART 2 - PRODUCTS

2.1 RESILIENT BASE – RA-1.

- A. Resilient Base:
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, those specified in the drawings.
- B. Resilient Base Standard: ASTM F 1861.
 - 1. Material Requirement: Type TV (vinyl, thermoplastic)
 - 2. Style: As indicated on finish legend in Drawings.
- C. Minimum Thickness: 0.125 inch
- D. Height: 4 inches
- E. Lengths: Coils in manufacturer's standard length.
- F. Outside Corners: job formed.
- G. Inside Corners: job formed.
- H. Colors and Patterns: As indicated on the finish legend in the drawings.

2.2 RESILIENT BASE – RA-2.

A. Resilient Base:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, those specified in the drawings.

B. Resilient Base Standard: ASTM F 1861.

1. Material Requirement: Type TV (vinyl, thermoplastic)
2. Style: As indicated on finish legend in Drawings.

C. Minimum Thickness: 0.125 inch

D. Height: 6 inches

E. Lengths: Coils in manufacturer's standard length.

F. Outside Corners: job formed.

G. Inside Corners: job formed.

H. Colors and Patterns: As indicated on the finish legend in the drawings.

2.3 RESILIENT MOLDING ACCESSORY – RA-3

A. Resilient Molding Accessory:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, those specified.

B. Description: Products as indicated in details on Drawings.

C. Material: PVC

D. Profile and Dimensions: As indicated on Drawings.

E. Colors and Patterns: To match adjacent wall base.

2.4 RESILIENT MOLDING ACCESSORY – RA-4

A. Resilient Molding Accessory:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, those specified.

B. Description: Products as indicated in details on Drawings.

C. Material: PVC

D. Profile and Dimensions: As indicated on Drawings.

- E. Colors and Patterns: To match adjacent wall base.

2.5 RESILIENT MOLDING ACCESSORY – RA-5

- A. Resilient Molding Accessory:
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, those specified.
- B. Description: Products as indicated in details on Drawings.
- C. Material: Aluminum.
- D. Profile and Dimensions: As indicated on Drawings.
- E. Finish: As indicated in details on Drawings

2.6 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.
- B. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.
- C. Do not install resilient products until they are same temperature as the space where they are to be installed.

1. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

- D. Clean substrates immediately before installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, and dust. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 RESILIENT BASE INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient base.
- B. 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.
- C. Install resilient base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.
- D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- E. Do not stretch resilient base during installation.
- F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.
- G. Preformed Corners: Install preformed corners before installing straight pieces.
- H. Job-Formed Corners:
 1. Outside Corners: Use straight pieces of maximum lengths possible. Form without producing discoloration (whitening) at bends. Shave back of base at points where bends occur and remove strips perpendicular to length of base that are only deep enough to produce a snug fit without removing more than half the wall base thickness.
 2. Inside Corners: Use straight pieces of maximum lengths possible. Form by cutting an inverted V-shaped notch in toe of wall base at the point where corner is formed. Shave back of base where necessary to produce a snug fit to substrate.

3.4 RESILIENT ACCESSORY INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient accessories.
- B. 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.

3.5 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protection of resilient products.
- B. Perform the following operations immediately after completing resilient product 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 resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- D. Cover resilient products until Substantial Completion.

END OF SECTION 096513

SECTION 096519 - RESILIENT TILE FLOORING

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:
 - 1. Resilient Solid Vinyl Tile/Plank Flooring.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For each type of resilient floor tile.
 - 1. Include floor tile layouts, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.
 - 2. Show details of special patterns.
- C. Samples: Full-size units of each color, texture, and pattern of floor tile required.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of floor tile to include in maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- 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. Floor Tile: Furnish one box for every **50** boxes or fraction thereof, of each type, color, and pattern of floor tile installed.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are competent in techniques required by manufacturer for floor tile installation and seaming method indicated.
- B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
 - 1. Coordinate mockups in this Section with mockups specified in other Sections.
 - a. Size & Location: Complete all resilient tile flooring in classroom 104 and continue into Corridor 101B for in Minimum 100 sq. feet. Include the 3 colors as indicated on drawings. for each type, color, and pattern.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 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 **55 deg F** or more than **85 deg F**. Store floor tiles on flat surfaces.

1.9 FIELD CONDITIONS

- A. Maintain ambient temperatures within range recommended by manufacturer, but not less than **65 deg F** or more than **85 deg F**, in spaces to receive floor tile during the following periods:
 - 1. 48 hours before installation.
 - 2. During installation.
 - 3. 48 hours after installation.
- B. Maintain the ambient relative humidity between 40% and 60% during installation.
- C. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than **55 deg F** or more than **85 deg F**.
- D. Close spaces to traffic during floor tile installation.
- E. Close spaces to traffic for 24 hours after floor tile installation.
- F. Install floor tile after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 HOMOGENEOUS RESILIENT TILE FLOORING

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Johnsonite, a Tarkett Company; iQ Granit.
- B. Thickness/Wearlayer: 0.080 inch (2 mm).
- C. For size specify: 12 inches by 24 inches (30.5 cm by 61 cm)
- D. Colors and Patterns: As selected by Architect from full range of industry colors.
- E. Test data:
 - 1. Total thickness (ASTM F386): 0.080 inches (2 mm)
 - 2. Flexibility (ASTM F137): Passes
 - 3. Chemical Resistance (ASTM F925): Passes
 - 4. Static Load Limit (ASTM F970): Passes 250 psi
 - 5. Resistance to Heat (ASTM F1514): $\Delta E \leq 8$
 - 6. Resistance to Light (ASTM F1515): $\Delta E \leq 8$
 - 7. Size, Tolerance (ASTM F2055): Passes
 - 8. Static Coefficient of Friction (ASTM D 2047): ≥ 0.5 SCOF
 - 9. Flammability (ASTM E648, Critical Radiant Flux): Class 1 (≥ 0.45 W/cm²)
 - 10. Limited Commercial Warranty: 10 years

2.2 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by floor tile manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by floor tile and adhesive manufacturers to suit floor tile and substrate conditions indicated.
 - 1. Tarkett 926 Resilient Flooring Adhesive (Use with iQ, Aria, Melodia, and Standard Plus)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

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. Concrete floors must be free of dust, solvent, paint, wax, oil, grease, residual adhesive, adhesive removers, film-forming curing compounds, silicate penetrating curing compounds, sealing, hardening or parting compounds, alkaline salts, excessive carbonation or laitence, mold, mildew, and other foreign materials that may affect dissipation rate of moisture from the concrete, discoloration or adhesive bonding.
 - 2. Mechanically remove contamination on the substrate that may cause damage to the resilient flooring material. Permanent and non-permanent markers, pens, crayons, paint, etc., must not be used to write on the back of the flooring material or used to mark the substrate as they could bleed through and stain the flooring material.
 - 3. Perform moisture testing as recommended by manufacturer. Proceed with installation only after substrates have been tested and meet the minimum requirements from the manufacturer in accordance with ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride or ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
 - 4. A pH test for alkalinity must be conducted on the concrete floor prior to installation with results between 7 and 9. If the test results are not within the acceptable range, then installation must not proceed until the problem has been corrected.
- C. Fill cracks, holes, depressions and irregularities in the substrate with good quality Portland cement based underlayment leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.
- D. Floor covering shall not be installed over expansion joints.
- E. Do not install resilient products until they are same temperature as the space where they are to be installed.
 - 1. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation. Retain "Access Flooring Panels" Paragraph below for floor tile installed on access flooring.
- F. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.3 FLOOR TILE INSTALLATION

- A. Comply with manufacturer's written instructions for installing floor tile.

- B. 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 **in pattern indicated**.
- C. 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**.
- D. 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.
- E. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.
- F. 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.
- G. Install floor tiles on covers for telephone and electrical ducts, building expansion-joint covers, and similar items in installation 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.
- H. Adhere floor tiles to 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.

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 surfaces.
 - 2. Sweep and vacuum surfaces thoroughly.
 - 3. Damp-mop surfaces to remove marks and soil.
- C. Wait 72 hours after installation before performing initial cleaning.
- D. Protect floor tile from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
 - 1. No traffic for 24 hours after installation.
 - 2. No heavy traffic, rolling loads, or furniture placement for 72 hours after installation.
- E. Cover floor tile until Substantial Completion.

END OF SECTION 096519

SECTION 096813 – CARPET TILE

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 modular carpet tile.
- B. Related Requirements:
 - 1. Section 024119 "Selective Demolition" for removing existing floor coverings.
 - 2. Section 096513 "Resilient Base and Accessories"

1.3 SUBMITTALS

- A. Shop Drawing showing columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required as well as direction of carpet pile and pattern, location of edge moldings and edge bindings shall be submitted to the Architect for approval prior to installation.
- B. Floor schedule using same room designations indicated on drawings.
- C. Product Data: Provide data on specified products, describing physical and performance characteristics, sizes, patterns, colors available, and method of installation.
- D. Verification Samples: Submit samples illustrating color and pattern for each carpet material specified.
- E. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.
- F. Maintenance Data: Include maintenance procedures, recommendations for maintenance materials and equipment, and suggested schedule for cleaning.
- G. Manufacturer's Product Warranty.
- H. Verification of product Recycled Content Certification and product Certification to NSF 140.
- I. Transition details to other flooring materials.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For carpet tiles to include in maintenance manuals. Include the following:
1. Methods for maintaining carpet tile, including cleaning and stain-removal products and procedures and manufacturer's recommended maintenance schedule.
 2. Precautions for cleaning materials and methods that could be detrimental to carpet tile.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications
1. Company specializing in manufacturing specified carpet with minimum 10 years documented experience.
 2. Upon request, manufacturer to provide representative to assist in project start-up and to inspect installation while in process and upon completion. Representative will notify designated contact if any installation instructions are not followed.
 3. Single Source Responsibility: Obtain each type of product from one source and by a single manufacturer.
- B. Installer Qualifications
1. Flooring contractor to be a specialty contractor normally engaged in this type of work and shall have prior experience in the installation of these types of materials.
 2. Flooring contractor possessing Contract for the product installation shall not sub-contract the labor without written approval of the Project Manager.
 3. Flooring contractor will be responsible for proper product installation, including floor testing and preparation as specified by the manufacturer and JOB CONDITIONS herein.
 4. Flooring contractor to provide Owner a written installation warranty that guarantees the completed installation to be free from defects in materials and workmanship for a period of one year after substantial completion.

1.6 DELIVERY, STORAGE, & HANDLING

- A. Deliver materials to the site in manufacturer's original packaging listing manufacturer's name, product name, identification number, and related information.
- B. The temperature of the interior environment, including the sub floor should be no lower than 65°F and no higher than 90°F at least 72 hours prior to, during and after the tile installation. All Tarkett products and installation materials should be stored between 65°F and 90°F for at least 48 hours prior to installation. Relative humidity should be no more than 65%.
- C. Make stored materials available for inspection by the Owner's representative.
- D. Store materials in area of installation for minimum period of 48 hours prior to installation.

1.7 PROJECT CONDITIONS

- A. Sub-floor preparation is to include all required work to prepare the existing floor for installation of the product as specified in this document and Manufacturer's installation instructions.
- B. See Basis of Design - ER3 Modular Installation & Floor Preparation Instructions for specific requirements for moisture vapor emission rate, ambient conditions, and other requirements.
- C. All material used in sub-floor preparation and repair shall be recommended by the carpet manufacturer and shall be chemically and physically compatible with the carpet system being bid.
- D. Maintain minimum 65 degrees F ambient temperature and 65% Relative Humidity for 72 hours prior to, during, and 48 hours after installation.
- E. Do not install flooring until space is enclosed and weatherproof, wet-work in space is completed and nominally dry, work above ceilings is complete, and ambient temperature and humidity conditions are and will be continuously maintained at values near those indicated for final occupancy.

1.8 EXTRA MATERIALS

- A. Provide additional 5% of product for "attic stock."

PART 2 - PRODUCTS

2.1 RECYCLED CONTENT

- A. Product must contain a minimum of 45% recycled content by weight. This percentage is calculated by dividing the weight of recycled content in one square yard of finished carpet by the total weight of one square yard of finished product and multiplying by 100.
- B. Product must contain 20% post-consumer recycled content by weight from recycled post consumer carpet. This ensures that carpet is diverted from landfills for the production of the product and that virgin resource use in the product is reduced.
- C. Recycled content must be certified by a neutral, independent, third party organization such as Scientific Certification Systems. Product must carry product label certifying overall recycled content (including post-industrial and post-consumer content). Report percentage of post-industrial and post-consumer recycled content as a percentage of total product weight.
- D. Product must be available inclusive of 100% recycled content secondary backing.
 - 1. Recycled content and post consumer content must not be subject to availability. Post industrial and post consumer recycled content of product installed must be the same as those required by Project requirements.
 - 2. Also, Recycled content must be expressed as an exact percentage or a range. Statements such as "up to 60%" recycled content are not acceptable.

3. Manufacturer must fully comply with FTC Part 260 “Guides for the Use of Environmental Marketing Claims,” with respect to advertising, labeling, product inserts, catalogs and sales presentations of all its flooring products submitted and sold.

