

PROJECT MANUAL

RENOVATION

UNION COUNTY OFFICES

in

CLAYTON, NEW MEXICO



June 3, 2020

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REQUEST FOR BIDS

Sealed bids will be accepted for construction of the Renovation of the Union County Offices. Bids will be received by the Union County Manager's Office, 100 Court Street / P.O. Box 430, Clayton, NM 88415 until July 1, 2020 at 3pm MDT when bids will be opened and read aloud. The public opening setting will be determined based on distancing requirements in effect at that time. Bidders will be general contractors licensed by the State of New Mexico. Bid security in the amount of at least 5% of the total bid will be required with each bid submitted in accordance with the Project Manual. The owner reserves the right to accept or reject any or all bids for any reason. Contact the office of the architect with questions.

Due to mandated restrictions on group meetings there will be no pre-construction conference. The project facility at 200 Court Street, Clayton, NM will be unlocked for inspection of the property June 24, 2020 from 10am to 5pm when the architect will be on site for informal meetings with individuals if desired. Site inspection access other days can be arranged through the County Manager's office.

Printed plans sets can be viewed through arrangements with the office of the architect. Plan sets in electronic format can be obtained at no cost through the office of the architect:
Alpha Design, 108 Cook Ave. / P.O. Box 241, Raton, NM 87740, phone 575-445-4235, email: alphadesign@bacavalley.com. . Addenda will be issued to parties that receive a full set of plans including the project manual from the office of the architect.

DOCUMENT 00100 - INSTRUCTION TO BIDDERS

To be considered, your Bid must be made in accord with these instructions.

DOCUMENTS

See the Request For Bids for instructions about obtaining plan sets.

EXAMINATION

Bidders shall carefully examine the Documents and the construction site to obtain first hand knowledge of existing conditions. Contractors will not be given extra payments for conditions which can be determined by examining the site and Documents.

QUESTIONS

Submit all questions about the plan set to the architect. Bidders will promptly notify the architect of any ambiguity, inconsistency or error which they may discover upon examination of the documents, site or the local conditions. Replies will be issued to all prime bidders of record as addenda to the drawings and specifications and will become part of the contract. Questions received less than 48 hours before the bid opening may not be answered.

SUBSTITUTIONS

To obtain approval to use unspecified products, bidders should submit written requests at least five days before the bid date and hour. Requests received after this time will not be considered. Requests should clearly describe the products for which approval is asked, including all data necessary to demonstrate acceptability. If the product is acceptable, the architect will approve it in an addendum issued to all prime bidders on record.

BASIS OF BID

The bidder must include all alternatives and unit price items (if any) shown on the Bid Forms. Failure to comply will be cause for rejection. No segregated bids or assignments will be considered.

BASIS OF AWARD

Award is expected be made to the qualified bidder submitting the lowest base bid (adjusted per resident contractor preference and resident veteran contractor preference) however the owner reserves the right to accept or reject any bids for any reason.

RESIDENT CONTRACTOR PREFERENCE and RESIDENT VETERAN CONTRACTOR PREFERENCE

As required by the New Mexico Administrative Code (NMAC) a preference will be given to resident contractors and resident veteran contractors that submit a Resident Contractor Certificate or a Resident Veteran Contractor Certificate issued by NM Taxation and Revenue Department with the sealed bid.

Certificates issued by the NM Taxation and Revenue Dept. allow a 5 or 10% price preference against competing bids. See NMSA Section 13-1-22 and 13-4-2 for additional information. Apply for certificates through the NM Taxation and Revenue Dept. Allow sufficient time for the bidder's Certified Public Accountant to prepare the documents required for submittal to the NM Taxation and Revenue Department and time for the Department to process the application. Applicable certificates have an expiration date. Certificates issued by the State Procurement Office or other State agencies do not apply.

PREPARATION OF BIDS

Bids will be made on unaltered bid form or copy of the bid form found in the project manual. Bidder will make no stipulations or qualifications to the bid in any manner. Where bidder is a corporation, bids must be signed with the legal name of the corporation and the legal signatures of an officer authorized to bind the corporation to a contract.

BID SUBMITTAL

Bids will be submitted in paper form delivered as described in the Request For Bids and on the Bid Form with original signatures. Bids submitted by email or fax will not be accepted.

BID SECURITY

Bids shall be accompanied by an acceptable Bid Security (Bid Bond) in an amount equal to at least five percent (5%) of the Base Bid payable without condition to the Owner as a guarantee that the Bidder, if awarded the Contract, will promptly execute such Contract in accordance with the Bid and in the manner and form required by the Contract Documents, and will furnish a good and sufficient bond for the faithful performance of same. The Bid Security of the three (3) lowest Bidders will be retained until the contract is awarded or other disposition is made thereof.

The Bid Security Form may be in the form of "Bid Bond" AIA Document A310 as published by the American Institute of Architects or a similar printed form from other sources. Printed bonds will be issued by a bonding company licensed by the State of New Mexico. Bid bonds may also be in the form of a cashiers check for at least 5% of the base bid issued by a state or national bank payable to the owner by name.

PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

The awarded bidder will furnish and pay for the two separate bonds covering faithful performance of the Contract and payment of all obligations arising thereunder. Furnish bonds issued by a licensed surety company acceptable to the Owner. Deliver bonds to the Owner not later than the date of execution of the Contract. Failure or neglecting to deliver the specified bonds as specified will be considered as having abandoned the Contract and the Bid Security will be retained as liquidated damages. Proof of Bonding will be accepted in the form of a 100% Performance Bond and 100% Labor and Material Payment Bond using AIA formats or similar.

BUILDERS RISK INSURANCE

The awarded bidder will provide a Builders Risk insurance policy for 100% of the project. Furnish the policy documents issued by a licensed surety company acceptable to the Owner. Deliver the policy to the Owner not later than the date of execution of the Contract. Failure or neglecting to deliver the specified policy as specified will be considered as having abandoned the Contract and the Bid Security will be retained as liquidated damages.

SUBMITTAL

Submit Bid in an opaque, sealed envelope. Clearly identify the envelope with: Project Name , Date, and Name of Bidder. Submit Bids in accord with the Invitation to Bid.

MODIFICATION AND WITHDRAWAL

Bid may not be modified after submittal. Bidders may withdraw Bids at any time before bid opening, but may not resubmit them. No Bid may be withdrawn or modified after the bid opening except where the award of Contract has been delayed for more than thirty (30) calendar days.

DISQUALIFICATION

The Owner reserves the right to disqualify Bids, before or after opening, upon evidence of collusion, with intent to defraud, or other illegal practices upon the part of the bidder.

SUBCONTRACTOR AND SUPPLIER LIST

The Bidder shall complete the List of Subcontractors and include the form with the completed bid form. The list will include any subcontract and supplier providing \$5000 or more in goods or services. Prior to the award of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable and substantial objection to any person or organization on such list. If the Owner or Architect notifies the Bidder in writing of refusal to accept such person or organization,

the bidder may, at bidders option, withdraw the bid and receive the Bid Bond in full, or submit an acceptable substitute Subcontractor with an adjustment, if any, in the bid price to cover the difference in cost occasioned by such substitution. Owner may, at Owner's discretion, accept the increased Bid price or may disqualify the Bidder and return the Bid Bond.

EXECUTION OF CONTRACT

The Owner reserves the right to accept any Bid, and to reject any and all Bids, or to negotiate Contract Terms with the various Bidders, when such is deemed by the Owner to be in the Owner's best interest.

The accepted Bidder shall assist and cooperate with the Owner in preparing the formal Contract Agreement, and within (10) days following its presentation shall execute same and return it to the Owner.

Notwithstanding any delay in the preparation and execution of the formal Contract Agreement, each Bidder shall be prepared, upon written Notice To Proceed, to apply for a building permit within seven (7) calendar days following receipt of official written order or a date stipulated in such order, and commence work within seven (7) days after the date that the building permit is issued.

NM DEPARTMENT OF WORKFORCE SOLUTIONS

Comply with all Department of Labor requirements including but not limited to compliance with the State Wage Rate Decision issued for this construction project.

Any bidder or subcontractor with a proposed contract or subcontract of \$60,000 or more is required by the NM Dept. of Workforce Solutions to be registered with the Dept. of Labor BEFORE submitting a bid to the owner. Work experience on prior projects with an applicable State wage rate does not qualify as being registered with the Dept. of Workforce Solutions. Registration requires an annual fee paid to the Dept. of Workforce Solutions along with other procedural steps which can take several days to process so prospective bidders and subcontractors are urged to apply early for NM Dept. of Workforce Solutions registration. Further information is available online at www.dws.state.nm.us/ and click on "public works".

END OF SECTION

SECTION 00220 - SOILS INVESTIGATION DATA

No soil investigation data is available for the site.