2.2 PRODUCT RECYCLABILITY

- A. Product must meet FTC Guides for recyclability and must be one hundred percent (100%) closed-loop recyclable back into flooring. A manufacturer cannot claim that a product or any portion of a product that is incinerated is recyclable, even if incineration is used to produce heat and power (i.e. waste-to-energy) per FTC Guides 16 CFR section 260.7 (d) example 3.
- B. Recyclability of product installed must be the same as those required by Project requirements.

2.3 RECYCLING PROGRAM

- A. Manufacturer must have a collection and recovery system for product and a fully established, currently operational recycling program at time of bid per FTC Guides Section 260.7 (d).
- B. Manufacturer’s Recycling Facility must be certified by a neutral, independent, third party organization such as Scientific Certification Systems. Provide documentation showing certification of Recycling Facility.
 1. Manufacturer must be able to reclaim and recycle 100% of installed carpet. Like materials as installed must be 100% recycled.
 2. Manufacturer’s Recycling Facility must be certified by a neutral, independent, third party organization such as Scientific Certification Systems. Provide documentation showing certification of Recycling Facility.
 3. Manufacturer must have written guarantee that 100% of the recovered vinyl backed carpet will be recycled and that no portion of the product will be landfilled or incinerated (including waste-to-energy).

2.4 NSF 140 CERTIFICATION

- A. Product must be certified at the Platinum level to ANSI standard **NSF 140**, the Sustainable Carpet Assessment Standard (SCAS). Product certification must be conducted by an independent, third party organization such as Scientific Certification Systems. Provide documentation..

2.5 PRODUCT WARRANTY

- A. Warranty to be sole source responsibility of the Manufacturer. Second source warranties and warranties that involve parties other than the carpet manufacturer are unacceptable.
- B. If the product fails to perform as warranted when properly installed and maintained, the affected area will be repaired or replaced at the discretion of the Manufacturer.
- C. Chair pads are not required, but are recommended for optimum textural performance. Absent the use of chair pads, more intensive maintenance will be required for areas in direct contact with chair caster traffic, and some degree of appearance change is to be expected.
- D. The non-prorated lifetime limited warranty shall specifically warrant against:

1. Excessive Surface Wear: More than 15% loss of pile fiber weight
2. Excessive Static Electricity: More than 3.0 kV per AATCC 134
3. Resiliency Loss of the Backing: More than 10% loss of backing resiliency
4. Delamination
5. Edge Ravel
6. Zippering

E. Tuft Bind warranty in lieu of edge ravel and zippering is not acceptable.

2.6 FIBER

- A. Nylon Fiber: Bulked Continuous Filament (BCF) Nylon in a loop pile construction Tarkett Dynex SD .
- B. For yarn containing recycled content, report post consumer and post industrial recycled content of the pile face yarn based on total yarn weight i.e. Recycle Content in Pile Face Yarn / Total Weight of Pile Face Yarn x 100
- C. Fiber to contain carbon-core filament for permanent static control. Topical treatments are not acceptable.
- D. Durable soil protection should be applied to the fiber during product manufacturing to resist fiber soiling. Application Rate: 2% of Face Weight.

2.7 BACKING CHARACTERISTICS

- A. Primary Backing: Synthetic Non-Woven.
- B. Secondary Backing: ER3 100% Recycled Content
 1. Density (ASTM D-1667): Min. 65 lbs/cu ft +/- 5%
 2. Standard Size: 24" x 24"
 3. Recycled Content: 100% Recycled Content Secondary Backing
 4. Fiberglass Reinforced
 5. Face yarn fully fused to secondary backing system that will not delaminate.
 6. Delamination: No delamination per ASTM D3936
 7. Product must not contain pesticides (US EPA Registered Antimicrobials). Installation adhesives are exempt from this section.

2.8 PERFORMANCE CHARACTERISTICS

- A. Test reports for the following performance assurance testing to be submitted upon request. Submitted results shall represent average results for production goods of the referenced style. Requirements listed below must be met by all products.
 1. Flooring Radiant Panel
ASTM E-648 / NFPA 253: Class 1 (CRF: 0.45 watts/sq cm or greater)
 2. Federal Flammability
CPSC FF 1-70: Passes

3. Smoke Density
ASTM E-662 / NFPA 258: ≤ 450 Flaming Mode
4. Electrostatic Propensity
AATCC 134 (Step & Scuff): 3.0 kV or less
5. Static Coefficient of Friction
ASTM C-1028: Passes ADA Requirements for Accessible Routes (minimum 0.60)
6. Delamination of Secondary Backing of Pile Floor Coverings
ASTM D-3936: No Delamination
7. Lightfastness
AATCC 16E: ≥ 4 @ 100 hours solution dyed
8. TARR
Severe Traffic: 4.0
9. Dimensional Stability
Aachen / ISO 2551: Maximum Change $\pm 0.149\%$
10. Other
As specified in 2.05, 2.06 and 2.07 of this document

2.9 PRODUCT SPECIFICATIONS

A. Basis of Design - Manufactured by Tarkett

1. Accentuate ER3® Modular Color: As indicated on Drawings
 - A. Construction: Stratatec® Patterned Loop
 - B. Gauge: 5/64
 - C. Stitch Rate: 9.6 pile units / inch
 - D. Tuft Density: 122.88 tufts/sq. inch
 - E. Pile Height Average: 0.187"
 - F. Pile Thickness: 0.103"
 - G. Density Factor (UM44D): 6,641 oz. /cu. yd.
 - H. Fiber System: Dynex SD® Nylon with Static Control & Eco-Ensure (Permanent Stain Resistance)
 - I. Dye Method: Solution
 - J. R-Value: 0.46 Minimum Hr-ft²-°F/Btu
 - K. Static Coefficient of Friction: ASTM C-1028; Passes ADA requirements.
 - L. Static Propensity: AATCC 134: 3.5 kv or less
 - M. Flooring Radiant Panel: ASTM E-648 or NFPA 253: Class 1
 - N. Acoustic Requirements: Noise Reduction Coefficient (NRC): 0.10 Minimum
 - O. Secondary Backing Density: Min. 65 lbs/cu ft +/- 5%
 - P. Secondary Backing Recycled Content: 100% Recycled Content Secondary Backing
 - Q. Total Weight: 129.5 oz/sq yd +/- 5%
 - R. Third Party Certification: NSF 140 Platinum rating
 - S. Total Product Recycled Content (based on Total Weight) Minimum 53.2%
 - T. Total Product Post-Consumer Content (based on Total Weight) 16.6%

- U. Environmental Impact: No pesticides added to product (US EPA Registered Antimicrobials)

- B. Substitutes/Alternates

Subject to compliance with all requirements, “or equal” must match the selected colors, have similar aesthetic appearance and tuft density, factory-applied “dry” adhesive, equivalent NSF 140 certification, recycled content certification labels and recyclability. Substitution sample and submittals must be submitted for written approval of quality and color at least ten days prior to bid to be considered. Sample of proposed substitute must be inclusive of both the face and proposed backing (color-only sample not acceptable).

2.10 ACCESSORIES

- A. Materials recommended by Manufacturer for patching, leveling, priming, etc.
- B. Base, Carpet Edge, and Transition Strips: As specified in applicable sections.

PART 3 - EXECUTION

3.1 EXAMINATION / PREPARATION

- A. Prepare sub-floor to comply with criteria established in Manufacturer’s installation instructions. Use only preparation materials that are acceptable to the Manufacturer.
 - 1. Remove all deleterious substances from substrate(s) that would interfere with or be harmful to the installation.
 - 2. Remove sub-floor ridges and bumps. Fill cracks, joints, holes, and other defects.
- B. Verify that sub-floor is smooth and flat within specified tolerances and ready to receive carpet.
- C. Verify that substrate surface is dust-free and free of substances that would impair bonding of product to the floor.
- D. Verify that concrete surfaces are ready for installation by conducting moisture and pH testing. Results must be within limits recommended by Manufacturer.
- E. There will be no exceptions to the provisions stated in the Manufacturer’s installation instructions.

3.2 INSTALLATION - GENERAL

- A. Install product in accordance with Manufacturer’s installation instructions. Product must have low VOC, factory applied, “dry” adhesive. A peel & stick method applied to the back at the time of manufacture is preferred.
- B. Adhesive must meet the requirements of CRI’s Green Label Plus program for adhesive. Provide documentation.

- C. No US EPA registered pesticides (antimicrobials) are to be added to the product. Antimicrobial treatments are registered with the EPA as preservatives of the products only, and no health benefit should be claimed or expected. If antimicrobials are added then third party documentation with a seal is required stating that the pesticides used will cause NO HARM to the occupants. Installation adhesives are exempt from this section.
- D. Product as installed to be securely attached to the floor in compliance with Americans with Disabilities Act (ADA), Section 4.5.3.
- E. Where demountable partitions or other items are indicated for installation on top of finished carpet tile floor, install carpet tile before installation of these items.
- F. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings.
- G. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- H. Roll with appropriate roller for complete contact of product with adhesive to sub-floor.
- I. Trim carpet neatly at walls and around interruptions. Completed product is to be smooth and free of bubbles, puckers, and other defects.

3.3 PROTECTION & CLEANING

- A. Remove excess adhesive and/or other from floor and wall surfaces without damage.
- B. All rubbish, wrappings, debris, trimmings, etc. to be removed from site and disposed of properly.
- C. Clean and vacuum surfaces using a beater brush/bar commercial vacuum.
- D. After each area is installed, protect from soiling and damage by other trades.

END OF SECTION 096813

SECTION 097200 - WALL COVERINGS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. This section includes the following Cork Wall Coverings:
 - 1. Bulletin Board
- B. Sections related to this section include:
 - 1. Resilient Accessories: Refer to Division 9 Finishes Sections for resilient wall bases

1.03 REFERENCES

- A. Safety Data Sheets (MSDS or SDS)
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM C 840 – Standard Specification for Application and Finishing of Gypsum Board
 - 2. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials
 - 3. ASTM F 141 – Standard Terminology Relating to Resilient Floor Coverings
 - 4. ASTM F 1482 – Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring
 - 5. ASTM F 1861 – Standard Specification for Resilient Wall Base

1.04 SUBMITTALS

- A. General: Submit each item in this Article according to the "Conditions of the Contract" and Division 1 Specification Sections.
- B. Product Data: Submit the manufacturer's technical data and installation recommendations for each type of material and accessory products specified.
- C. Samples: Submit samples of each type, color and finish of material and accessory products specified, with an indication of full range of color, pattern and texture variation. Provide samples with a minimum size of 6" x 9" for products and 6" in length for accessories.
- D. Quality Assurance Submittals:
 - 1. Submit the manufacturer's Product Technical Data Sheet, specifying performance characteristics, criteria and physical requirements.
 - 2. Submit the manufacturer's written installation recommendations.
- E. Closeout Submittals:
 - 1. Submit three (3) copies of the maintenance and operations data. This should include methods for maintaining the installed products and any precautions against cleaning materials or methods that are detrimental to the product and their performance.
 - 2. Submit three (3) copies of the warranty as specified herein.
 - 3. Installer Certification: Submit proof of certification from the manufacturer certifying that the installers comply with the specified requirements.

- F. Replacement Material: After completion of work, deliver to project site replacement materials from the same manufactured lot as materials installed. Package materials with protective covering and identify each with descriptive labels.
1. Materials: No less than 50 square feet of each type, pattern and color installed.
 2. Accessories: No less than 10 linear feet for each 500 linear feet or fraction thereof each different type and color installed.

1.05 QUALITY ASSURANCE

- A. Manufacturer: Whenever possible, provide each type of material as provided by a single manufacturer, including recommended primers, adhesives, sealants, patching and leveling compounds.
- B. Contractor Qualifications:
1. The awarded contractor shall be an established firm, experienced in the installation of the specified product and shall have access to all manufacturer's required specifications, technical, installation and maintenance related documents.
- C. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.
- D. Regulatory Requirements: Provide products with the following fire performance characteristics as determined by testing identical products in accordance with the latest version of ASTM method indicated below by a certified testing laboratory or another testing and inspecting agency acceptable to authorities having jurisdiction.
1. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials
- E. Standard of Quality Mock-Up: For the purpose of evaluating the quality of workmanship, install a mock-up of the specified material completed by the pre-qualified installers following the manufacturer's installation recommendations. Obtain Owner's and Architect's acceptance of finish color, texture and pattern, and workmanship standard. Comply with requirements according to the "Quality Control" in Division 1 Mock-Up Requirements Section.
1. Size and Location of Mock-Up: One full size (48" x 60") framed cork wall covering as shown on the drawings in Classroom 104. Also one full size mock-up of the full height cork wall covering in Corridor 101B outside on Classroom 104. Include corner guards, wall base, and materials shown on the drawings.
 2. Maintenance of Mock-Up: Maintain mock-up during construction for workmanship comparison
 3. Approval of Mock-Up: Upon approval of the mock-up, this installation shall be considered the standard of quality and basis of comparison for the balance of the project. Areas to be found deficient by specification standards or application procedures shall be repaired or replaced at the contractor's expense.
 4. Incorporation of Mock-Up: The mock-up may be incorporated into final construction upon Architect's approval.

1.06 WARRANTY

- A. Manufacturer's Warranty: Submit the manufacturer's standard warranty document executed by authorized company official for Owner's acceptance. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.
1. Warranty Period: Five (5) year limited warranty commencing on Date of Original Purchase from manufacturer.
- B. Installation Warranty: Submit the contractor's installation warranty signed by the General Contractor and Installer for Owner's Acceptance, agreeing to repair or replace work which has failed as a result of defects in workmanship. Failure shall include, but not limited to, tearing, cracking, separation,

deterioration or loosening from substrate, seam failure, ripples, bubbling or puckering. Upon notification of such installation deficiencies, within the warranty period, make necessary repairs or replacement at the convenience of the Owner. Other guaranties or warranties may not be substituted by the Contractor for the terms of this warranty. Installation warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents

1. Warranty Period: One (1) year limited warranty commencing on Date of Substantial Completion from contractor.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. General: Comply with the Division 1 Product Requirements Sections.
- B. Ordering: Comply with the manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- D. Storage and Protection: Store materials protected from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer.
 1. All materials (including adhesives and accessories) should be stored in areas that are fully enclosed and weathertight. The permanent HVAC should be fully operational and controlled and set at a minimum temperature 65° F (18.3° C). If this is not possible, the areas should be acclimated and controlled by means of temporary HVAC to the service level conditions expected during occupancy. The temperature and humidity should range from 75° F ± 10° F (23.9° C ± 5.5° C) with a 50% ± 10% ambient relative humidity.
 2. Store rolls standing upright, labels up, and ensure that the color, roll and batch numbers can be easily read.
 3. Comply with the manufacturer's recommendation for the acclimation of all materials in the space where they will be installed for at least 48 hours prior to the installation unless longer conditioning periods are required by the manufacturer.

1.08 PROJECT CONDITIONS

- A. Environmental Requirements/Conditions:
 1. Areas to receive material should be clean, fully enclosed and weather tight. The permanent HVAC should be fully operational and controlled and set at a minimum temperature 65° F (18.3° C). If this is not possible, the areas should be acclimated and controlled by means of temporary HVAC to the service level conditions expected during occupancy. The temperature and humidity should range from 75° F ± 10° F (23.9° C ± 5.5° C) with a 50% ± 10% ambient relative humidity. These conditions **MUST** be established at least seven days prior to beginning the installation, maintained during the installation, and continued for at least seven days following the installation.
 2. The material should be conditioned in the same manner for at least 48 hours prior to the installation.
 3. Substrate evaluation and preparation should not begin until a stable, conditioned environment has been established as described in this section.
 4. Areas to receive material must have adequate lighting to allow for proper inspection and preparation of the substrate, installation of the material and final inspection.
- B. Temperature Requirements: Maintain air temperature in spaces where products will be installed for time period before, during, and after installation as recommended by manufacturer.
 1. Temperature Conditions: 65° F (18.3° C) for at least seven days prior to beginning the installation, maintained during the installation, and continued for at least seven days following the installation.

PART 2 PRODUCTS**2.01 CORK WALL COVERING**

- A. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following Basis-of-Design. Submit equal or better products for approval under provisions of Substitutions requirements Section 01 6300.
- B. Basis-of-Design:
 - 1. Cork wall covering manufactured by Forbo Flooring, Inc.
 - a. Material Name: Bulletin Board
 - 2. Description: Homogeneous tackable surface material made primarily of natural materials consisting of linseed oil, cork, rosin binders and dry pigments mixed and calendared onto natural jute backing. Pattern and color shall extend throughout total thickness of material.
 - 3. Width: 48" and 72"
 - 4. Gauge: 6.0 mm (1/4")
 - 5. Backing: Jute
 - 6. Color and Pattern: Colors and patterns shall be selected by Architect. Patterns shall be defined in any given area, applied in stripes, diagonals, checkerboard pattern and other designs as determined by the Architect. All selections shall be made from the manufacturer's full product lines. See Architectural drawings for color schedule list in reference to this material.
 - 7. Adhesive: Forbo L 910W Adhesive
 - 8. Net Fit Seams: All Bulletin Board products shall be installed utilizing net fit seams.

2.02 ACCESSORIES

- A. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following Basis-of-Design. Submit equal or better products for approval under provisions of Substitutions requirements Section 01 6300.
- B. Basis-of-Design: Trim pieces manufactured by Columbia Architectural Products, Inc: Strips shall be of width shown and of required thickness to protect the exposed edge of the material with units in maximum length available to minimize the number of joints. Miter all corners.
 - 1. Metal: Stainless Steel
 - 2. Finish: No. 4
 - 3. Thickness: .032"
 - 4. Profiles: B704-S "J" TrimWall

2.03 RELATED MATERIALS

- A. Related Materials: Refer to other sections for related materials as follows.
 - 1. Resilient Accessories: Refer to Division 9 Finishes Sections for resilient wall bases

2.04 SOURCE QUALITY

- A. Source Quality: Obtain product materials from a single manufacturer.

PART 3 EXECUTION**3.01 MANUFACTURER'S RECOMMENDATIONS**

- A. Compliance: Comply with manufacturer's product technical data, including product technical bulletins, installation recommendations and care recommendations.

3.02 INSPECTION

- A. Site Verification of Conditions: The Contractor and Installer shall examine and verify conditions previously described in other sections under which material and accessories are to be installed to be in accordance with the manufacturer's installation recommendations and must notify the General Contractor in writing of conditions detrimental to proper and timely completion of work. Work shall not proceed until all unsatisfactory conditions are corrected to acceptable conditions to the Owner and Architect.
- B. Material Inspection: Visually inspect all materials prior to installation in accordance with the manufacturer's installation recommendations. Material with visual defects shall not be installed and shall not be considered as a legitimate claim if they are installed.

3.03 PREPARATION

- A. General: Comply with manufacturer's written installation recommendations for preparing substrates indicated to receive materials.
- B. Adjacent Surfaces Protection: Protect adjacent work areas and finish surfaces from damage during product installation.
- C. Surface Preparation:
 - 1. General: Prepare substrate in accordance with manufacturer's recommendations and ASTM industry standards. Work shall not proceed until all unsatisfactory conditions are corrected to acceptable conditions to the Owner and Architect.
 - 2. Substrate: Substrates to receive material must be compression and deformation resistant, permanently dry and clean. They must be sound, smooth, rigid, flat dry, and free of all foreign materials including but not limited to dust, grease, oils, solvent, adhesive residue, mold, mildew or any substance that could prevent achieving a secure bond.

3.04 INSTALLATION

- A. Material Installation: For each wall, cut pieces of Bulletin Board to the required length and width, adding 2" – 3" in each direction to allow for final trimming. It is preferred that the material is cut 24 hours prior to installation. During storage in roll form, tension develops in Bulletin Board that will cause the ends of pieces cut from the roll to "cup", or not lay flat. This is commonly called end curl. This tension must be relaxed prior to installation so that the material will remain flat and in full contact with the adhesive while the adhesive dries. If installing multiple sheets of Bulletin Board, stack the pre-cut sheets face-to-face and back-to-back to help relieve the end curl and allow material to relax. In order to ensure continuous contact of the material and adhesive, the natural end curl at the end of each cut must be relaxed, and/or massaged both before and during the installation process to remove the tension caused by being rolled. Relax the end curl by properly massaging at time of installation into adhesive. Plan the layout to allow for a minimum of 1/2" – 3/4" of the factory edge to be trimmed from each side of the material for seaming. The seams should fall a minimum of 6" away from joints in the substrate. Allowing for trimming, draw a plumb line on the wall where the seam for the first piece will fall. Using a Forbo Seam and Strip Cutter or a straight edge and knife, trim a minimum of 1/2" – 3/4" from the seam edge of the first piece. Angle the knife slightly to create an undercut. Trim the sheet and "dry" fit it to the wall section, making sure that the seam edge will align with the plumb line on the wall. Traditional scribing methods generally produce the best results. Establish "set marks" on both the material and the wall to aid in positioning the sheet during installation. Before adhering the first sheet, prepare seams for all adjacent sheets on a clean flat surface. Cutting seams on the wall can be difficult. Position the second sheet adjacent to the first sheet, overlapping the second sheet on the first sheet a minimum of 1/2" – 3/4" at the seam. Apply masking tape at several locations as set marks to aid in properly aligning sheets. Starting from the

corner, spread adhesive in the area where the first piece will be installed. The plumb line is the boundary for the side opposite the corner. Depending on conditions, it may not be possible to spread adhesive in the entire area without the adhesive becoming too dry before the material is placed. If necessary, only spread adhesive a short distance from the starting point and stop the adhesive spread along a straight vertical line. Do not spread more adhesive than can be covered while the adhesive is still sufficiently wet to achieve 100% wet transfer to the material backing. Using the set marks and plumb line established during fitting, position the material on the wall, starting at the corner. Roll immediately with a three-section wall roller. Roll thoroughly in all directions, first across the width and then along the length, so that the material backing is firmly pressed into the wet adhesive and any trapped air bubbles are released. Clean excess adhesive while it is still wet. When it is not possible to adhere the entire piece at one time, fold the un-adhered portion of the material back over the adhered portion up to the adhesive spread line. Starting at the spread line, being careful not to overlap the adhesive, continue spreading adhesive toward the plumb line, placing and rolling the material as you go, until the entire piece has been adhered. Repeat this process for each sheet. Check for adhesive transfer frequently. There must be **100% wet** transfer of adhesive to the material backing in order to achieve a secure bond. 100% wet transfer is a continuous film of adhesive, when wet, on both the backing of the material and the substrate with no trace of trowel marks or ridges. Immediately roll the Bulletin Board in all directions using a three-section wall roller to ensure proper adhesive transfer. Additional rolling is required during adhesive setup to ensure that the material is flat and fully adhered.

B. Adhesive Application: Use trowel recommended by manufacturer for Forbo L 910W adhesive.

1. 1/8" x 1/8" x 1/16" V notch trowel
2. Spread rate is approximately 90 ft²/gallon

C. Seaming: All Bulletin Board products shall be installed utilizing net fit seams. A properly executed net fit seam will have no gaps or fullness. If the material is cut too full, it will result in bubbled or peaked seams. Gaps will allow dirt or contaminants to accumulate. Cut the material at an angle so as to slightly undercut the material. This will compensate for any slight expansion that may occur. Roll the seam with a steel seam roller, making sure that the material is placed into wet adhesive.

D. Installation Techniques:

1. Scribe, cut, fit material to butt tightly to all surfaces, permanent fixtures and built-in furniture, including pipes, outlets, edgings, thresholds, nosings, and cabinets.
2. Adhere material to substrate without producing open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections in completed installation.
 - a. Use adhesive applied to the substrate in compliance with the manufacturer's recommendations, including those for proper spreading of the adhesive, adhesive missing and adhesive open and working times.
 - b. Remove fresh adhesive residue immediately with a clean white cloth. Dried adhesive can be removed with a clean white cloth and Forbo Adhesive Remover. If this is not available, a solution of properly diluted neutral pH cleaner may be used. The area should then be rinsed with clean, cool water to remove all residues from the Forbo Bulletin Board.

NOTE: Excessive pressure or aggressive cleaning may mar the bulletin board surface.

3. Immediately roll the material in all directions using a three-section wall roller to ensure proper adhesive transfer. Additional rolling is required during adhesive setup to ensure that the material is flat and fully adhered.
4. Edges can be finished by fitting a frame around the edge, beveling the edges, milling or cutting the edge straight. For the best result, always use sharp tools or blades when cutting the material.
5. Install protective outside corner guards over all outside corners. For inside corners, pattern or direct scribing the material will ensure a tight fit between the sheets.

3.05 PROTECTION

WALL COVERINGS

- A. Protection: Protect installed product and finish surfaces from damage during construction. Remove and legally dispose of protective covering at time of Substantial Completion.

3.06 CLEANING

- A. Initial Maintenance: In order to allow the adhesive to dry and cure properly, wait a minimum of five days following the installation before conducting wet cleaning procedures or initial maintenance. Additional time may be necessary if the installation is over a non-porous substrate.
- B. Procedure:
1. Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's recommendations prior to Owner's acceptance. Remove construction debris from project site and legally dispose of debris.
 2. Remove visible adhesive and other surface blemishes using cleaning methods recommended by manufacturer.
 3. Remove all surface soil, debris, sand and grit by dusting.
 4. Mix a neutral pH cleaning solution according to the label directions. Apply the solution with a soft bristled brush.
 5. Gently scrub the area to loosen and remove any soil. Move the brush in circular motions, working the debris out of the surface of the material.
NOTE: If Bulletin Board is scrubbed too harshly or with abrasives, it can mar the surface of the material, removing some of the color.
 6. Rinse the entire surface with a clean cloth using clean, cool water. Change the water often to ensure it remains clean and clear.
 7. Recover the rinse water with a wet/dry vacuum.
 8. Dry the surface thoroughly with an absorbent cloth so it can be examined to ensure proper cleaning.
 9. Allow the surface to dry thoroughly before use.