TO: Union County Manager
100 Court Street
Clayton, NM 88415

FROM: _____

business name and mailing address of bidder

The undersigned, (herein called "Bidder") in compliance with the Instructions to Bidders, having examined the Drawings and Specifications and related Documents as prepared by Alpha Design and it's consultants and having examined the site of the proposed Work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials and supplies, and to construct the project in accordance with the Contract Documents, and at the prices stated below. These prices are to cover all expenses incurred in performing the Work required under the Contract Documents of which this proposal is a part, except for gross receipts tax on the construction contract. Bidder agrees that bids will remain valid for up to 90 calendar days.

A. BASE BID

Bidder agrees to furnish all labor, materials, equipment and services required to construct and complete the Work as described and required by the herein above stated Documents, in accordance therewith for the sum of:

_____ DOLLARS
spelled

\$ _____
same amount in numbers

The bid amount indicated does NOT includes NM gross receipts tax to be added to the contract.

B. ADDENDA ACKNOWLEDGMENT

The undersigned acknowledges receipt of the following Addenda:

ADDENDA NUMBER	ADDENDA DATE
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

C. SIGNATURE

Bidder understands that the Owner reserves the right to reject any or all Bids and to waive any formalities in the bidding.

The bidder agrees that this Bid shall be good and may not be withdrawn for a period of thirty (30) calendar days after the scheduled closing time for receiving bids.

Upon receipt of written notice of the acceptance of this Bid, Bidder will execute the formal Contract within ten (10) days and deliver the required Surety Bond or Bonds and Certificates of Insurance as required by the Contract Documents and post bid Submittals as required by the Instructions to Bidders.

The Bid Security attached, in the sum of five per cent of the bid amount, is to become the property of the Owner in the event the Contract, Bonds, and Insurance are not executed within the time above set forth, as liquidated damages for the delay and additional expense to the Owner.

Submitted to the owner with this bid form are the Bid Security (bid bond) and the Subcontractor and Supplier List.

DATE:

BY: _____
(Authorized Signature)

(Title)

(Business Address)

E. BID SUBMITTAL CHECK LIST

The sealed envelope submitted to the Owner for bidding on this project contains:

- 1) This three page bid form
- 2) Campaign Contribution Disclosure Form (4 page form found in this project manual)
- 3) Bid Bond (from contractor's bonding company or cashier's check from a State or Federal bank)
- 4) Copy of Bidder's New Mexico current active General Contractor's license.
- 5) Copy of Resident Contractor Preference Certificate, or Resident Veteran Contractor Certificate (if either apply) (issued to contractor by NM Taxation and Revenue Dept.)
- 6) Copy of current registration with New Mexico Dept. of Workforce Solutions.

END OF BID FORM

CAMPAIGN CONTRIBUTION DISCLOSURE FORM

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 Contribution" 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 official's behalf for the purpose of electing the official to either statewide or local office. "Campaign Contribution" 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:

Contribution Made By: _____

Relation to Prospective Contractor: _____

Name of Applicable Public Official: _____

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)

SECTION 01010 - SUMMARY OF WORK and CONTRACT TIME

PART 1 - GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of this Contract comprises the construction of the Renovation of the former Kiser Elementary School into the new Union County Administrative Offices.

1.02 CONTRACTOR'S DUTIES

- A. Except as specifically noted, provide and pay for:
 - 1. Labor, materials and equipment.
 - 2. Tools, construction equipment and machinery.
 - 3. Water, heat and utilities required for construction.
 - 4. Other facilities and services necessary for proper execution and completion of Work.
- B. Pay legally required gross receipts, consumer and use taxes.
- C. Secure and pay for, as necessary for proper execution and completion of work, and as applicable at time of receipt of bids:
 - 1. Permits
 - 2. Government fees
 - 3. Licenses
- D. Give required notices.
- E. Comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of Work.
- F. Promptly submit written notice to Architect of observed variance of Contract documents from legal requirements.
- G. Enforce strict discipline and good order among employees. Do not employ on Work:
 - 1. Unfit persons.
 - 2. Persons not skilled in assigned task.

1.03 CONTRACTOR'S USE OF THE PREMISES

- A. Contractor shall have complete and exclusive use of the premises for execution of the Work except :
 - 1. Do not block access by the owner and emergency forces to the fire district storage building. Keep the driveway unobstructed.
 - 2. Portions of the construction will be performed by the owner's forces. Provide access and cooperate with the owner's forces to plan and perform the work.
- B. Assume full responsibility for protection and safekeeping of products stored on premises.
- C. Limit use of site for Work and storage.
 - 1. Protect on and off site improvements including, paving, utilities, structures, grading, existing trees. Remove and replace any improvements damaged.
- D. Camping on site is not permitted.

1.04 PERMIT APPLICATION

- A. Notice To Proceed will be issued upon completion of Agreement between Owner and Contractor and delivery of bonds and certificates of insurance.
- B.
- C. After receiving the Notice To Proceed the contractor will promptly apply for a State Building Permit to NM Construction Industries Division.

1.05 CONTRACT TIME

- A. Contract time will begin 7 days after the date of the building permit and will last for **180 days** (calendar).
- B. Because most of the work is on the interior of the existing building shell additional days will NOT be added to the construction time for poor weather conditions.
- C. No additional payments will be provided for poor weather conditions or for early completion.

1.06 LIQUIDATED DAMAGES

- A. Contractor shall be charged \$1000 per calendar day for each day past the contract time that work has not reached substantial completion as determined by architect and owner. Charge to the contractor will be deducted from balance owed to contractor by owner, not as a penalty, but as liquidated damages for breach of the contract.

1.07 MOVE-IN ASSISTANCE

- A. After the completion of construction the Contractor will assist the owner with moving into the facility. If move-in occurs after the allowed contract time liquidated damages will not apply to the move-in time.*
- B. The Contractor will provide at least two personnel capable of heavy lifting and moving, one or more pickup trucks or larger, basic moving equipment, and basic tools for up to five days business days to assist the owner with moving and positioning equipment, files, assembling, and general moving tasks.*
- C. Schedule move-in time with the owner. Move-in may require the contractor's forces to remobilize to the site after completion of construction if requested by the owner.*

END OF SECTION

SECTION 01060 - REGULATORY REQUIREMENTS

PART 1 - GENERAL

Conditions of the Contract and Division 1, as indexed, apply to all work under this section.

1.01 GOVERNING REGULATION

- A. Conform to all laws, ordinances, rules and regulations applicable to the location of the project.

- B. Conform to the following standards and regulations of the following codes of the editions adopted by NM State Statues.:
 - 1. International Building Codes
 - 2. National Fire Codes by NFPA
 - 3. Fire Resistance Ratings per ICBO, NFPA, or Underwriters Laboratories, where not otherwise specified.
 - 4. Uniform Mechanical Code
 - 5. Uniform Plumbing Code
 - 6. National Electric Code
 - 7. ANSI A117.1 Accessible and Usable Buildings and Facilities
 - 8. Other specific regulations as specified in individual sections.
 - 9. New Mexico Building Codes

- C. NEW MEXICO AND UNITED STATES DEPARTMENTS OF LABOR
 - 1. Contractor shall comply with rules and regulations of the New Mexico Dept. of Workforce Solutions and with the US Dept. of Labor.
 - 2. Applicable State wage rate schedule is included in the project manual for reference.

END OF SECTION

SECTION 01340 - PRODUCT DATA AND SAMPLES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Submit Product Data and Samples required by Contract Documents to the architect.

1.02 PRODUCT DATA

A.. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data.

1. Clearly mark each copy to identify pertinent materials, products or models.
2. Show dimensions and clearances required.
3. Shop performance characteristics and capacities.
4. Show wiring diagrams and controls when applicable.

1.04 SAMPLES

A. Submit samples when requested or needed to convey the product properties.

B. Samples should be of sufficient size and quantity to clearly illustrate:

1. Functional characteristics of product or material, with integrally related parts and attachment devices.
2. Full range of color samples.

C. After review, samples may be used in construction of Project if requested by the Contractor.

1.05 CONTRACTOR RESPONSIBILITIES

A. Review Shop Drawings, Product Data and Samples prior to submission.

B. Verify:

1. Field measurements.
2. Field construction criteria.
3. Catalog numbers and similar data.

C. Coordinate each submittal with requirements of work and of Contract Documents.

D. Contractor's responsibility for errors and omissions in submittals is not relieved by Architect's review of submittals.

E. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by Architect's review of submittals.

F. Notify Architect, in writing at time of submission, of deviations in submittals from requirements of Contract Documents.

G. Begin no work which requires submittals until return of submittals with architect's comments added to the submittal.

H. After Architect's review, distribute copies to subcontractors who's work involves the information submitted.

1.06 SUBMISSION REQUIREMENTS

A. Schedule submissions at least 10 days before dates reviewed submittals will be needed.

- B. Submit either paper or electronic submittals when appropriate. Submit physical samples when color or texture approval is needed.

1.07 RESUBMISSION REQUIREMENTS

A. Shop Drawings:

1. Revise initial drawings as required and resubmit as specified for initial submittal.
2. Indicate on drawings any changes which have been made other than those requested by architect.
3. Product Data and Samples: Submit new data and samples as required for initial submittal.