3.07 INITIAL MAINTENANCE PROCEDURES

- A. Drying Room Yellowing/Ambering: Bulletin Board is made from natural materials. During the manufacturing process while the material is maturing in the drying room stoves, the natural occurrence of a yellow cast, termed "drying room yellowing" or "ambering" appears on the surface. This yellow cast is caused by the oxidation of linseed oil, occurring intermittently and with varying intensity. It is most noticeable on light blues, greys and soft ivory shades of material. The yellow cast is only *TEMPORARY*. The yellow cast is most noticeable when a new roll or carton of material is opened. It can appear as being off shade from the sample materials. When the material is exposed to light, the yellow cast will dissipate. The process may take as little as a few hours in bright sunlight or longer with artificial light. Because this is a natural occurrence in the product, there is no set time frame for the yellowing to dissipate. *This is not a material defect.* To discover the true color of the Bulletin Board, follow these few simple steps:
1. Take a piece of the material and cover one half with heavy paper or thick surface, such as cardboard or another piece of material.
 2. Place these pieces in direct sunlight for approximately 1 hour.
 3. After the time has passed, remove the cardboard or heavy material and see the visual difference first hand.

END OF SECTION 09 7213

SECTION 097700 - FIBER-REINFORCED PLASTIC (FRP) FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Fiberglass Reinforced Plastic wall panels (FRP Panels).
 - 2. Provide FRP panels on Janitor Closet walls, reference drawings for extents.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data for each type of product specified. Include data on physical characteristics, durability, fade resistance, and flame-resistance characteristics.
- C. Shop Drawings showing location and extent of each wall panel type. Indicate seams and termination points.
- D. Samples for initial selection in the form of manufacturer's color charts consisting of actual units or sections of units showing the full range of colors, textures, and patterns available.
- E. Schedule of wall panels using same room designations indicated on Drawings.
- F. Product certificates signed by manufacturers of wall panels certifying that their products comply with specified requirements.
- G. Maintenance data for wall covering to include in the operation and maintenance manual specified in Division 1.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer who has completed 5 projects similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- B. Fire-Test-Response Characteristics: Provide wall panels with the following surface-burning characteristics as determined by testing identical products per ASTM E 84 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Flame Spread: 25 or less.

- 2. Smoke Developed: 450 or less.

1.5 PROJECT CONDITIONS

- A. Space Enclosure and Environmental Limitations: Do not install wall panels until space is enclosed and weatherproof, wet-work in space is completed and nominally dry, work above ceilings is complete, and ambient temperature and humidity conditions are and will be continuously maintained at values near those indicated for final occupancy.
- B. Lighting: Do not install wall panels until a lighting level of not less than 15 foot-candles is provided on the surfaces to receive wall covering.
- C. Ventilation: Provide continuous ventilation during installation and for not less than the time recommended by the wall covering manufacturer for full drying or curing.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, fiberglass reinforced panels that may be incorporated into the Work include, but are not limited to, the following Basis-of-Design. Submit equal or better products for approval under provisions of Section 012500 - Substitution Procedures.

- 1. Basis-of-Design: Marlite.

- a. Thickness: Standard.
- b. Texture: Smooth.
- c. Color: from full manufacturer’s line.
- d. Accessories: Moldings at seams and edges as recommended by Manufacturer.
- e. Height: As indicated in drawings.

- 2. Physical Properties

<u>Property</u>	<u>Test Method</u>	<u>Value (0.075”)</u>
Flexural Strength	ASTM D790	14x 10 ³ psi
Flexural Modulus	ASTM D790	0.65 x 10 ⁶ psi
Tensile Strength	ASTM D638	7 x 10 ³ psi
Tensile Modulus	ASTM D638	0.95 x 10 ⁶ psi
Barcol Hardness	ASTM D2583	50
Izod Impact Strength	ASTM D256	11 ft-lb/in notched
Gardner Impact Strength	ASTM D5420	35 in-lbs
Coefficient of Linear Thermal Expansion	ASTM D696	1.4 x 10 ⁻⁵ in/in-°F
Water Absorption	ASTM D570	0.38%/24hrs at 77°F
R Value	ASTM C1114	0.19 hr-ft ² -°F/Btu
Surface Burning Characteristics	ASTM E84	Class A
Taber Abrasion Resistance (cs-17 wheels, 1000 g. wt., 25 cycles)	Taber Test	0.005% max wt loss

2.2 ADHESIVES

- A. General: As recommended by manufacturer of fiberglass reinforced panels.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates for compliance with requirements for moisture content and other conditions affecting performance of Work of this Section. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions for surface preparation.
- B. Clean substrates of substances that could impair wall covering's bond, including mold, mildew, oil, grease, incompatible primers, and dirt.
- C. Prepare substrates to achieve a smooth, dry, clean surface free of flaking, unsound coatings, cracks, and defects. Prime new gypsum board with primer recommended by wall panel manufacturer.

3.3 INSTALLATION, GENERAL

- A. General: Comply with manufacturer's written installation instructions applicable to products and applications indicated, except where more stringent requirements apply.
- B. Install wall panels with no gaps or overlaps. By overlapping and double cutting the seams the vertical joint disappears.
- C. Install seams vertical and plumb as recommended by manufacturer. No horizontal seams allowed.
- D. Remove air bubbles and other defects.

3.4 CLEANING

- A. Remove excess adhesive at finished seams, perimeter edges, and adjacent surfaces.
- B. Use cleaning methods recommended by wall covering manufacturer.
- C. Replace strips that cannot be cleaned.

END OF SECTION

SECTION 099100 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.

1.3 DEFINITIONS

- A. General: Standard coating terms defined in ASTM D 16 apply to this Section.
 - 1. Flat refers to lusterless or matte finish with a gloss range below 15 when measure at an 85-degree meter.
 - 2. Low-sheen Eggshell refers to low-sheen finish with a gloss range between 9% and 15% when measured at a 60-degree meter.
 - 3. Semi-Gloss 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: For each product indicated.
- B. Samples: For each color type of finish-coat material indicated.

1.5 QUALITY ASSURANCE

- A. Only the products shown in the Paint Schedule, or equals, so determined and approved by the submittal process, shall be used for the work.
- B. Single Source Responsibility: To the greatest extent possible, provide all materials by a single manufacturer. Except as otherwise specified, provide top-of-the-line primers and other undercoat materials produced by same manufacturer as finish coats.
- C. Container Identification: Each container shall be labeled as follows:
 - 1. Manufacturer's Name.
 - 2. Type of Material.
 - 3. Manufacturer's Stock Number.
 - 4. Color, if applicable.

5. Instructions For Reducing, Where Applicable.

1.6 PROJECT CONDITIONS

- A. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain storage containers in a clean condition, free of foreign materials and residue.
- B. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F.
- C. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F.
- D. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

1.7 EXTRA MATERIALS

- A. Furnish extra paint materials from the same production run as the materials applied and in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.
 1. Quantity: 5 percent, but not less than 1 gal. or 1 case, as appropriate, of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.
 1. Sherwin-Williams Co. (Sherwin-Williams).
 2. Dunn Edwards Paints
 3. Benjamin Moore & Co. (Benjamin Moore).
 4. ICI Dulux Paint Centers (ICI Dulux Paints).
 5. Kwal Paints
 6. Diamond Vogel
 7. Monopole Inc.
 8. Scuffmaster

2.2 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

- B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
 - 1. Proprietary Names: Use of manufacturer's proprietary Basis-of-Design product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions
- C. Colors: As indicated in Finish Legend on drawings.

2.3 PREPARATORY COATS

- A. Concrete Unit Masonry Block Filler: High-performance latex block filler of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.
- B. Exterior Primer: Exterior alkyd or latex-based primer of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.
 - 1. Ferrous-Metal and Aluminum Substrates: Rust-inhibitive metal primer.
 - 2. Zinc-Coated Metal Substrates: Galvanized metal primer.
 - 3. Where manufacturer does not recommend a separate primer formulation on substrate indicated, use paint specified for finish coat.
- C. Interior Primer: Interior latex-based low odor, low VOC primer, of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated. Provide Benjamin Moore; Pristine Eco Spec Interior Latex Primer Sealer 231 or equivalent.
 - 1. Ferrous-Metal Substrates: Quick drying, rust-inhibitive metal primer.
 - 2. Zinc-Coated Metal Substrates: Galvanized metal primer.
 - 3. Where manufacturer does not recommend a separate primer formulation on substrate indicated, use paint specified for finish coat.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. The application of any paint or coating shall constitute acceptance of that surface as suitable. Correct surface defects. In the event of incompatibility of materials, the problem shall be resolved prior to any application.

3.2 PREPARATION OF SUBSTRATES

- A. Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition:
- B. Wood: Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knotsealer, before application of priming coat. After priming, fill holes and imperfections in finish

surfaces with putty or plastic wood filler. Sandpaper smooth when dried. When transparent finish is required, use spar varnish for back-priming.

- C. Ferrous Metals: Clean ferrous surfaces, which are not galvanized or shop-coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.
- D. Prime Coats: Unless the prime coat or existing coats are completely removed, a prime coat touch-up will satisfy the first coat requirement of the three coat paint schedules. Hard glossy prime coats must be sanded to provide profile for finish coat.
- E. Galvanized Metal: Clean all surfaces of foreign matter by wiping with Lacquer Thinner, or other cleaner manufactured for the specific purpose of conditioning galvanized metal. Etch if required by the selected manufacturer's printed instructions.
- F. Masonry: Clean surface specified for painting and repoint mortar joints with VIP 5710, or an approved equal.
- G. Joints at Dissimilar Surfaces: Remove all old broken or faulty caulking and recaulk as required in compliance with Section 07900, Joint Sealers. Use VIP 5710, an approved equal, or other appropriate sealer as required by Section 07900.
- H. Glazing: Remove all cracked or broken glazing and reglaze with DAP Metal Sash Putty.

3.3 PREPARATION OF MATERIALS

- A. Unless otherwise specified, mix and prepare painting materials in accordance with manufacturer's printed instructions. Use oils, thinners and driers only as recommended by the paint manufacturer.
- B. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.

3.4 APPLICATION OF PAINT

- A. Remove accessories, plates, hardware, lighting fixtures and similar devices, or provide masking during painting operations, if so allowed. Finish work shall be uniform, proper color, free of runs, sags or flooding. For high gloss enamel finishes, lightly sand each undercoat.
- B. General: Unless otherwise specified, apply paint only in accordance with manufacturer's printed instructions. Use applicators and techniques best suited for substrate and type of material being applied.
- C. Do not apply paint in damp, rainy, windy or dusty weather. Surfaces shall be thoroughly dry. Do not paint in direct hot sun or when temperature of surface and material is below 40 degrees F. Allow each coat to dry for the time recommended by the manufacturer before application of succeeding coats.
- D. Interior applications may require venting to outside air.

3.5 FIELD QUALITY CONTROL

- A. Request review of first finished room by Architect for color, texture and workmanship.
- B. Use first acceptable room as project standard for each successive room or space.

- C. Obtain approval of each paint coat before application of successive coats. Failure to obtain approval between coats shall result in loss of credit for additional coats applied.
- D. At any time the Architect may obtain samples from the products in use at the work sites for analysis and verification of product compliance with the specifications.
- E. Corrective Measures: As required by the Architect at no cost to the Owner.

3.6 CLEANUP

- A. Cleanup: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each workday.
- B. Upon completion of painting work, clean window glass and other paint spattered surfaces. Remove temporary protective wrappings provided for protection of the work.
- C. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

3.7 PROTECTION

- A. Protection: Protect existing work and structures, whether to be painted or not. Use care to protect adjacent finishes from overlap of paint, paint smears or other defacement. Provide "Wet Paint" signs as required to protect newly painted finishes. At completion of work, touch up and restore all damaged or defaced painted surfaces in manner acceptable to the Architect.

3.8 PAINTING SCHEDULE

- A. The following Painting Schedule shall be used for the work. Unless otherwise specified, all finishes shall be four (4) coat systems, consisting of one (1) sealer or prime coat before gypsum texture, one (1) coat sealer or prime coat after gypsum texture, and two (2) finish coats. DFT as used in paint schedules means "dry film thickness," and shall be interpreted as per each coat. Select same manufacturer's primer and finish-coats product for each finish specified. If not identified within this schedule, refer to Finish Schedule on Drawings to locate specific surfaces to receive finishes specified.
- B. For surfaces not indicated above, submit for approval paint schedules of the products of the above manufacturers, or other manufacturers for the various substrates as indicated on the drawings, or described in the specifications.

3.9 EXTERIOR PAINT SCHEDULE

- A. Ferrous Metals: Semi-Gloss.
 - 1. First Coat: Red Oxide Primer (unless shop primed), 1.6 mils. DFT.
 - 2. Two Coats: Alkyd semi-gloss enamel, 50%-60% on a 60 degree gloss meter, 2.0 mils. DFT.
- B. Galvanized Metal: Semi-Gloss.
 - 1. Etching: Etch galvanized metals as specified above.
 - 2. First Coat: Alkyd or Vinyl Primer, 2.0 mils DFT.

- a. Two Coats: Alkyd Semi-Gloss Enamel, 2.0 mils. DFT.

3.10 INTERIOR PAINTING SCHEDULE

A. Gypsum Board: Satin.

1. Location: All gypsum board walls and ceilings except those noted below
2. One Coat: Vinyl Acrylic Latex Primer, 1.4 mils. DFT.
3. Two Coats: Satin Latex Enamel, 1.3 mils. DFT.

B. Gypsum Board: Semi-Gloss.

1. Location: Janitor Rooms
2. One Coat: Vinyl Acrylic Latex Primer, 1.4 mils. DFT, or waterborne Epoxy Primer.
3. Two Coats: Two Component Polyamide/Epoxy Resin Coating, 4.0 mils. DFT.

C. Concrete Masonry Units: Semi-Gloss.

1. First Coat: Concrete masonry unit block filler.
2. Two Coats: Semi-Gloss Acrylic Enamel.

D. Ferrous Metals: Semi-Gloss.

1. First Coat: Red Oxide Primer, or Latex Metal Primer (unless shop primed), 1.6 mils. DFT.
2. Two Coats: Latex or Alkyd semi-gloss enamel, 50%-60% on a 60 degree gloss meter, 2.0 mils. DFT.

E. Galvanized Metals: Semi-Gloss.

1. Etching: Etch galvanized metals as specified above.
2. First Coat: Acrylic Primer, 20 mils DFT.
3. Two Coats: Latex or Alkyd Semi-Gloss Enamel, 2.0 mils. DFT.

F. Plumbing, Heating, Ventilating and Electrical Items: Semi-Gloss.

1. Location: Exposed unpainted, prime coat painted, and insulated items, hangers, straps, junction boxes, ducts, etc., of plumbing, heating, air conditioning, and ventilating and electrical work shall be painted in finished spaces where exposed.
2. Insulated or Wrapped Work:
 - a. First Coat: Aluminum size to shrink canvas.
 - b. Two Coats: Semi-Gloss Latex Enamel, 1.3 mils. DFT.
3. Non-Insulated Work:
 - a. Two Coats: Semi-Gloss Latex Enamel, 1.3 mils. DFT.

END OF SECTION 099100

SECTION 101100 - VISUAL DISPLAY SURFACES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 06 1000 - Rough Carpentry: Blocking and supports.
- C. Section 09 2116 - Gypsum Board Assemblies: Concealed supports in metal stud walls.

1.2 SUMMARY

- A. This Section includes wall mounted magnetic markerboards.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Initial Selection: For each type of visual display surface indicated and as follows:
 - 1. Samples of accessories involving color selection.
- C. Maintenance Data: For visual display surfaces to include in maintenance manuals.
- D. Installation Instructions.

1.4 WARRANTY

- A. Provide five year warranty for markerboard to include warranty against discoloration due to cleaning, crazing or cracking, and staining.

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of visual display surface through one source from a single manufacturer.
- B. Product Options: Drawings indicate size, profiles, and dimensional requirements of visual display surfaces and are based on the specific system indicated. Refer to Division 1 Section "Product Requirements."

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver factory-built visual display boards, including factory-applied trim where indicated, completely assembled in one piece without joints, where possible. If dimensions exceed maximum manufactured panel size, provide two or more pieces of equal length as acceptable to Architect. When overall

dimensions require delivery in separate units, prefit components at the factory, disassemble for delivery, and make final joints at the site.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. A-1 Visual Systems.
2. AARCO Products, Inc.
3. Best-Rite Manufacturing.
4. Claridge Products & Equipment, Inc.
5. Newline Products.
6. Platinum Visual Systems.

2.2 MATERIALS, GENERAL

- A. Porcelain-Enamel Face Sheet: ASTM A 424, enameling-grade steel, uncoated thickness indicated; with exposed face and edges coated with primer, 1.7-to-2.5-mil- thick ground coat, and color cover coat; and concealed face coated with primer and 1.7-to-2.5-mil thick ground coat.

1. Gloss-Finish Cover Coat: Gloss as indicated; dry-erase markers wipe clean with dry cloth or standard eraser. Minimum 3.0-to-4.0-mil-thick cover coat. Cover and ground coats shall be fused to steel at manufacturer's standard firing temperatures but not less than 1475 deg F.
 - a. Product: PolyVision Corporation; e3 ceramicsteel (Type L) whiteboard projector surface.
2. Fiberboard: ANSI A208.2, Grade MD, made with binder containing no urea formaldehyde.
3. Hardboard: AHA A135.4, tempered.

2.3 MAGNETIC MARKERBOARD ASSEMBLIES

- A. Porcelain-Enamel Magnetic Markerboards: Balanced, high-pressure, factory-laminated markerboard assembly of three-ply construction consisting of backing sheet, core material, and porcelain-enamel face sheet with low-gloss finish.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, or are equal to, the following:
 - a. Claridge Products and Equipment, Inc.; LCS Markerboard.
2. Fiberboard Core: 7/16 inch thick with no added urea formaldehyde and a minimum of 90% post industrial recycled content.
3. Laminating Adhesive: Manufacturer's standard, moisture-resistant thermoplastic type.
4. Trim: 5/8 inch aluminum trim with satin anodized finish.

5. Accessories for each unit:
 - a. Marker Tray: Continuous, Hollow aluminum tray with cast aluminum end closures.
 - b. Flag Holder: Install (2) flag holder(s) in each classroom space.

2.4 FABRICATION

- A. Porcelain-Enamel Visual Display Assemblies: Laminate porcelain-enamel face sheet and backing sheet to core material under heat and pressure with manufacturer's standard flexible, waterproof adhesive.

2.5 ALUMINUM FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
- C. Class II, Clear Anodic Finish: AA-M12C22A31 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.010 mm or thicker) complying with AAMA 611.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. General: Install visual display surfaces in locations and at mounting heights indicated on drawings. Keep perimeter lines straight, level, and plumb. Provide grounds, clips, backing materials, adhesives, brackets, anchors, trim, and accessories necessary for complete installation.
- B. Wood Blocking: Coordinate visual display board units with installation of concealed wood blocking in walls.

3.2 INSTALLATION OF FACTORY-FABRICATED VISUAL DISPLAY UNITS

- A. Visual Display Boards: Attach concealed clips, hangers, and grounds to wall surfaces and to visual display boards with fasteners at not more than 16 inches o.c. Secure both top and bottom of boards to walls.

3.3 CLEANING AND PROTECTION

- A. Clean visual display surfaces according to manufacturer's written instructions. Attach one cleaning label to visual display surface in each room.
- B. Touch up factory-applied finishes to restore damaged or soiled areas.
- C. Cover and protect visual display surfaces after installation and cleaning.

3.4 VISUAL DISPLAY UNITS SCHEDULE

- D. Marker Wall Panel: Porcelain-enamel markerboard assembly. Color as selected by Architect from manufacturer's standard colors.
1. Width: As indicated on Drawings.
 2. Height: 60"

END OF SECTION

SECTION 101400 - INTERIOR SIGNAGE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Panel signs.
 - 2. Signage accessories.
 - 3. Applied Vinyl decals.

1.3 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of sign.
- B. Shop Drawings: Include plans, elevations, and large-scale sections of typical members and other components. Show mounting methods, grounds, mounting heights, layout, spacing, reinforcement, accessories, and installation details.
 - 1. Provide message list for each sign, including large-scale details of wording, lettering, and braille layout.
- C. Samples for Initial Selection: For each type of sign material indicated that involves color selection.
- D. Samples for Verification: For each type of sign, include the following Samples to verify color selected:
 - 1. Panel Signs: Full-size Samples of each type of sign required.
 - 2. Approved samples will not be returned for installation into Project.
 - 3. Sample of vinyl applied, min 12-inch by 12-inch.
- E. Qualification Data: For Installer.
- F. Maintenance Data: For signage cleaning and maintenance requirements to include in maintenance manuals.
- G. Warranty: Special warranty, specified in this Section.
- H. Sign Schedule: for easy updating per owner changes
 - 1. Use same designations indicated on drawings.
 - 2. Submit in editable form, ie: Excel spreadsheet

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative of signage manufacturer for installation and maintenance of units required for this Project.
 - 1. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
- B. Source Limitations: Obtain each sign type through one source from a single manufacturer.
- C. Regulatory Requirements: Comply with the applicable provisions in ADA-ABA Accessibility Guidelines ICC/ANSI A117.1, and with code provisions as adopted by authorities having jurisdiction.
 - 1. Interior Code Signage: Provide signage as required by accessibility regulations and requirements of authorities having jurisdiction. These include, but are not limited to the Signs for Accessible Spaces

1.5 PROJECT CONDITIONS

- A. Field Measurements: Where sizes of signs are determined by dimensions of surfaces on which they are installed, verify dimensions by field measurement before fabrication and indicate measurements on Shop Drawings.

1.6 COORDINATION

- A. For signs supported by or anchored to permanent construction, advise installers of anchorage devices about specific requirements for placement of anchorage devices and similar items to be used for attaching signs.
 - 1. For signs supported by or anchored to permanent construction, furnish templates for installation of anchorage devices.

1.7 WARRANTY

- A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.
- B. Failures include, but are not limited to, the following:
 - 1. Deterioration of metal and polymer finishes beyond normal weathering.
 - 2. Deterioration of embedded graphic image colors and sign lamination.
- C. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, or are equal to, the manufacturers specified.
 - a. Signsource Inc.
 - b. Century Sign Builders;
 - c. H&H Building Products

2.2 PANEL SIGN TYPES

A. Classroom Signs:

1. Basis-of-Design: Century Sign Builders, Texture.
2. Locations: All classrooms to receive one (1) sign per door.
3. Size: 6-inch height by 6-inch width.
4. Each sign will have the following components where applicable:
 - a. Regulatory Compliance: All signs shall conform to the requirements of regulations list in section 1.3 and shall be designed to meet the stated requirements for color, contrast, letter height, install location and other characteristics required for accessibility and by local, state and federal regulations.
 - b. Base material or chassis: Richlite Paper Composite Sheets:
 - 1) Cellulose or hemp-fiber paper heat pressed with phenolic resin; color consistent throughout thickness.
 - 2) Edge treatment (bevel or straight) as indicated on shop drawings.
 - 3) Thickness and color as indicated in shop drawings.
 - c. Updateable insert background material: Rowmark
 - 1) single-ply non-glare acrylic multi-polymer.
 - 2) Material shall be constructed with embedded coloration that is the final approved color for the signs. Products with painted or otherwise applied coloration method are not acceptable.
 - 3) Thickness and color as indicated in shop drawings.
 - d. Lens or cover material: lens and covers shall be constructed using 0.125" (342-101) or 0.0625" (322-101) clear single-ply non-glare acrylic multi-polymer (Rowmark).
 - e. Changeable message insert will be fabricated from commonly available transparency media no less than 5 mil thick that is compatible with inkjet or laser printers such as 3M CG3710 or equivalent.
 - f. Printed graphic inserts: Printed inserts will be created using a satin-coated, tear-resistant, rigid PVC media with eco-solvent waterfast & UV stable inks.
 - 1) Printed background inserts must be manufactured in color managed workflow with the following capacities:
 - 2) All printing must be done using a profiled printer with transmissible ICC profile.
 - 3) All approved colors used in final design must have LAB values recorded and submitted to architect owner for future reference and duplication.
 - 4) Printing must be performed on calibrated printer such that future orders of insert can be reproduced within 5 Delta E of recorded LAB values.
 - 5) Manufacturer is to provide all changeable inserts for signs for the initial order.
 - 6) Manufacturer will provide template file to end-user, allowing for changes to the inserts to be created. Provided file must integrate with client's already existing software environment and must not require the implementation of new or proprietary software.
 - g. Tactile Raised Lettering/Graphic method: Tactile lettering and symbols shall be formed using rotary engraving method and bonded to sign plaque using 3M Scotch 467HP adhesive. Text, numbers and symbols must have 1/32" return cut to 22 degree angle. Text, numbers and symbols must be constructed with materials having embedded coloration that is the final approved color for the signs. Products with painted or otherwise applied coloration method are not acceptable.

- h. Braille Method: Braille must be constructed using the Edgerton Grade 2 Braille System using clear Raster beads.
 - i. Other features:
 - 1) Allen bolt fasteners: as indicated on the shop drawings, provide Allen bolts to secure lenses over changeable message inserts.
 - j. Color Selections
 - 1) Tactile lettering/graphics: As per approved shop drawings
 - 2) Base material: As per approved shop drawings
 - 3) Graphic insert: As per approved shop drawings
 - 4) Changeable insert: As per approved shop drawings
 - 5) Frame and mounting hardware: As per approved shop drawings
 - k. Font Selections
 - 1) Tactile lettering: As per approved shop drawings
 - 2) Graphic insert lettering: As per approved shop drawings
 - l. Changeable insert lettering: As per approved shop drawings
- B. General Room Signs:
- 1. Same as Classroom sign.
 - 2. Locations: All additional locations (not covered under classrooms) to receive 1 sign per door.
 - 3. Rooms accessed from the exterior to receive 1 sign that is exterior grade.
 - a. Basis-of-Design: Century Sign Builders, Texture.
 - b. Size: 6-inch height by 6-inch width.
 - c. Mounting to withstand exterior elements.
- C. Toilet Room Signs:
- 1. Basis-of-Design: Century Sign Builders, Texture.
 - 2. Size: 8-inch height by 8-inch width.
 - 3. Each sign will have the following components where applicable:
 - a. Character: Minimum 3/4-inch high characters.
 - b. Symbols of Accessibility: Provide 4-inch high symbol fabricated from opaque non-reflective vinyl film, 0.0035-inch nominal thickness, with pressure-sensitive adhesive backing suitable for both exterior and interior applications.
 - c. Each restroom sign to include room number, and all adult restrooms to read "Staff Only" while adhering to ADA regulations
- D. Exit Door Signs:
- 1. Basis-of-Design: Century Sign Builders, Texture.
 - 2. Size: 3-inch height by 5-inch width.
 - 3. Location: Provide one sign at each exit door and exit vestibule door. Sign mounting location to be determined in the field by Architect.
- E. Evacuation Plan Holders:
- 1. Basis-of-Design: Century Sign Builders, Texture 8.5x11DOC holder.
 - 2. Size: for 8.5"x11" paper.
 - 3. Location & Quantity: One per classroom to be located on the door. Six (6) additional holders, as directed by Architect.