1.08 DISTRIBUTION OF SUBMITTALS AFTER REVIEW

A. Distribute copies of Shop Drawings and Project Data which carry architect's written approval to:

1. Contractor's File
2. Job-site File
3. Subcontractors
4. Fabricator
5. others as appropriate

1.10 ARCHITECT'S DUTIES

- A. Review submittals with reasonable promptness.
- B. Review for design concept of project and information given in contract documents.
- C. Review of separate item does not constitute review of an assembly in which item functions.
- D. Affix stamp and initials or signature certifying to review of submittals.
- E. Return submittals to Contractor for distribution.

END OF SECTION

SECTION 01410 - STRUCTURAL TESTS AND SPECIAL INSPECTIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements required for structural tests and special inspections.
- B. Structural testing and special inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve contractor of responsibility for compliance with other construction document requirements.
- C. Contractor is responsible for acquiring, coordinating, and paying for testing of the following portions of the work:
 - 1. Soil preparation, if tested, will be coordinated and paid by the owner with cooperation from the contractor.
 - 2. Concrete cylinder as described in Section 03300, coordinated and paid by the contractor.
 - a. Concrete cylinder testing will be required at the vault floor and ceiling. At least one series of tests (4 cylinders each series) for the floor and one series of tests for the ceiling will be performed.
 - b. No other cylinder testing will be required unless requested and paid by the owner with cooperation from the contractor.
- D. Requirements for contractor to provide quality-assurance and -control services required by architect, owner, or authorities having jurisdiction are not limited by provisions of this section.

1.2 QUALITY ASSURANCE

- A. Testing Agency Qualifications:
 - 1. Minimum qualifications of inspection and testing agencies and their personnel shall comply with ASTM E329-03 Standard Specification for Agencies in the Testing and / or Inspection of Materials Used in Construction.
 - a. Inspectors and individuals performing tests shall be certified for the work being performed as outlined in the appendix of the ASTM E329. Certification by organizations other than those listed must be submitted to the building official for consideration before proceeding with work.

1.3 CONFLICTING REQUIREMENTS, REPORTS, AND TEST RESULTS

- A. If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement.

1.4 SUBMITTALS

- A. The testing agency will keep and distribute records of inspections to the contractor, architect, and owner. Reports will indicate that work inspected was done in conformance to approved construction documents. Discrepancies will be brought to the immediate attention of the contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the architect prior to the completion of that phase of the work.
- B. Inspection reports and test results shall include but not be limited to, the following:
 - 1. Date of inspection.
 - 2. Description of inspections or tests performed including location (reference grid lines, floors, elevations, etc.).
 - 3. Statement noting that the work, material, and / or product conforms or does not conform to the construction document requirements. The compliance indicated will be easy for a layman to find and understand.
 - 4. Name of the testing agency's staff performing the work.

- C. Schedule of Non-Compliant Work: Each testing agency will maintain a log of work that does not meet the requirements of the construction documents. Include reference to original inspection / test report and subsequent dates of re-inspection / retesting.

PART 2 – MATERIALS not used

PART 3 - EXECUTION

3.1 CONTRACTOR'S RESPONSIBILITY

- A. The contractor will coordinate the inspection and testing services with the progress of the work. The contractor shall provide sufficient notice to allow proper scheduling of all personnel. The contractor will provide safe access for performing inspection and on site testing.
- B. The contractor will repair or replace work that does not meet the requirements of the construction documents.
- C. If repair or replacement is found to be needed then procedures shall be submitted for review and acceptance by the architect before proceeding with corrective action.
- D. The contractor shall be responsible for costs of:
 - 1. Testing, re-testing, and re-inspection.
 - 2. Repair or replacement of work that does not meet the requirements of the construction documents.

END OF SECTION

SECTION 01630 - PRODUCT OPTIONS AND SUBSTITUTIONS

PART 1 - GENERAL

1.01 CONTRACTOR'S OPTIONS

- A. For Products specified only by reference standard, select Product meeting that standard, by any manufacturer.
- B. For Products specified by naming several Products or manufacturers, select any one of products and manufacturers named which complies with Specifications.
- C. For Products specified by naming one or more Products or manufacturers and stating "or equivalent substitute", submit a request for substitutions for any Product or manufacturer which is not specifically named.

1.04 SUBSTITUTIONS

- A. Provide architect with submittals and samples allowing the architect with ample time to review the information and respond in writing.
- B. Submit separate request for each substitution. Support each request with:
 - 1. Complete data substantiating compliance of proposed substitution with requirements stated in Contract Documents:
 - a. Product identification, including manufacturer's name and address.
 - b. Manufacturer's literature; identify:
 - 1) Product description.
 - 2) Reference standards when applicable.
 - 3) Performance and test data when applicable.
 - c. Samples when applicable.
 - 2. Itemized comparison of the proposed substitution with product specified; list significant variations.
 - 3. Data relating to changes in construction schedule.
 - 4. Any effect of substitution on separate contracts.
 - 5. List of changes required in other work or Products.
 - 6. Identify amount of net change to Contract sum if any.
- C. Substitutions will not be considered for acceptance when:
 - 1. They are implied on shop drawings or product data submittals without a formal request from Contractor.
 - 2. They are requested directly by a subcontractor or supplier.
 - 3. Acceptance will require substantial revision of Contract Documents.
- D. Substitute products shall not be ordered or installed without written acceptance of Architect.
- E. Architect will determine acceptability of proposed substitutions.

1.05 CONTRACTOR'S REPRESENTATION

- A. In making formal request for substitution Contractor represents that:
 - 1. Contractor has investigated proposed product and has determined that it is equal to or superior in all respects to that specified.
 - 2. Contractor will provide same warranties or bonds for substitution as for product specified.
 - 3. Contractor will coordinate installation of accepted substitution into the Work, and will make such changes as may be required for the Work to be complete in all respects.
 - 4. Contractor waives claims for additional costs caused by substitution which may subsequently become apparent.
 - 5. Cost data is complete and includes related costs under his Contract, but not:
 - a. Costs under separate contracts.
 - b. Architect costs for redesign or revision of Contract documents.

1.06 ARCHITECT DUTIES

- A. Review Contractor's requests for substitutions with reasonable promptness.
- B. Notify Contractor, in writing, of decision to accept or reject requested substitution.

END OF SECTION

01630-1

SECTION 01700 - CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 SUBSTANTIAL COMPLETION

- A. When Contractor considers the Work is substantially complete, he shall submit to Architect:
1. A written notice that the Work, or designated portion thereof, is substantially complete.
 2. A list of items to be completed or corrected.
- B. Within a reasonable time after receipt of such notice, Architect will make an inspection to determine the status of completion.
- C. Should Architect determine that the Work is not substantially complete:
1. Architect will promptly notify the Contractor in writing, giving the reasons therefor.
 2. Contractor shall remedy the deficiencies in the Work, and send a second written notice of substantial completion to the Architect.
 3. Architect will reinspect the Work.
- D. When Architect concurs that the Work is substantially complete, he will:
1. Prepare a Certification of Substantial Completion on AIA Form G704, accompanied by Contractor's list of items to be completed or corrected, as verified and amended by the Architect.
 2. Submit the Certificate to Owner and Contractor for their written acceptance of the responsibilities assigned to them in the Certificate.

1.03 FINAL INSPECTION

- A. When Contractor considers the Work is complete, he shall submit written certification that:
1. Contract Documents have been reviewed.
 2. Work has been inspected for compliance with Contract Documents.
 3. Work has been completed in accordance with Contract Documents.
 4. Equipment and systems have been tested in the presence of the Owner's representative and are operational.
 5. Work is completed and ready for final inspection.
- B. Architect will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.
- C. Should Architect consider that the Work is incomplete or defective:
1. Architect will promptly notify the Contractor in writing, listing the incomplete or defective work.
 2. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to Architect that the Work is complete.
 3. Architect will reinspect the Work.
- D. When the Architect finds that the Work is acceptable under the Contract Documents, he shall request the Contractor to make closeout submittals.

1.04 CONTRACTOR'S CLOSEOUT SUBMITTALS TO ARCHITECT

- A. Evidence of compliance with requirements of governing authorities in the form of Certificates of Inspection as required.
- B. Operating and Maintenance Data, Instructions appropriate for Owners maintenance and operation of products furnished under the Contract.
- C. Warranties and Bonds and Service and Maintenance Contracts executed by respective manufacturer, supplier and subcontractor.
- D. Keys and Keying Schedules for all locking doors.

- E. Evidence of Payment and Release of Liens: To requirements of General and Supplementary Conditions.
- F. Spare parts and Maintenance Materials appropriate for the maintenance and operation of products furnished.
- G. Certificate of Insurance for Products and Completed Operations.

1.05 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit a final statement of accounting to Architect.
- B. Statement shall reflect all adjustments to the Contract Sum:
 - 1. The original Contract Sum.
 - 2. Additions and deductions resulting from:
 - a. Previous Change Orders.
 - b. Deductions for uncorrected Work.
 - c. Penalties and Bonuses.
 - 3. Total Contract Sum, as adjusted.
 - 4. Previous payments.
 - 5. Sum remaining due.
- C. Architect and Contractor will prepare a final Change Order, reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders.