2.3 APPLIED VINYL DECALS FOR HM DOORS

- A. Die-cut characters from high performance cast vinyl graphic film products such as 3M Scotchcal or equal with a 5 year or greater warranty. Film of nominal thickness of 3 mils with pressure-sensitive adhesive backing, suitable for exterior applications.
 - 1. Color: As selected by Architect from manufacturer's full range.
 - 2. Size and text: Architect to provide vector graphic

3. Font: N/A
4. Locations: Reference drawings, confirm with architect before installation.
5. Installation: Signs shall be free of bubbles, wrinkles or other anomalies. Wrap edge of door with graphic.

2.4 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of range of approved Samples. Noticeable variations in same piece are not acceptable. Variations in appearance of other components are acceptable if they are within range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
- B. Verify that items, including anchor inserts, and electrical power provided under other sections of Work are sized and located to accommodate signs.
- C. Examine supporting members to ensure that surfaces are at elevations indicated or required to comply with authorities having jurisdiction and are free from dirt and other deleterious matter.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Locate signs and accessories where indicated, using mounting methods of types described and in compliance with manufacturer's written instructions, ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.
 1. Install signs level, plumb, and at heights indicated, with sign surfaces free from distortion and other defects in appearance.
 2. Interior Wall Signs:
 - a. Install signs on walls adjacent to latch side of door where applicable. Where not indicated or possible, such as double doors, install signs on nearest adjacent walls. Locate to allow approach within 3-inches (75 mm) of sign without encountering protruding objects or standing within swing of door.
 - b. All ADA wall signs shall be mounted (TBD for early childhood) from the floor to the center of the sign on the latch side of the door. The distance between the door frame and edge of the sign should be 1-inch.

- B. Wall-Mounted Panel Signs: Attach panel signs to wall surfaces using methods indicated below:
1. Vinyl-Tape Mounting: Use double-sided foam tape to mount signs to smooth, nonporous surfaces. Do not use this method for vinyl-covered or rough surfaces.
 2. Silicone-Adhesive Mounting: Use liquid-silicone adhesive recommended in writing by sign manufacturer to attach signs to irregular, porous, or vinyl-covered surfaces. Use double-sided vinyl tape where recommended in writing by sign manufacturer to hold sign in place until adhesive has fully cured.
 3. Shim Plate Mounting: Provide 1/8-inch- (3-mm-) thick, concealed aluminum shim plates with predrilled and countersunk holes, at locations indicated, and where other mounting methods are not practicable. Attach plate with fasteners and anchors suitable for secure attachment to substrate. Attach panel signs to plate using method specified above.
 4. Where panel signs are scheduled or indicated to be mounted on glass, provide matching plate on opposite side of glass to conceal mounting materials.

3.3 CLEANING AND PROTECTION

- A. After installation, clean soiled sign surfaces according to manufacturer's written instructions. Protect signs from damage until acceptance by Owner.

END OF SECTION

SECTION 101416 - PLAQUES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Cast-metal dedication plaque.

1.3 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of sign.
- B. Shop Drawings: Include elevation of sign. Show mounting methods, mounting heights, layout, spacing, reinforcement, accessories, and installation details.

1.4 PROJECT CONDITIONS

- A. Field Measurements: Where sizes of signs are determined by dimensions of surfaces on which they are installed, verify dimensions by field measurement before fabrication and indicate measurements on Shop Drawings.

1.5 COORDINATION

- A. For signs supported by or anchored to permanent construction, advise installers of anchorage devices about specific requirements for placement of anchorage devices and similar items to be used for attaching signs.
 - 1. For signs supported by or anchored to permanent construction, furnish templates for installation of anchorage devices.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, or are equal to, the manufacturers specified.

2.2 CAST-METAL DEDICATION PLAQUE

- A. General: Provide castings free from pits, scale, sand holes, and other defects. Comply with requirements specified for metal, border style, background texture, and finish and in required thickness, size, shape, and copy.
- B. Basis-of-Design: A.R.K. Ramos or Century Sign Builders.
- C. Aluminum Castings: Provide aluminum castings of alloy and temper recommended by sign manufacturer for casting process used and for use and finish indicated.
- D. Border Style: Raised satin flat band.
- E. Background Texture: Medium sandblast.
- F. Letters: Helvetica font with satin face.
- G. Mounting: Concealed studs for substrates encountered.
- H. Size: 24" W x 24"H

2.3 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of range of approved Samples. Noticeable variations in same piece are not acceptable. Variations in appearance of other components are acceptable if they are within range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
- B. Verify that items, including anchor inserts are sized and located to accommodate signs.
- C. Examine supporting members to ensure that surfaces are at elevations indicated or required to comply with authorities having jurisdiction and are free from dirt and other deleterious matter.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Locate plaque where indicated or as directed by Architect, using mounting methods of types described and in compliance with manufacturer's written instructions.
 - 1. Install plaque level, plumb, and at height indicated, with sign surfaces free from distortion and other defects in appearance.
- B. Cast-Metal Plaque: Mount plaque using standard fastening methods recommended in writing by manufacturer for type of wall surface indicated.
 - 1. Concealed Mounting: Mount plaques by inserting threaded studs into tapped lugs on back of plaque. Set in predrilled holes filled with quick-setting cement.

3.3 CLEANING AND PROTECTION

- A. After installation, clean soiled sign surfaces according to manufacturer's written instructions. Protect signs from damage until acceptance by Owner.

3.4 PLAQUE DRAWING

- A. See Dedication Plaque Drawing following this Section.

END OF SECTION

2' - 0"

1 1/2"

1 1/2"

1 1/4"

1 1/2"

1 1/4"

2"

2 1/2"

5"

5"

2 1/4"

3 1/4"

1 1/4"

1/4"

Brown Early Childhood Center

2020

PORTALES MUNICIPAL SCHOOLS

Name 1
Name 2
Name 3
Name 4

SUPERINTENDENT
NAME TITLE 2
NAME TITLE 3
NAME TITLE 4

BOARD OF EDUCATION

Name 5
Name 6
Name 7
Name 8
Name 9

PRESIDENT
VICE PRESIDENT
SECRETARY
MEMBER
MEMBER

FORMATIVE ARCHITECTURE - ARCHITECTS
(NAME) - CONTRACTOR

"PORTALES MUNICIPAL SCHOOLS WISHES TO THANK
TAXPAYERS OF PORTALES FOR THEIR SUPPORT."

1-1/2" TEXT

5/8" TEXT

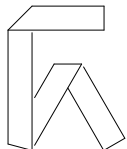
1/2" TEXT

5/8" TEXT

SANDBLASTED ALUMINUM
BACKGROUND

SATIN ALUMINUM RAISED BORDER
AND LETTERS, FONT TO BE
CONFIRMED AT TIME OF
SUBMITTAL REVIEW

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520 W 5th St, Portales, NM 88130

DATE ISSUED: 12/10/19
PROJECT NO: 18-0032

XXX

SECTION 102113.19 - PLASTIC TOILET COMPARTMENTS

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:

- 1. Solid-plastic toilet compartments configured as toilet enclosures: Floor anchored, overhead braced.

B. Related Requirements:

- 1. Section 061000 "Rough Carpentry"
- 2. Section 102800 "Toilet, Bath, and Laundry Accessories" for toilet tissue dispensers, grab bars, purse shelves, and similar accessories mounted on toilet compartments.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

- 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for toilet compartments.

B. Shop Drawings: For toilet compartments.

- 1. Include plans, elevations, sections, details, and attachment details.
- 2. Show locations of cutouts for compartment-mounted toilet accessories.
- 3. Show locations of centerlines of toilet fixtures.
- 4. Show locations of floor drains.
- 5. Show overhead support or bracing locations.

C. Samples for Initial Selection: For each type of toilet compartment material indicated.

- 1. Include Samples of hardware and accessories involving material and color selection.

D. Samples for Verification: For the following products, in manufacturer's standard sizes unless otherwise indicated:

- 1. Each type of material, color, and finish required for toilet compartments, prepared on 6-inch square Samples of same thickness and material indicated for Work.
- 2. Each type of hardware and accessory.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For toilet compartments to include in maintenance manuals.

1.5 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of toilet fixtures, walls, columns, ceilings, and other construction contiguous with toilet compartments by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame-Spread Index: **200** or less.
- B. Regulatory Requirements: Comply with applicable provisions in **the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines for Buildings and Facilities and ICC A117.1** for toilet compartments designated as accessible.

2.2 SOLID-PLASTIC TOILET COMPARTMENTS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Accurate Partitions Corp., an ASI Group Company
 - 2. AJW Architectural Products.
 - 3. American Sanitary Partition Corporation.
- B. Toilet-Enclosure Style: **Floor anchored, Overhead braced**
- C. Door, Panel, and Pilaster Construction: Solid, high-density polyethylene (HDPE) panel material, not less than **1 inch** thick, seamless, with eased edges, **no-sightline system**, and with homogenous color and pattern throughout thickness of material.
 - 1. Color and Pattern: **as selected by Architect from manufacturer's full range.**
- D. Pilaster **Shoes**: Manufacturer's standard design; **stainless steel**.
- E. Brackets (Fittings):
 - 1. Full-Height (Continuous) Type: Manufacturer's standard design; **extruded aluminum**.

2.3 HARDWARE AND ACCESSORIES

- A. Hardware and Accessories: Manufacturer's heavy-duty operating hardware and accessories.

1. Hinges: Manufacturer's minimum **0.062-inch** thick stainless-steel **paired, self-closing type that can be adjusted to hold doors open at any angle up to 90 degrees** allowing emergency access by lifting door. Mount with through-bolts.
 2. Latch and Keeper: Manufacturer's heavy-duty surface-mounted cast-stainless-steel latch unit designed to resist damage due to slamming, with combination rubber-faced door strike and keeper, and with provision for emergency access. Provide units that comply with regulatory requirements for accessibility at compartments designated as accessible. Mount with through-bolts.
 3. Door Bumper: Manufacturer's heavy-duty rubber-tipped cast-stainless-steel bumper at out-swinging doors. Mount with through-bolts.
 4. Door Pull: Manufacturer's heavy-duty cast-stainless-steel pull at out-swinging doors that complies with regulatory requirements for accessibility. Provide units on both sides of doors at compartments designated as accessible. Mount with through-bolts.
- B. Overhead Bracing: Manufacturer's standard continuous, extruded-aluminum head rail with antigrip profile and in manufacturer's standard finish.
- C. Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel, finished to match the items they are securing, with theft-resistant-type heads. Provide sex-type bolts for through-bolt applications. For concealed anchors, use stainless-steel, hot-dip galvanized-steel, or other rust-resistant, protective-coated steel compatible with related materials.

2.4 MATERIALS

- A. Aluminum Extrusions: ASTM B 221.
- B. Stainless-Steel Sheet: ASTM A 666, Type 304, stretcher-leveled standard of flatness.
- C. Stainless-Steel Castings: ASTM A 743/A 743M.

2.5 FABRICATION

- A. Fabrication, General: Fabricate toilet compartment components to sizes indicated. Coordinate requirements and provide cutouts for through-partition toilet accessories where required for attachment of toilet accessories.
- B. Overhead-Braced Units: Provide manufacturer's standard corrosion-resistant supports, leveling mechanism, and anchors at pilasters to suit floor conditions. Provide shoes at pilasters to conceal supports and leveling mechanism.
- C. Floor-Anchored Units: Provide manufacturer's standard corrosion-resistant anchoring assemblies with leveling adjustment nuts at pilasters for structural connection to floor. Provide shoes at pilasters to conceal anchorage.
- D. Door Size and Swings: Unless otherwise indicated, provide **24-inch**, in-swinging doors for standard toilet compartments and **36-inch** wide, out-swinging doors with a minimum **32-inch** wide, clear opening for compartments designated as accessible.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for fastening, support, alignment, operating clearances, and other conditions affecting performance of the Work.
 - 1. Confirm location and adequacy of blocking and supports required for installation.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Comply with manufacturer's written installation instructions. Install units rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices.
 - 1. Maximum Clearances:
 - a. Pilasters and Panels: **1/2 inch.**
 - b. Panels and Walls: **1/2 inch.**
 - 2. Full-Height (Continuous) Brackets: Secure panels to walls and to pilasters with full-height brackets.
 - a. Locate bracket fasteners so holes for wall anchors occur in masonry or tile joints.
 - b. Align brackets at pilasters with brackets at walls.
- B. Overhead-Braced Units: Secure pilasters to floor and level, plumb, and tighten. Set pilasters with anchors penetrating not less than **1-3/4 inches** into structural floor unless otherwise indicated in manufacturer's written instructions. Secure continuous head rail to each pilaster with no fewer than two fasteners. Hang doors to align tops of doors with tops of panels, and adjust so tops of doors are parallel with overhead brace when doors are in closed position.

3.3 ADJUSTING

- A. Hardware Adjustment: Adjust and lubricate hardware according to hardware manufacturer's written instructions for proper operation. Set hinges on in-swinging doors to hold doors open approximately 30 degrees from closed position when unlatched. Set hinges on out-swinging doors to return doors to fully closed position.

END OF SECTION 102113.19

SECTION 102123 - CUBICLE CURTAIN AND TRACK

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. This Section includes the following:
 - 1. Curtain tracks and curtain carriers.
 - 2. Shower curtains.

1.3 PERFORMANCE REQUIREMENTS

- A. Curtains: Provide curtain fabrics with the following characteristics:
 - 1. Fabrics are flame resistant and are identical to those that have passed NFPA 701 when tested by a testing and inspecting agency acceptable to authorities having jurisdiction.
 - a. Identify fabrics with appropriate markings of applicable testing and inspecting agency.

1.4 SUBMITTALS

- A. Product Data: Include durability, laundry temperature limits, fade resistance, and fire-test-response characteristics for each type of curtain fabric indicated.
 - 1. Include data on each type of applied curtain treatment.
- B. Shop Drawings: Show layout and types of cubicles, sizes of curtains, number of carriers, anchorage details, and conditions requiring accessories. Indicate dimensions taken from field measurements.
 - 1. Include details on blocking above ceiling.
- C. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:
 - 1. Suspended ceiling components.
 - 2. Structural members to which suspension systems will be attached.
 - 3. Items penetrating finished ceiling, including the following:
 - a. Lighting fixtures.
 - b. Air outlets and inlets.
 - c. Speakers.
 - d. Sprinklers.
 - e. Access panels.
 - f. Curtain track.

- D. Samples for Verification: For each type of product required, prepared on Samples of size indicated below.
1. Curtain Fabric: 12-inch square swatch or larger as required to show complete pattern repeat, from dye lot used for the Work, with specified treatments applied. Mark top and face of material.
 2. Mesh Top: Not less than 4 inches square.
 3. Curtain Track: Not less than 4 inches long.
 4. Curtain Carrier: Full-size unit.
- E. Manufacturer Certificates: Signed by manufacturers certifying that products comply with requirements.
- F. Operation and Maintenance Data: For curtains, track, and hardware to include in operation and maintenance manuals.

1.5 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install cubicles until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

PART 2 - PRODUCTS

2.1 CURTAIN TRACKS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, or are equal to, the following:
1. ADC Hospital Equipment; Division of Automatic Devices Company.
 2. Alderman Acres Mfg, Inc.
 3. Barjan Manufacturing Ltd.
 4. Coldraco, Inc.
 5. Covoc Corporation.
 6. Crowder, K. N. Manufacturing, Inc.
 7. Cubicle Curtain Factory, Inc.
 8. Diamond Drapery Co.
 9. Erwin and Associates, Inc.
 10. General Cubicle Company, Inc.
 11. Imperial Fastener Company, Inc.
 12. InPro Corporation.
 13. Nelson, A. R. Co.
 14. Pryor Products.
 15. Salsbury Industries.
 16. Silent Gliss USA Inc.
 17. Tubular Specialties Manufacturing, Inc.
- B. Extruded-Aluminum Track: Not less than 1-1/4 inches wide by 3/4 inch high; with minimum wall thickness of 0.050 inch.
1. Finish: Selected from manufacturer's standard finishes.
- C. Track Accessories: Fabricate splices, end caps, connectors, end stops, coupling and joining sleeves, wall flanges, brackets, ceiling clips, and other accessories from same material and with same finish as track.

1. End Stop: Removable with carrier hook.
- D. Curtain Carriers: Two nylon rollers and nylon axle with chrome-plated steel or aluminum hook.
- E. Curtain Carriers: One-piece nylon glide with chrome-plated steel hook.
- F. Exposed Fasteners: Stainless steel.
- G. Concealed Fasteners: Hot-dip galvanized or Stainless steel.

2.2 CURTAINS

- A. Cubicle Curtain Fabric: Flame resistant, stain resistant, and antimicrobial.
 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, or are equal to, those specified:
 2. Color & Pattern: **As selected by Architect from manufacturer's standard range.**
 3. Mesh Top: White Nylon mesh.
- B. Shower Curtain Fabric: Flame resistant, stain resistant, and antimicrobial.
 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, or are equal to, those specified:
 2. Color: White vinyl
 3. Curtain Grommets: Two-piece, rolled-edge, rustproof, nickel-plated brass; spaced not more than 6 inches o.c.; machined into top hem.

2.3 CURTAIN FABRICATION

- A. Fabricate curtains to comply with the following requirements:
 1. Width: Equal to track length from which curtain is hung plus 10 percent added fullness, but not less than 12 inches added fullness.
 2. Length: Equal to floor-to-ceiling height, with 20-inch mesh top, and minus distance above the finished floor at bottom as follows:
 - a. Cubicle Curtains: 12 inches.
 - b. Shower Curtains: 1/2 inch.
 3. Top Hem: Not less than 1 inch and not more than 1-1/2 inches wide, triple thickness, reinforced with integral web, and double lock stitched.
 4. Mesh Top: Top hem not less than 1 inch and not more than 1-1/2 inches wide, triple thickness, reinforced with integral web, and double lock stitched. Double lock stitch bottom of mesh directly to 1/2-inch triple thickness, top hem of curtain fabric.
 5. Bottom Hem: Not less than 1 inch and not more than 1-1/2 inches wide, double thickness and double lock stitched.
 6. Side Hems: Not less than 1/2 inch and not more than 1-1/4 inches wide, with double turned edges, and single lock stitched.
- B. Vertical Seams: Not less than 1/2 inch wide, double turned and double stitched.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances, and other conditions affecting performance of work.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Install tracks level and plumb, according to manufacturer's written instructions.
- B. Up to 16 feet in length, provide track fabricated from 1 continuous length.
 - 1. Curtain Track Mounting: Surface.
- C. Surface Track Mounting: Fasten surface-mounted tracks at intervals of not less than 24 inches. Fasten support at each splice and tangent point of each corner. Center fasteners in track to ensure unencumbered carrier operation. Attach track to ceiling as follows:
 - 1. Mechanically fasten as recommended by manufacturer.
- D. Track Accessories: Install splices, end caps, connectors, end stops, coupling and joining sleeves, and other accessories as required for a secure and operational installation.
- E. Curtain Carriers: Provide curtain carriers adequate for 6-inch spacing along full length of curtain plus an additional carrier.
- F. Curtains: Hang curtains on each curtain track.

3.3 PROTECTION

- A. Protect installed recessed track openings with nonresidue adhesive tape to prevent construction debris from impeding carrier operation. Remove tape prior to Substantial Completion.

END OF SECTION

SECTION 102601 - WALL AND CORNER GUARDS

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:
 - 1. Corner guards.

1.3 REFERENCE STANDARDS

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- B. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials;2015.

1.4 SUBMITTAL

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Indicate physical dimensions, features, anchorage details, and rough-in measurements
- C. Manufacturer's Instructions: Indicate special procedures, perimeter conditions requiring special attention.

PART 2 - PRODUCTS

2.1 COMPONENTS

- A. Surface-Mounted, Metal Corner Guards: Fabricated as one piece from formed or extruded metal with formed edges; with 90- or 135-degree turn to match wall condition.
 - 1. Manufacturers
 - a. Columbia Architectural Products Industries; <https://capcornerguards.com/>
 - b. Construction Specialties, Inc; <https://www.c-sgroup.com/>
 - c. Korogard Stainless Steel: <https://www.korogard.com>
 - 2. Material: Stainless-steel sheet, Type 304.

- a. Thickness: Minimum 0.0625 inch (1.3 mm).
- b. Finish: Directional satin, No. 4.
3. Wing Size: Nominal 1 by 1 inches (38 by 38 mm)
4. Corner Radius: 1/8 inch (3 mm)
5. Mounting: Adhesive.
6. Full Height at Cork Wall Covering Outside Corners or 48" on all outside corners.

2.2 FABRICATION

- A. Fabricate components with tight joints, corners and seams.
- B. Form end trim closure by capping and finishing smooth.

2.3 FINISHES

- A. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that rough openings, concealed blocking, and anchors are correctly sized and located..

3.2 PREPARATION

- A. Complete finishing operations, including painting, before installing wall and door protection.
- B. Before installation, clean substrate to remove dust, debris, and loose particles.

3.3 INSTALLATION

- A. Install components in accordance with manufacturer's instructions, level and plumb, secured rigidly in position to wall framing members only.

3.4 CLEANING

- A. Remove excess adhesive using methods and materials recommended in writing by manufacturer.

END OF SECTION 10260

SECTION 102813 - TOILET ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes:
 - 1. Toilet accessories
 - 2. Custodial accessories
 - 3. Changing Tables

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include the following:
 - 1. Construction details and dimensions.
 - 2. Anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
 - 3. Material and finish descriptions.
 - 4. Manufacturer's warranty
- B. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.
 - 1. Identify locations using room designations indicated on Drawings.
 - 2. Identify products using designations indicated on Drawings.
- C. Maintenance Data: For accessories to include in maintenance manuals specified in Division 1. Provide lists of replacement parts and service recommendations.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Provide products of same manufacturer for each type of accessory unit and for units exposed to view in same areas, unless otherwise approved by Architect.
- B. Product Options: Accessory requirements, including those for materials, finishes, dimensions, capacities, and performance, are established by specific products indicated in the Toilet and Bath Accessory Schedule. Other manufacturers' products with equal characteristics may be considered. See Division 1 Section "Substitutions

1.5 COORDINATION

- A. Coordinate accessory locations with other work to prevent interference with clearances required for access by disabled persons, proper installation, adjustment, operation, cleaning, and servicing of accessories.
- B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work

1.6 WARRANTY

- A. Special Mirror Warranty: Manufacturer's standard form in which manufacturer agrees to replace mirrors that develop visible silver spoilage defects and that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 TOILET ACCESSORIES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Basco, Inc.
 - 2. Bobrick Washroom Equipment, Inc.
 - 3. Georgia Pacific
 - 4. General Accessory Manufacturing Co. (GAMCO)
 - 5. Ginger; GUSA, Inc.
 - 6. Kimberly Clark
 - 7. Bradley Corporation
- B. Basis-of-Design Product: The design of Toilet and Bath Accessories are listed in the "Toilet and Bath Accessory Schedule" at the end of this Section. Subject to compliance with requirements, provide the named product or a comparable product.

2.2 CUSTODIAL ACCESSORIES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, or are equal to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- C. Basis-of-Design Product: The design for accessories is based on products indicated. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:
 - 1. A & J Washroom Accessories, Inc.
 - 2. American Specialties, Inc.
 - 3. Bobrick Washroom Equipment, Inc.
 - 4. Bradley Corporation.
 - 5. General Accessory Manufacturing Co. (GAMCO).

2.3 MATERIALS

- A. Stainless Steel: ASTM A 666, Type 304, with No. 4 finish (satin), in 0.0312-inch minimum nominal thickness, unless otherwise indicated.
- B. Mirror Glass: ASTM C 1036, Type I, Class 1, Quality q2, nominal 6.0 mm thick, with silvering, electroplated copper coating, and protective organic coating complying with FS DD-M-411.
- C. Galvanized Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.
- D. Fasteners: Screws, bolts, and other devices of same material as accessory unit, tamper and theft resistant when exposed, and of galvanized steel when concealed.

2.4 FABRICATION

- A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
- B. Secure mirrors to walls in concealed, tamper-resistant manner with special hangers, toggle bolts, or screws. Set units level, plumb, and square at locations indicated, according to manufacturer's written instructions for substrate indicated.
- C. Install grab bars to withstand a downward load of at least 250 lbf, when tested according to method in ASTM F 446.

3.2 ADJUSTING AND CLEANING

- A. Adjust accessories for unencumbered, smooth operation and verify that mechanisms function properly. Replace damaged or defective items.
- B. Clean and polish exposed surfaces according to manufacturer's written recommendations.