1.06 MOVE-IN

- A. *See Section 01010 – Summary of Work and Contract Time for move-in assistance requirements.*

1.07 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in the Conditions of the Contract.

END OF SECTION

SECTION 01710 - CLEANING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. During construction maintain premises and public properties free from accumulation of waste, debris, and rubbish, caused by operations.
- B. At the completion of each subcontractors work, it shall be the Contractor's responsibility to see that surfaces adjacent to the work just completed are cleaned and/or repaired and returned to its original condition.
- C. At completion of Work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces; leave project clean and ready for occupancy.

1.02 SAFETY REQUIREMENTS

- A. Standards: Maintain Project in accord with applicable safety and insurance standards.
- B. Hazards Control:
 - 1. Store volatile wastes in covered metal containers, and remove from premises daily.
 - 2. Prevent accumulation of wastes which create hazardous conditions.
 - 3. Provide adequate ventilation during use of volatile or noxious substances.
- C. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
 - 1. Do not burn or bury rubbish and waste materials on project site.
 - 2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
 - 3. Do not dispose of wastes into streams or waterways.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.1 DURING CONSTRUCTION

- A. Execute cleaning to ensure the construction area is maintained free from accumulations of waste materials and rubbish.
- B. Wet down dry materials and rubbish to lay dust and prevent blowing dust.
- C. At reasonable intervals during progress of Work, clean construction area and dispose of waste materials, debris and rubbish.
- D. Provide on-site containers for collection of waste materials, debris and rubbish. Do not allow waste to accumulate.
- E. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.
- F. Broom clean interior building areas when ready to receive finish painting and continue broom cleaning on an as-needed basis until building is ready for substantial completion or occupancy.

- G. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.
- H. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

3.02 FINAL CLEANING

- A. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.
- B. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials, from sight-exposed interior and exterior finished surfaces; polish surfaces so designated to shine finish.
- C. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.
- D. Replace air conditioning filters if units were operated during construction.
- E. Clean ducts, blowers and coils, if air conditioning units were operated without filters during construction.
- F. Maintain cleaning until Project, or portion thereof, is occupied by Owner.

END OF SECTION



LABOR RELATIONS DIVISION

401 Broadway NE
Albuquerque, NM 87102
Phone: 505-841-4400
Fax: 505-841-4424

226 South Alameda Blvd
Las Cruces, NM 88005
Phone: 575-524-6195
Fax: 575-524-6194

WWW.DWS.STATE.NM.US

1596 Pacheco St, Suite 103
Santa Fe, NM 87505
Phone: 505-827-6817
Fax: 505-827-9676

Wage Decision Approval Summary

1) Project Title: Union County Office Remodel
Requested Date: 05/31/2020
Approved Date: 06/03/2020
Approved Wage Decision Number: UN-20-1171-B

Wage Decision Expiration Date for Bids: 10/01/2020

2) Physical Location of Jobsite for Project:
Job Site Address: 200 Court Street
Job Site City: Clayton
Job Site County: Union

3) Contracting Agency Name (Department or Bureau): County of Union
Contracting Agency Contact's Name: Angie Gonzales
Contracting Agency Contact's Phone: (575) 374-8896 Ext.

4) Estimated Contract Award Date: 07/07/2020

5) Estimated total project cost: \$1,500,000.00
a. Are any federal funds involved?: No
b. Does this project involve a building?: Yes - Remodel a former grade school into county offices. Includes concrete, cmu masonry, wood framing, structural steel, membrane roofing, drywall/plaster, paint, carpet, tile, doors, windows, finishes, plumbing, hvac, electrical, and related work.
c. Is this part of a larger plan for construction on or appurtenant to the property that is subject to this project?: No
d. Are there any other Public Works Wage Decisions related to this project?: No
e. What is the ultimate purpose or functional use of the construction once it is completed?: County Office Building

6) Classifications of Construction:

Classification Type and Cost Total	Description
General Building (B) Cost: \$1,500,000.00	Remodel a former grade school into county offices. Remodel a former grade school into county offices. Includes concrete, cmu masonry, wood framing, structural steel, membrane roofing, drywall/plaster, paint, carpet, tile, doors, windows, finishes, plumbing, hvac, electrical, and related work.



TYPE "B" – GENERAL BUILDING

Effective January 1, 2020

Trade Classification	Base Rate	Fringe Rate	Apprenticeship
Asbestos Workers/Heat and Frost insulators	32.26	12.06	0.60
Asbestos Workers/Heat and Frost insulators-Los Alamos County	34.69	12.06	0.60
Boilermaker/ blacksmith	34.97	28.85	0.60
Bricklayer/Block layer/Stonemason	24.46	8.81	0.60
Carpenter/Lather	24.63	11.24	0.60
Carpenter-Los Alamos County	27.80	13.19	0.60
Millwright/ pile driver	33.16	25.24	0.60
Cement Mason	21.07	10.33	0.60
Electricians-Outside Classifications-Zone 1			
Ground man	23.27	12.67	0.60
Equipment Operator	33.39	15.35	0.60
Lineman/Tech	39.28	16.91	0.60
Cable Splicer	43.21	17.95	0.60
Electricians-Outside Classification: Zone 2			
Ground man	23.27	12.67	0.60
Equipment Operator	33.39	15.35	0.60
Lineman/ technician	39.28	16.91	0.60
Cable Splicer	43.21	17.95	0.60

Electricians-Outside Classifications: Los Alamos			
Ground man	23.94	12.85	0.60
Equipment Operator	34.35	15.60	0.60
Lineman/ Technician	40.41	17.21	0.60
Cable Splicer	44.45	18.28	0.60
Electricians-Inside Classifications: Zone 1			
Wireman/ low voltage technician	32.70	11.18	0.60
Cable Splicer	35.97	11.28	0.60
Electricians-Inside Classification: Zone 2			
Wireman/ low voltage technician	35.64	11.27	0.60
Cable Splicer	38.91	11.37	0.60
Electricians-Inside Classification: Zone 3			
Wireman/ low voltage technician	37.61	11.33	0.60
Cable Splicer	40.88	11.43	0.60
Electricians-Inside Classification: Zone 4			
Wireman/ low voltage technician	41.20	11.44	0.60
Cable Splicer	44.47	11.53	0.60
Electricians-Inside Classification: Los Alamos			
Wireman/ low voltage technician	37.61	13.21	0.60
Cable Splicer	40.88	13.47	0.60
Elevator Constructor	43.80	35.25	0.60
Elevator Constructor Helper	35.04	35.25	0.60
Glazier			
Journeyman/ Fabricator	20.25	5.35	0.60

Delivery Driver	9.00	5.35	0.60
Ironworker	27.00	15.75	0.60
Painter (Brush/Roller/Spray)	17.00	6.88	0.60
Paper Hanger	17.00	6.88	0.60
Drywall- Light Commercial & Residential			
Ames tool operator	25.08	7.10	0.60
Hand finisher/machine texture	24.08	7.10	0.60
Plasterer	23.17	8.99	0.60
Plumber/Pipefitter	30.76	11.62	0.60
Roofer	25.23	7.97	0.60
Sheet metal worker			
Zone 1	31.03	17.26	.60
Zone 2 – Industrial	32.03	17.26	.60
Zone 3 – Los Alamos	33.03	17.26	.60
Soft Floor Layer	19.94	17.26	0.60
Sprinkler Fitter	30.90	22.29	0.60
Tile Setter	24.46	8.81	0.60
Tile Setter Helper/Finisher	16.53	8.81	0.60
Laborers			
Group I- Unskilled and semi-skilled	17.50	6.27	0.60
Group II- Skilled	18.50	6.27	0.60
Group III- Specialty	20.75	6.27	0.60
Masonry Laborers			
Group I- Unskilled and Semi-Skilled	18.00	6.27	0.60
Group II- Skilled	19.75	6.27	0.60
Group III- Specialty	20.25	6.27	0.60
Reinforcing iron workers and post tension	24.00	6.27	0.60



Operators			
Group I	20.95	7.27	0.60
Group II	23.11	7.27	0.60
Group III	23.57	7.27	0.60
Group IV	24.01	7.27	0.60
Group V	24.20	7.27	0.60
Group VI	24.41	7.27	0.60
Group VII	24.52	7.27	0.60
Group VIII	27.56	7.27	0.60
Group IX	29.95	7.27	0.60
Group X	33.35	7.27	0.60
Truck Drivers			
Group I-VII	16.45	7.87	0.60
Group VIII	16.51	7.87	0.60
Group IX	18.45	7.87	0.60

NOTE: All contractors are required to pay SUBSISTENCE, ZONE AND INCENTIVE PAY according to the particular trade. Details are located in a PDF attachment at WWW.DWS.STATE.NM.US. Search Labor Relations/Labor Information/Public Works/Prevailing Wage Rates.

For more information about the Subsistence, Zone, and Incentive Pay rates, or to file a wage claim, contact the Labor Relations Division at (505) 841-4400 or visit us online at www.dws.state.nm.us.