3.3 TOILET AND BATH ACCESSORY SCHEDULE

- A. See toilet and bath accessory locations on Drawings.
- B. Toilet and Bath Accessory Schedule:
 - 1) Mirror Unit: With stainless steel angle frame, concealed wall hangers, 1/4" float glass, Bobrick B-290 18X36
 - 2) Paper Towel Dispenser: Owner Furnished Contractor Installed

- 3) Soap Dispenser: Owner Furnished Contractor Installed
- 4) Toilet Paper dispenser: Owner Furnished Contractor Installed
- 5) Grab Bar: 42" long straight grab bar, stainless steel, Bobrick #6806 x 42.
- 6) Grab Bar: 36" long straight grab bar, stainless steel, Bobrick #6806 x 36.
- 7) Grab Bar: 18" long straight grab bar, stainless steel Bobrick #6806 x 18.
- 8) Grab Bar: 24" long straight grab bar, stainless steel Bobrick #6806 x 24.
- 9) Sanitary Napkin Disposal surface mounted, stainless steel, Bobrick "Contura Series" model B-270.
- 10) Mop Rack: Stainless steel utility shelf with mop/broom holder and rag hoods Bobrick Model #B-239 x 34.
- 11) Curtain rod, Shower Curtain and Shower Hooks: Heavy Duty 72" stainless steel tubing shower rod Bobrick model B-6107 with stainless steel shower hooks Bobrick model 204-1 and opaque matt white vinyl antibacterial shower curtain Bobrick model 204-3 and fabric shower curtain as specified in Section 102123.
- 12) Shower Bench: Reversible folding shower seat with stainless steel frame and seat construction of one-piece, 1/2" (13mm) thick, solid phenolic with matte-finish, white colored, melamine surfaces and black phenolic-resin core. Seat shall be reversible for left or right hand installation in the field. Seat shall be attached to wall by two 3" diameter mounting flanges Seat shall be able to lock in upright position when not in use.
- 13) Shower Grab Bar: Two-wall grab bar for 36" x 36" shower stall, stainless steel 1-1/2" diameter with concealed mounting, Bobrick model number #B-6861.
- 14) Towel Hook- Smedbo Studio Design Hook, SME-17047 in brushed chrome, or equal.
- 15) Recessed Changing Table: Koala Kare Products KB110-SSRE horizontal recessed mounted stainless steel baby changing station

END OF SECTION 102813

SECTION 104400 - FIRE PROTECTION SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Portable fire extinguishers.
 - 2. Fire-protection cabinets for portable fire extinguishers.
 - 3. Mountain Brackets

1.3 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for fire-protection cabinets.
 - 1. Fire Extinguishers: Include rating and classification.
 - 2. Fire-Protection Cabinets: Include roughing-in dimensions, details showing mounting methods, relationships of box and trim to surrounding construction, door hardware, cabinet type, trim style, and panel style.
- B. Maintenance Data: For fire extinguishers and fire-protection cabinets to include in maintenance manuals.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain fire extinguishers and fire-protection cabinets through one source from a single manufacturer.
- B. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers."
- C. Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.

1.5 COORDINATION

- A. Coordinate size of fire-protection cabinets to ensure that type and capacity of fire extinguishers indicated are accommodated.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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

2.2 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B.
- B. Aluminum: Alloy and temper recommended by aluminum producer and manufacturer for type of use and finish indicated, and as follows:
 - 1. Sheet: ASTM B 209 (ASTM B 209M).
 - 2. Extruded Shapes: ASTM B 221 (ASTM B 221M).
- C. Stainless-Steel Sheet: ASTM A 666, Type 304.
- D. Tempered Float Glass: ASTM C 1048, Kind FT, Condition A, Type I, Quality q3, 3 mm thick, Class 1 (clear).

2.3 PORTABLE FIRE EXTINGUISHERS

- A. Manufacturers:
 - 1. Larsen's Manufacturing Company.
 - 2. JL Industries
 - 3. Nystrom Building Products
 - 4. Potter Roemer
- B. General: Provide fire extinguishers of type, size, and capacity for each fire-protection cabinet indicated.
 - 1. Valves: Manufacturer's standard.
 - 2. Handles and Levers: Manufacturer's standard.
 - 3. Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B and bar coding for documenting fire extinguisher location, inspections, maintenance, and recharging.
- C. Multipurpose Dry-Chemical Type Larson Number MP10 UL-rated A:10-B:C, 10-lb nominal capacity, with monoammonium phosphate-based dry chemical in manufacturer's standard enameled container.

2.4 FIRE-PROTECTION CABINET (FEC)

- A. Basis-of-Design Product: Alpine Series Fire Extinguisher Cabinets: Model# FC-7044-DV manufactured by Nystrom Building Products 9300 73rd Ave. N Brooklyn Park, MN 55428 www.nystrom.com
- B. Subject to compliance with requirements as specified here-in, provide the named product, or a comparable product by one of the following or approved equal:

1. Larsen's Manufacturing Company.
 2. JL Industries
 3. Potter Roemer
- C. Description: Steel unit construction, continuous piano hinge with 180 degree opening. Weld joints and grind smooth.
1. Cabinet Mounting: **Surface**]
 2. Components:
 - a. Door and Frame:
 - 1) 6063-T5 anodized aluminum.
 - a) Color and Finish: Satin finish, clear polyester coated.
 - b. Tub: 0.036 inch (0.9mm) cold rolled steel
 - 1) Color Finish: White factory applied powder coat paint finish.
 - c. Door Type: **Duo Vertical with tempered safety glass**
 3. Options:
 - a. Door Glazing Type: Tempered clear float glass.
 - b. Lettering: **Vertical die cut, red**
 - c. Latching: **Pull handle roller catch**
 4. Cabinet Dimensions: Size to match extinguisher type.
 5. Fire Rating: Non-fire rated
- D. Accessories:
1. Mounting Bracket: Manufacturer's standard steel, designed to secure fire extinguisher to fire-protection cabinet, of sizes required for types and capacities of fire extinguishers indicated, with plated or baked-enamel finish.
 2. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location.

2.5 MOUNTING BRACKETS

- A. Manufacturers:
1. Nystrom Building Products
 2. Larsen's Manufacturing Company.
 3. JL Industries
 4. Potter Roemer
- B. Mounting Brackets: Manufacturer's standard galvanized steel, designed to secure fire extinguisher to wall or structure, of sizes required for types and capacities of fire extinguishers indicated, with plated or baked-enamel finish.
1. Color: Red.
- C. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as indicated by Architect.
1. Identify bracket-mounted fire extinguishers with the words "FIRE EXTINGUISHER" in red letter decals applied to mounting surface. Orientation shall be vertical.

2.6 FABRICATION

- A. Fire-Protection Cabinets: Provide manufacturer's standard box (tub), with trim, frame, door, and hardware to suit cabinet type, trim style, and door style indicated.
- B. Cabinet Doors: Fabricate doors according to manufacturer's standards, from materials indicated and coordinated with cabinet types and trim styles selected.
- C. Cabinet Trim: Fabricate cabinet trim in one piece with corners mitered, welded, and ground smooth.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine walls and partitions for suitable framing depth and blocking where semi-recessed cabinets will be installed.
- B. Examine fire extinguishers for proper charging and tagging. Remove and replace damaged, defective, or undercharged units.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Prepare recesses for semi-recessed fire-protection cabinets as required by type and size of cabinet and trim style.

3.3 INSTALLATION

- A. General: Install fire-protection specialties in locations and at mounting heights indicated:
 - 1. Fire-Protection Cabinets: As indicated in drawings.
 - 2. Mounting Brackets: 54 inches above finished floor to top of fire extinguisher U.N.O.
- B. Mounting Brackets: Fasten mounting brackets to surfaces, square and plumb, at locations indicated.

3.4 ADJUSTING AND CLEANING

- A. Remove temporary protective coverings and strippable films, if any, as fire-protection specialties are installed, unless otherwise indicated in manufacturer's written installation instructions.
- B. Adjust fire-protection cabinet doors to operate easily without binding. Verify that integral locking devices operate properly.
- C. On completion of fire-protection cabinet installation, clean interior and exterior surfaces as recommended by manufacturer.
- D. Touch up marred finishes, or replace fire-protection cabinets that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by fire-protection cabinet manufacturer.

- E. Replace fire-protection cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 10 4400

SECTION 122413 - ROLLER WINDOW SHADES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract including General Conditions and Division 1 Specification sections apply to work of this section.

1.2 SECTION INCLUDES

- A. Manually operated roll-up fabric window shades including mounting and operating hardware.

1.3 RELATED SECTIONS

- A. Section 061000 - Rough Carpentry: Blocking for support of window shade hardware.
- B. Section 079200 - Joint Sealants: Sealants for perimeter of shade system.
- C. Section 092900 - Gypsum Board: Gypsum board ceilings to contain recessed window shade pockets.

1.4 REFERENCES

- A. NFPA 701-99 - Fire Tests for Flame-Resistant Textiles and Films.

1.5 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product specified, including:
 - 1. Preparation instructions and recommendations.
 - 2. Installation and maintenance instructions.
 - 3. Styles, material descriptions, dimensions of individual components, profiles, features, finishes and operating instructions.
 - 4. Storage and handling requirements and recommendations.
 - 5. Mounting details and installation methods.
- B. Shop Drawings: For all roller shades. Use same room designations as indicated on the Drawings, field verified window dimensions, quantities, type of shade, controls, fabric, and color, and include opening sizes and key to typical mounting details.
- C. Selection Samples: For each finish product specified, two complete sets of shade cloth options and aluminum finish color samples representing manufacturer's full range of available colors and patterns.
- D. Verification Samples: For each finish product specified, two complete sets of shade components, unassembled, demonstrating compliance with specified requirements. Shade fabric sample and aluminum finish sample as selected, representing actual product, color, and patterns. Mark face of material to indicate interior faces.

- E. Maintenance Data: Methods for maintaining roller shades, precautions regarding cleaning materials and methods, instructions for operating hardware and controls.
- F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Obtain roller shades through one source from a single manufacturer with a minimum of twenty years experience in manufacturing products comparable to those specified in this section.
- B. NFPA Flame-Test: Passes NFPA 701. Materials tested shall be identical to products proposed for use.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver window shades until building is enclosed and construction within spaces where shades will be installed is substantially complete.
- B. Deliver products in manufacturer's original, unopened, undamaged containers with labels intact.
- C. Label containers and shades according to Window Shade Schedule.
- D. Store products in manufacturer's unopened packaging until ready for installation.

1.8 SEQUENCING

- A. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
- B. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.9 PROJECT CONDITIONS

- A. Install roller shades after finish work and ambient temperature, humidity and ventilation conditions are maintained at levels recommended for project upon completion.

1.10 WARRANTY

- A. Hardware and Shade Fabric: Draper's standard twenty-five year limited warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following Basis-of-Design. Submit equal or better products for approval under provisions of Substitutions requirements Section 01 6300.

1. Basis of Design: Draper, Inc., 411 S. Pearl P. O. Box 425, Spiceland, IN 47385-0425; Web: www.draperinc.com

2.2 MANUALLY OPERATED WINDOW SHADES

- A. Manually Operated Window Shades with Independent Control: Manually operated, vertical roll-up, fabric window shade with components necessary for complete installation; Manual FlexShade as manufactured by Draper, Inc.
 1. Operation: Bead chain and clutch operating mechanism allowing shade to stop when chain is released. Designed never to need adjustment or lubrication. Provide limit stops to prevent shade from being raised or lowered too far.
 - a. Clutch mechanism: Fabricated from high carbon steel and molded fiberglass reinforced polyester or injected molded nylon.
 - b. Bead chain loop: Stainless steel bead chain hanging at side of window.
 - c. Idler Assembly: Provide roller idler assembly of molded nylon with adjustable length idler pin to facilitate easy installation, and removal of shade for service.
 2. Mounting: Recessed in Ceiling
 3. Roller Tube: Fabricated from extruded aluminum, galvanized steel, or enameled steel. Diameter, wall thickness, and material selected by manufacturer to accommodate shade type and size. Fabric connected to the roller tube with LSE (low surface energy) double sided adhesive specifically developed to attach coated textiles to metal. Adhesive attachment to eliminate horizontal impressions in fabric.
 4. Endcaps: Stamped steel with universal design suitable for mounting to ceiling, wall, and jamb. Provide size compatible with roller size.
 - a. Endcap covers: To match fascia or headbox color.
 5. Shade slat: Slat encased in heat seamed hem.
 6. Pocket-style Headbox: Aluminum fabrication with removable closure, endcaps, and back and top cover piece, flange for ceiling grids, and bottom panel with slot for shade fabric:
 - a. Finish: White
 7. Fabric
 - a. Color and pattern as selected by Architect from manufacturer's full range with 5% openness.

PART 2 - EXECUTION

2.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

2.2 PREPARATION

- A. Coordinate requirements for blocking, construction of shade pockets, and structural supports to ensure adequate means for installation of window shades.
- B. Coordinate requirements for power supply conduit, and wiring required for window shade motors and controls.

2.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install roller shades level, plumb, square, and true. Allow proper clearances for window operation hardware.
- C. Install the following items to conceal roller and operating mechanism. Do not use exposed fasteners.
 - 1. Fascias.

2.4 TESTING AND DEMONSTRATION

- A. Test window shades to verify that operating mechanism, fabric retainer, and other operating components are functional. Correct deficiencies.
- B. Demonstrate operation of shades to Owner's designated representatives.

2.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.
- C. Replace damaged roller shades that cannot be repaired, in a manner approved by Architect, before time of Substantial Completion.

2.6 SCHEDULES

- A. Refer to drawings for shade types and locations.

END OF SECTION