SECTION 02200 - EARTHWORK

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Provide all excavating, filling and grading shown on the Drawings and specified herein.
- B. Comply with the recommendations of the Geotechnical Investigation dated May 18, 2018 prepared by Engineering Analytics including but not limited to:
 - 1. Removal of topsoil from building location and adjacent areas.
 - 2. Excavation to 12 feet below existing grading from the building location and adjacent areas.
 - 3. Scarify the bottom of the excavation then condition and recompact.
 - 4. Recompact the same removed fill, imported structural fill, or a combination in lifts to bring the building pad and surrounding fill up to the new fill heights required.
 - 5. Contract with a licensed civil engineer to test the fill compaction.
- C. Assure that new exterior concrete slabs are constructed over compacted fill described in the Geotechnical Report. If exterior concrete slabs are outside of the over-excavated and recompact areas described in the Geotechnical Investigation then prepare the base under the new exterior concrete by removing the topsoil, scarifying the base, then condition and compact the base. Add structural fill up to the required grade in compacted lifts as described in the Geotechnical Report.

1.02 QUALITY ASSURANCE

- A. Contractor will subcontract a licensed civil engineer. The engineer will determine whether the foundations are founded on properly prepared soils as specified herein. Excavation for construction shall be observed and the recommendation of remedial excavation, filling and compaction made by the engineer shall be followed prior to the placing of foundations.
- B. The contractor's civil engineer will provide any additional testing necessary if any on the fill material.
- C. The contractor's civil engineer will determine the suitability of bearing fill and backfill material. Compaction tests of backfill shall be taken at least once on each fill lift, or more frequently if recommended by the soils engineer.

1.03 JOB CONDITIONS

- A. Locations known or shown: During the life of the Contract, existing utility lines that are to be retained, and utility lines constructed shall be protected from damage. Repair damaged utility lines to the satisfaction of the utility owner.
- B. Locations not known or shown: Contractor shall confirm location of utilities with owner and utility companies. If damage occurs to any existing utility lines that are not shown or the locations of which are not known to the Contractor, report thereof shall be made immediately to the Architect.
- C. Conduct excavation operations and the removal of debris to ensure minimum interference with alleys, streets, walks and other adjacent occupied or used rights-of-way. Do not close or obstruct streets, walks or other occupied or used facilities without permission from the Owner.
- D. Protect structures, utilities, sidewalks, pavement, trees, shrubs, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Fill and Backfill: See the Geotechnical report.

PART 3 - EXECUTION

3.01 EXCAVATION

- A. Notify New Mexico One Call System 575-260-1990 before beginning any excavation as required by State law.
- B. Conform to elevations and dimensions shown and extend excavation a sufficient distance from footings and foundations to permit placing and removal of formwork, installation of services and inspection.
- C. Bottoms of all excavations for foundations, concrete slabs and paving shall be founded on soil prepared and compacted in accordance with the Geotechnical Report. Additional labor and material under this requirement shall be at the Contractor's expense.
- D. Material to be excavated is assumed to be earth and other materials that can be removed with power shovel. If rock is encountered within limits of excavation, the Contractor shall immediately notify the Architect and shall not proceed. For purposes of establishing volume of rock excavation, rock is defined as any stone or boulder that cannot be removed by a power shovel, ½ cubic yard bucket capacity, without use of continuous drilling or by explosives.

3.2 SHORING

- A. Shore and brace excavations where necessary to prevent accident to persons or damage to property and injurious caving or erosion. Remove shoring during backfilling in a manner to prevent caving.

3.03 COMPACTION

- A. See the Geotechnical report.

3.04 FILL AND BACKFILL

- A. Stockpile bearing fill and backfill on site until required. Place, grade, and shape stockpiles for proper drainage.
- B. See the Geotechnical report.

3.05 GRADING

- A. Uniformly rough grade area. Provide uniform levels or shapes between new and existing grades. Grade areas to drain away from structures. Provide surfaces free from irregular surface changes, and as follows:
 - 1. Paving, Walks and Slabs on Grade: Shape surface of areas to line grade and cross-section, with finished surface smooth and even not more than ½" above or below the required subgrade elevation.
 - 2. Grade surface of fill under building and sidewalk slabs smooth and even, free of voids and to required elevation.
- B. Where no existing material is need to be excavated, scarify the existing surface before depositing fill. Where excavation is required to maintain the minimum fill depth, remove soils and whatever else is encountered to necessary depth.

3.06 FIELD QUALITY CONTROL

- A. Excavations, trenches, shoring, sheathing and bracing shall be in accordance with all applicable Governmental regulations.

- B. Areas supporting buildings and paved areas shall be inspected by the contractor's soils engineer during stripping and subgrade approved prior to proceeding with filling operations and base placement.

3.07 MAINTENANCE

- A. Protect newly graded areas from traffic and erosion, and keep free of trash and debris. Repair and re-establish grades in settled, eroded and rutted or otherwise damaged areas, regardless of the cause.
- B. Where completed areas are disturbed by construction operations of any sort or adverse weather, scarify surface, reshape, and compact to required density.

3.09 EXCESS AND WASTE MATERIALS

- A. Remove unsuitable fill material and excess existing fill, including excess soil, rock, trash, and new debris from the site and legally dispose of it.

END OF SECTION

SECTION 02500 - WALK, ROAD, AND PARKING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Provide all labor, materials and equipment necessary for placement of concrete walks and slabs as shown on the Drawings and specified herein.

1.02 SUBMITTALS

- A. Submit cylinder test results from each concrete delivery to the architect.
- B. If requested by the architect submit additional information about materials and qualifications.

1.03 TRAFFIC CONTROL

- A. Provide barricades, warning signs, and warning lights for the movement of traffic, safety and to cause the least interruption of the Work.

1.04 QUALITY ASSURANCE

- A. Concrete will be delivered on site from a ready-mixed concrete company meeting ASTM C 94/C 94M requirements for production facilities and equipment. No site mixed concrete will be used without prior approval from the architect.

PART 2 - PRODUCTS

2.01 CONCRETE MATERIALS

- A. Forms: Either steel or wood, of size and strength to resist movement during concrete placement and retain horizontal and vertical alignment until removal. Use forms that are straight and free of distortion and defects. Do not use bent, twisted, split or defective form materials.
- B. Use flexible spring steel forms or laminated boards to form radius bends as required.
- C. Coat forms with a non-staining, clear release agent that will not discolor or otherwise deface the surface of the concrete.
- D. Concrete: Refer to Section 03300: Cast in Place Concrete. All exterior concrete in contact with earth shall be type I/II, seven sack mix or Type V, six sack mix.
- E. Water: potable
- F. Bituminous expansion joint filler shall be a preformed non extruding bituminous treated fiberboard as manufactured by the Celotex Corp. (Flexcell) or equal.
- G. Air Entraining Admixture: ASTM C 260.
- H. Chemical Admixtures: Provide admixtures certified by the manufacturer to be compatible with other admixtures and to contain not more than 0.1% percent water soluble chloride ions by mass of cementitious material.
 - 1. Water Reducing Admixture: ASTM C 494/C 494M, Type A.
 - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
 - 3. Water Reducing and Retarding Admixture: ASTM C 494/494M, Type D.
 - 4. High Range, Water Reducing Admixture: ASTM C 494/C 494M, Type F.
 - 5. High Range, Water Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 - 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

- I. Membrane curing compounds shall be of the surface-membrane type as manufactured by WR Grace & Co. or equal.
- J. Fiber Reinforcement will be synthetic fibrillated polypropylene fibers engineered and designed for use in concrete pavement, complying with ASTM C 1116, Type III, ½ to 1 ½ inches long. Manufactured by WR Grace & Co. or equal.

2.02 CURING MATERIALS

- A. Moisture Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- B. Water: Potable.
- C. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete. Manufactured by ChemMasters or equal.

2.3 RELATED MATERIALS

- A. Expansion and Isolation Joint Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.
- B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

2.4 CONCRETE MIXTURES

- A. Prepare design mixtures proportioned to provide normal weight concrete with the following properties:
 - 1. Exterior flatwork, curbs, driveways, and sidewalks will have a minimum strength of 3500 psi at 28 days unless noted otherwise on the plans.
 - 2. Maximum Water-Cementitious Materials Ratio at point of placement: 0.45.
 - 3. Slump Limit: 4 inches plus or minus 1 inch.
- B. Add air-entraining admixture at manufacturer's prescribed rate to result in normal weight concrete at point of placement.
- C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- D. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.
- E. Cementitious Materials: Limit percentage by weight of cementitious materials other than portland cement according to ACI 301 requirements.
 - 1. Fly ash or pozzolan: 25 percent.
 - 2. Ground granulated blast furnace slag: 50 percent.
 - 3. Combined fly ash or pozzolan, and ground granulated blast furnace slag: 50 percent, with fly ash or pozzolan not exceeding 25 percent.
- F. Synthetic Fiber: Uniformly disperse in concrete mix at manufacturer's recommended rate, but not less than 1.5 lb./cubic yard.
- G. Furnish batch certificates for each batch discharged and used in the work.

PART 3 - EXECUTION

3.01 SURFACE PREPARATION

- A. Remove all loose material from the compacted sub-base to check for unstable areas and the need for additional compaction.

3.02 FORM CONSTRUCTION

- A. Set forms to the required grades and lines, rigidly braced and secured with wood or metal stakes. Install sufficient lengths of forms to allow continuous progress of the work so that forms can remain in place at least 24 hours after concrete placement.
- B. Check completed formwork for grade and alignment to the following tolerances: Top of form units: Not more than 1/8" in 10'. Vertical face: Longitudinal axis, not more than 1/4' in 10'.
- C. Clean forms after each use, and coat with form oil as often as required to ensure separation from concrete without damage.

3.03 JOINTS

- A. Construct expansion, weakened-plane (contraction), and construction joints true-to-line with face perpendicular to surface of the adjacent surface unless otherwise shown. Construct transverse joints at right angles to the curb centerline unless otherwise shown.
- B. When the curb and gutter is joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise shown.
- C. Construction joints: Place construction joints at the end of all pours and at locations where placement operations are stopped for a period of more than ½ hour, except where such pours terminate at expansion joints.
- D. Construct joints as shown on the Drawings, or if not shown, use standard metal keyway section forms.
- E. Expansion Joints: Provide premolded joint filler for expansion joints abutting catch basins, manholes, inlets, structures, walks, and other fixed objects.
- F. Locate expansion joints at 12' - 0" o.c. maximum, unless otherwise shown in the plans, in each direction.
- G. Extend joint fillers full width and depth of the joint, and not less than ½" or more than 1" below the finished surface. Furnish joint fillers in one-piece lengths for the full width being placed, wherever possible. Conform top edge of filler to top profile of curbs and gutters.
- H. Protect the top edge of the joint filler during concrete placement with a metal cap or other temporary material. Remove protection after both sides of joint are placed.
- I. Fillers and Sealants: Provide fillers and sealants where shown or specified. Comply with the requirements of Section 07920: Sealants and Caulking for preparation of joints, materials, installation and performance.

3.04 CONCRETE PLACEMENT

- A. Inspection: Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast in. Coordinate work and schedule with other related trades.
- B. Remove snow, ice, or frost from subbase surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces.
- C. Moisten subbase to provide a uniform dampened condition at the time concrete is placed. Do not place concrete around manholes or other surfaces until they are at required finish elevation and alignment.
- D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.

- E. Do not add water to concrete during delivery or at project site. Do not add water to fresh concrete after testing.
- F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
 - 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement dowels and joint devices.
- H. Screed pavement surfaces with a straightedge and strike off.
- I. Commence initial floating using bull floats or darbies to impart an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.
- J. Curbs and Gutters: When automatic machine placement is used for curb and gutter placement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not approved, remove and replace with formed concrete.
- K. When adjoining pavement lanes are placed in separate pours do not operate equipment on concrete until pavement has attained 85 percent of its 28 day compressive strength.
- L. Cold Weather Placement: Comply with ACI 306.1 Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
- M. Hot Weather Placement: Comply with ACI 301 when hot weather conditions exist.

3.4 CONCRETE FINISHING

- A. Do not add water to concrete surfaces during finishing operations.
- B. After striking off and consolidating concrete, smooth the exposed surface by screening and floating. Adjust floating to compact the surface and produce a uniform texture.
 - 1. Begin the second floating operation when bleed water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
- C. After completion of floating and when excess moisture or surface sheen has disappeared, complete surface finishing with a broom finish by drawing a wet hair broom across the concrete surface, in the direction of drainage, providing an abrasive, textured or otherwise slip-proof surface to all exterior concrete slabs. Broom finish ramps perpendicular to slope of ramp. Walks shall be edged on both sides and at expansion joints.

3.05 CONCRETE PROTECTION AND CURING

- A. Contractor is responsible for curing concrete. Concrete containing footprints, writing, and other marks will be removed and replaced by the Contractor at Contractor's expense. Imprints identifying the Contractor's name and date may be placed if first approved and located by the Architect.

- B. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause excessive moisture loss. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- D. Curing Methods: Cure concrete by moisture curing, moisture retaining cover curing, curing compound, or a combination of these.
 - 1. Moist curing by keeping 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 laps over adjacent absorptive covers.
 - 2. Curing Compound applied uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subject to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

END OF SECTION

SECTION 03200 - CONCRETE REINFORCING

PART 1 - GENERAL

1.01 QUALITY ASSURANCE

- A. Reinforcing steel shall be detailed, fabricated and placed in accordance with A.C.I.'s Manual of Concrete Practice.
- B. All concrete is reinforced unless specifically noted "Unreinforced Concrete." If no reinforcing is indicated, use minimums per ACI.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Reinforcing Steel: New intermediate grade steel, ASTM Standard A615, Grade 60.
- B. Welded Wire Fabric or Cold-Drawn Wire for Concrete Reinforcing: Conform to current "Standard Specifications for Welded Steel Wire Fabric for Concrete Reinforcement" (ASTM A 185).
- C. Tie Wire: Full annealed, copper bearing steel wire, 16 gage minimum.
- D. Polypropylene Fiber: 100% fibrillated fibers manufactured specifically for use as concrete reinforcement and shall meet or exceed ASTM C-1116 Type III 4.1.3 and ASTM C-1116 Performance Level 1.

PART 3 - EXECUTION

3.01 GENERAL

- A. Metal reinforcement, at the time concrete is placed, shall be free from rust, scale or other coatings that will destroy or reduce the bond. All bars shall be bent to conform accurately to the Drawings, and all bending shall be done cold. Bars shall be free from defects and damage that can potentially weaken the bar's strength in any direction.
- B. Shop fabricate all reinforcing. Sizes and shapes shall be within tolerances allowed by ACI and ASTM specifications.

3.02 PLACEMENT

- A. All bars shall be supported and wired together to prevent displacement by construction loads or the placing of concrete. Provide bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcement in place. Do not use wood, brick, or other unacceptable materials.
- B. Where the concrete surface will be exposed to the weather in the finished structure, the portions of all accessories in contact with the formwork shall be galvanized or shall be made of plastic.
- C. Mesh shall lap at least 1-1/2 meshes plus end extension of wires by not less than 1/2" slabs. In lieu of adequate support for mesh, one man shall be designated to lift the mesh during placing of concrete so that it is completely surrounded by concrete and not less than 2" above the bottom of slab on ground or 1/2" above formwork.
- D. For exposed to view concrete surfaces, where legs of supporters are in contact with forms, and for sandblasted or bush-hammered concrete, provide supports with legs which are plastic protected (CRSI class 1 protection), or which have stainless steel tips (CRSI class 2 protection).

- E. Over waterproof membranes, use precast concrete chairs to prevent penetration of the membrane.
- F. In slabs and walls, splices of reinforcing in all foundations shall be continuous around corners or corner bars provided. Lap all splices a minimum of 36 diameters. All splices shall provide sufficient lap to transfer the stress between bars by bond and shear.
- G. Provide protection of reinforcing as shown on the drawings and as follows:
 - 1. 3" protection for concrete deposited against the ground.
 - 2. 2" protection for bars larger than #5 or 1-1/2" for bars #5 and smaller where concrete is exposed to the ground or weather after removal of forms.
 - 3. In all other cases, the thickness of concrete over the reinforcement shall be at least equal to the diameter of the bars protected.
- H. Mix and install propylene fiber "fibermesh" reinforcing as recommended by fiber manufacturer where indicated on the plans.

END OF SECTION

SECTION 03300 - CAST IN PLACE CONCRETE

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Provide all concrete, forms, accessories, earthwork, and related preparations shown or implied on the Drawings and specified herein.

1.02 SUBMITTALS

- A. Submit to the architect the proposed design mix. The mix will include quantities and sources of all aggregates, cement, fly ash, and admixtures to be used. Mix designs are to be prepared by a State certified testing laboratory regularly engaged in designing and testing concrete. Test results for mix designs to be used shall be within the past 24 months.
- B. Submit additional product information if requested by the owner or architect.

1.03 QUALITY ASSURANCE

- A. Comply with the following codes and standards except where more stringent requirements are shown or specified:
1. American Concrete Institute (ACI) 301, "Specifications for Structural Concrete for Buildings"
 2. ACI 318, "Building Code Requirements for Reinforced Concrete."
 3. Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice"
- B. Testing of the concrete on site or samples taken on site will be performed at the owner's option with full cooperation from the contractor. If the owner chooses to test the concrete then the owner will pay for the testing.
- C. Materials and installed work may require testing and retesting at any time during the progress of work.

PART 2 - PRODUCTS

2.01 FORM MATERIAL

- A. Panel type materials to provide continuous straight smooth exposed surfaces. Furnish in the largest practicable sizes to minimize the number of joints and to conform to the joint system shown.
1. Use overlaid plywood complying with US Product Standard PS-1 "BB A-C or B-B High Density Overlaid Concrete Form" Class 1.
 2. Use plywood complying with US product Standard PS-1 "B-B (Concrete Form) Plywood" Class 1 exterior grade or better, mill-oiled and edge sealed, with each piece bearing legible inspection trademark.
- B. Forms for unexposed finish concrete: Plywood, lumber, metal, or other acceptable material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Form release agent: Provide commercial formulation form release agent with a maximum of 350 g/l volatile organic compounds (VOC) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
- D. Form Ties: Factory fabricated adjustable length, removable or snap off metal form ties designed to prevent form deflection and to prevent spalling of concrete upon removal. Provide units that will leave no metal closer than 1.5 inches to the plane of the exposed concrete surface.
1. Provide conical tie inserts that when removed will leave holes no larger than 1 inch in diameter on the concrete surface.

2.02 REINFORCING MATERIAL

- A. Reinforcing Bars: ASTM A615, Grade 40 for No. 3 and No. 4 deformed bars. Grade 60 for deformed bars larger in diameter than No. 4.
- B. Epoxy coated reinforcing bars: ASTM A775.
- C. Steel Wire: ASTM A82 plain cold drawn steel.
- D. Welded Wire Fabric: ASTM A185 welded steel wire fabric.
- E. Supports for Reinforcement: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Use wire bar type supports complying with CRSI specifications.
 - 1. For slab on grade, use supports with sand plates or horizontal runners where base material will not support chair legs.
 - 2. For all concrete surfaces where legs of supports are in contact with forms, provide supports with legs that are protected by plastic (CRSI class 1) or stainless steel (CRSI class 2).

2.03 CONCRETE MATERIAL

- A. Portland Cement: ASTM C150, Type 1. Use one brand of cement throughout project unless otherwise acceptable to the architect.
- B. Fly Ash: ASTM C618, Type F.
- C. Normal Weight Aggregates: ASTM C33 and as specified. Provide aggregates from a single source for exposed concrete. For exposed exterior surfaces do not use fine or coarse aggregates that contain substances that cause spalling. Local aggregates not complying with ASTM C33 that have been shown to produce concrete of adequate strength and durability by special tests or actual service may be used when acceptable to the architect.
- D. Water: potable.
- E. Admixtures: Provide concrete admixtures that contain not more than 0.1% chloride ions.
- F. Air Entraining Admixture: ASTM C260 certified by manufacturer to be compatible with other required admixtures.
- G. Water Reducing Admixture: ASTM C494, Type A.
- H. High Range Water Reducing Admixture: ASTM C494, type F or type G.
- I. Water Reducing Accelerating Admixture: ASTM C494, type C.
- J. Water Reducing Retarding Admixture: ASTM C494, type D.
- K. Corrosion Inhibitor Admixture: Calcium nitrate based corrosion inhibitor.

2.04 RELATED MATERIALS

- A. Reglets: Where sheet flashing or bituminous membranes are terminated in reglets provide reglets of not less than 0.0217 inch thick (26 ga) galvanized sheet steel. Fill reglet or cover face opening to prevent intrusion of concrete or debris.
- B. Waterstops: Provide centerbulb type, serrated waterstops at construction joints and other joints as indicated. Size to suit joints.

- C. Polyvinyl Chloride Waterstops: Corps of Engineers CRD-C 572.
- D. Vapor Retarder: Provide vapor retarder that is resistant to deterioration when tested in accordance to ASTM E154. Polyethylene sheet not less than 8 mils thick.
- E. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd. complying with MSHTa M182, class 2.
- F. Moisture retaining cover complying with ATM C171, polyethylene coated burlap.
- G. Liquid Membrane forming curing compound complying with ASTM C309 Type 1, class A. Moisture loss not more than 0.55 kg/sq meter when applied at 200 sq. ft. / gal.
- H. Water based acrylic membrane curing compound: ASTM C309, type 1, class B, material that has a maximum volatile organic compound (Va C) rating of 350 g/L.
- I. Bonding Agent: Polyvinyl acetate or acrylic base.
- J. Epoxy Adhesive: ASTM C881, two component material suitable for use on dry or damp surfaces. Provide material type grade and class to suit project requirements.
- K. Grout: An expansive grout shall be used in all areas where a grout or leveling course is required by construction. The grout shall be composed of selected silica sands, modified cements, pozzolanic, plasticizing and water reducing admixtures. The grout will be entirely non metallic and shall be suitable for both interior and exterior applications. The grout will be a one step product delivered to the job site in bags containing a premixed formulation requiring only the addition of water prior to use. Grout will be stored, handled, mixed, and placed as recommended by the manufacturer. The physical properties of the grout will be:
 1. Initial Set (ASTM C191) 45 minutes.
 2. Final Set (ASTM C191) 180 minutes.
 3. Compressive Strength (ASTM C109)
 - a. 24 hours: 5000 psi
 - b. 3 days: 6000 psi
 - c. 7 days: 8000 psi
 - d. 28 days: 10,000 psi
 4. Volume Change (ASTM C827)
 - a. 24 hours: + 0.032%
 - b. 3 days: + 0.033%
 - c. 7 days: + 0.035%
 - d. 28 days: + 0.035%
 5. Tensile Strength
 - a. 24 hours: 400 psi
 - b. 3 days: 460 psi
 - c. 7 days: 550 psi
 - d. 28 days: 600 psi

2.05 PROPORTIONING AND DESIGNING MIXES

- A. Design mixes to provide normal weight concrete with the following properties.

CLASS	28 DAY STRENGTH	W/C RATIO	AIR ENTRAINMENT	FLY ASH
A - structure	4000 psi	0.43	6%	15%
B - exterior	3500 psi	0.50	optional	optional
C	3000 psi	0.56	optional	optional
D	1500 psi	0.60	optional	optional

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- B. Unless noted otherwise elsewhere use class C concrete as noted above in all foundations including footing, grade beams, and cast in place piles, and use Class C concrete as noted above in all concrete slabs on grade.
- C. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:
 - 1. Ramps, slabs, and sloping surfaces: Not more than 4 inches.
 - 2. Reinforced foundation systems: Not less than 1 inch and not more than 3 inches.
 - 3. Concrete containing high range water reducing admixture (superplasticizer) not more than 8 inches after adding admixture to site verified 2-3 inch slump concrete.
 - 4. Other concrete not more than 4 inches.

2.06 ADMIXTURES

- A. Use water reducing admixture or high range water reducing admixture (superplasticizer) in concrete as required for placement and workability.
- B. Use accelerating admixture in concrete slabs placed at ambient temperatures below 50 degrees.
- C. Use high range water reducing admixture in all Class A concrete. The admixture may be omitted in sidewalks.
- D. Use air entraining admixture in exterior exposed concrete unless otherwise noted. Add air entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content with a tolerance of +/- 1.5% within the following limits:
 - 1. Concrete structures and slabs exposed to freezing and thawing, deicer chemicals, or hydraulic pressure. 6% for severe exposure and 3/4" to 1 inch maximum aggregate, and 7% for severe exposure and 1/2" maximum aggregate.
- E. Use admixtures for water reduction and set accelerating or retarding in strict compliance with manufacturer's directions.

2.07 CONCRETE MIXING

- A. Job-site mixing will be done in appropriate drum type batch machine mixer. For mixers of 1 cu. yd. or smaller capacity continue mixing at least 1.5 minutes but not more than 5 minutes after ingredients are in mixer before any part of batch is released. For mixers of capacity larger than 1 cu. yd. increase minimum 1.5 minutes by 15 seconds for each additional cu. yd. Provide batch ticket for each batch discharged and used in the work indicating project identification name, date, mix type, mix time, quantity, and amount of water introduced.
- B. Ready Mixed Concrete will comply with the requirements of ASTM C94 and as specified. When air temperature is between 85 and 90 degrees reduce the mixing and delivery time from 1.5 hours to 75 minutes and when air temperature is 90 degrees or more reduce the mixing and delivery time to 1 hour. Provide a batch ticket for each batch discharged and used in the work indicating project name, date, mix type, mix time, quantity, and amount of water introduced.

PART 3 - EXECUTION

3.01 GENERAL

- A. Coordinate installation of joint materials, vapor barriers, and other related materials with placement of forms and reinforcing.

3.02 FORMS

- A. Fabricate forms for easy removal without hammering or prying against concrete surfaces.
- B. Provide openings in concrete formwork to accommodate work of other trades.
- C. Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris before placing concrete.

3.03 PLACING REINFORCEMENT

- A. Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars" for details and methods of reinforcement placement and supports as specified.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials that reduce bond with concrete.
- C. Install reinforcing as shown in the plans and noted elsewhere.
- D. Lap welded wire fabric at least one mesh space and lace splices with wire.

3.04 JOINTS

- A. Construction Joints: Locate and install construction joints so they do not impair the strength or appearance of the structure as acceptable to the architect.
- B. Provide keyways at least 1.5 inches deep into construction joints in walls and slabs and between walls and footings. Bulkheads designed and accepted for this purpose may be used for slabs.
- C. Place construction joints perpendicular to the main reinforcement. Continue reinforcement across construction joints except as indicated otherwise. Do not continue reinforcement through sides of
- D. Use bonding agent on existing concrete surfaces that will be joined with fresh concrete.
- E. Provide waterstops in construction joints as indicated. Install waterstops to form continuous diaphragm in each joint. All joints shall be heat welded with hot iron. Support and protect exposed waterstops during progress of work. Field fabricate joints in waterstops according to manufacturer's printed instructions.
- F. Construct contraction (control) joints in slab on grade to form panel patterns as shown. For saw cut joints use 1/8 inch wide x 1/4 of the slab depth. For inserts use inserts 1/4 inch wide x 1/4 of the slab depth. For keylock type joints use continuous galvanized keyed strips the same depth as the slab and leave in place.
- G. If joint pattern is not shown then place construction joints not more than 10' on center in either direction. Place 1/2 inch expansion joints not more than 45 feet apart in sidewalks.

3.05 CONCRETE PLACEMENT

- A. Inspect formwork, reinforcing steel, embedded items, and other details before placement. Notify other trades to permit installation of their work.
- B. Comply with ACI 304 "Guide for Measuring, Mixing, Transporting, and Placing Concrete" and as specified.

- C. Deposit concrete continuously in layers of such thickness that no new concrete will be placed on concrete that has hardened sufficiently to cause seams or planes of weakness. If a section cannot be placed continuously then provide construction joints as specified. Deposit concrete to avoid segregation at its final location.
- D. Deposit concrete in forms in horizontal layers no deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers place each layer while preceding layer is still plastic to avoid cold joints.
 - 1. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping. Use equipment and procedures for consolidation of concrete complying with AIC 309.
 - 2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniform spaced locations no farther than the visible effectiveness of the machine. 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 set. 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 to segregate.
- E. Deposit and consolidate concrete slabs in a continuous operation within limits of the construction joints until completing placement of a panel or section.
 - 1. Consolidate concrete during placement operations so that concrete is thoroughly worked around reinforcement, other embedded items, and into corners.
 - 2. Bring slab surface to correct level with a straightedge and strike off. Use bull floats or darbies to smooth surface free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.
 - 3. Maintain reinforcing in proper position on chairs during concrete placement.
- F. For cold weather placement comply with provisions of ACI 306. Protect concrete from freezing.
- G. When air temperature has fallen to or expected to fall below 40 degrees uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees and not more than 80.
- H. When hot weather conditions exist that would impair quality and strength of concrete place concrete complying with ACI 305 and as specified.

3.06 HORIZONTAL SLAB FINISHES

- A. Apply a troweled finish to surfaces exposed to view and surfaces to be covered with resilient flooring, carpet, tile, paint, or similar finishing systems. After floating begin first trowel finish operation using a power driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over the surface. Consolidate concrete surface by final hand troweling operation free of trowel marks. Leave finish in uniform texture and appearance. Tolerance of F(F)20 for floor flatness and f(L)17 for levelness per ASTM 1155.
- B. Apply a broom finish to exterior concrete and as indicated. Immediately after float finishing slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route.
- C. Exterior slabs may be imprinted with installer's stamp if first coordinated with architect.

3.07 CONCRETE CURING AND PROTECTION

- A. Protect freshly placed concrete from premature drying and from excessive cold or heat.
- B. Any markings, graffiti, footprints, animal tracks, and similar imprints in the surface will be removed and replaced by the builder at the builder's expense.

3.08 FORM REMOVAL

- A. Formwork not supporting weight of concrete may be removed after cumulatively curing at not less than 50 degrees for 24 hours after placement provided the concrete is sufficiently hard to not be damaged by form removal and provided curing and protection is maintained.
- B. Formwork supporting weight of concrete may not be removed in less than 14 days or until concrete has attained at least 75% of its design minimum 28 day strength.
- C. Form facing materials such as walls may be removed after 4 days cumulatively curing at not less than 50 degrees for 24 hours after placement provided the concrete is sufficiently hard to not be damaged by form removal and provided curing and protection is maintained.

END OF SECTION

SECTION 04220 – CONCRETE MASONRY UNITS

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Provide all labor, material and equipment required for the installation of concrete masonry installations as indicated on the Drawings and specified herein.

1.02 CODES AND STANDARDS

- A. Perform work with materials and methods complying with ASTM and ACI specifications.

1.03 SUBMITTALS

- A. Submit copies of the manufacturer's product information for each material and accessory.
- B. Submit physical or printed color charts for the architect and owner to select from. Provide one or more physical samples if requested until a selection is identified by the architect.
- C. If requested by the owner or architect, provide a sample installation on site of the same materials proposed for use including masonry units, mortar, coatings, and cleaning before selections are made.

PART 2 – MATERIALS

2.01 CONCRETE MASONRY UNITS

- A. Concrete masonry units will comply with the latest edition of ASTM C90.
- B. Provide required shapes such as double sided, finished ends, double finished ends (finished 3 sides), lintels, and as needed for the project so that all exposed surfaces share the same matched finish.
- C. Provide materials manufactured by an established fabricator providing a range of aggregate and color selections.
- D. Provide masonry units from a single manufacturing lot to ensure color match. If masonry units from different lots are used the lots will be using the same manufacturing materials and methods then the two lots will be randomly mixed during construction.
- E. Concrete masonry units will measure nominal 8 inch high x 16" wide x 8" deep.
- F. Concrete masonry units exposed to the EXTERIOR will have the manufacturer's standard finish with no special treatment or coloring.
- G. Concrete masonry units exposed to the INTERIOR will have a factory ground smooth *BURNISHED FINISH* unfinished except for clear sealant described in this Section 04220. Provide masonry units with burnished surfaces on one, two, or three sides as needed so that all exposed surfaces have identical finishes. Unit color will be selected by the architect from the manufacturer's standard color selection.

2.02 MORTAR

- A. Mortar mix will be pre-mixed colored mortar equal to Spec-Mix.

2.03 REINFORCING

- A. Reinforcing will be equal to Durowal - Hohmann & Barnard as recommended by the manufacturer and as indicated on the plans.

2.04 SEALANTS

- A. Burnished units will have a factory applied highlighter on each ground surface to facilitate cleaning on the job site. Sealer will be equal to Prospec Burnished Block Sealer.
- B. Burnished units will have a site applied sealer applied after installation and cleaning. Sealer will be equal to Prospec Burnished Block Sealer recommended by the manufacturer for the temperature of the air and materials.

PART 3 – EXECUTION

3.01 GENERAL ERECTION REQUIREMENTS

- A. Cover and keep dry all materials stored on the job site. At the end of each work day cover the top of the wall in such a way that the rain and snow will not get into the cores or wall cavity.
- B. Install units level, aligned, plumb, and true. Install only quality units. Reject all defective units.
- C. In order to assure optimum blending of product when using units from different manufacturing lots stage the cubes so that two or more cubes can be worked off of at the same time. Mason is to randomly mix between the two lots to avoid a spotty visual effect.
- D. Neatly cut units utilizing a power masonry saw to obtain crisp sharp edges that fit neatly with adjoining work.
- E. Provide adequate lighting for work surface during the work.
- F. Lay units with full mortar coverage on head and bed joints, taking care to not obstruct or fill cores to be grouted. Keep cavity areas free of debris.
- G. Leave exposed joints with a CONCAVE profile. Tool joints with thumb print hard. Remove excess mortar from the face of the masonry units before the mortar sets.

3.02 JOINT REINFORCEMENT

- A. Install horizontal joint reinforcement as shown on the plans. Lap splices at least 6 inches.

3.03 WEEP HOLES

- A. Install weep holes 32" o.c. at floor level.
- B. If rope is used at weep holes use only all cotton rope. Do not use synthetic materials in rope.

3.04 CLEANING

- A. Clean completed work daily using brushes, clean rags, or similar. Do not allow excess mortar to dry and harden on the face of the masonry.
- B. Final cleaning methods will be first tested on a test material identical to the installed materials to confirm that there are no adverse affects to the materials and methods that will be used.
- C. Do not use job site mixed muriatic acid. If needed clean with a specialty product equal to Eaco Chem NMD 80 in strict accordance with the manufacturer's recommendations. Thoroughly pre-wet the area to be cleaned. Allow the product to work and thoroughly rinse with clean potable water when finished.
- D. Leave surfaces clean with no stains or visible residue.

END OF SECTION

Section 05730 – ORNAMENTAL HANDRAILS AND RAILINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Fabrications and installations of interior and exterior welded steel handrails and railings.

1.2 STANDARDS

- A. American National Standards Institute (ANSI):
- B. American Welding Society (AWS):
- C. American Society for Testing and Materials (ASTM)
- D. International Building Code (IBC)
- E. Accessible and Usable Buildings and Facilities (ANSI) A117.1

1.3 PERFORMANCE REQUIREMENTS

- A. General: Railings shall be engineered to withstand structural loads indicated and reasonably anticipated.
- B. Structural Performance: Provide railings capable of withstanding test loads in accordance with ICC-ES AC273.
 - 1. Structural Performance of Top Rails and Supports:
 - a. Concentrated Load Test: In Accordance with Section 4.23 of AC273. Railing is to be able to withstand without permanent deflection a temporary load of 500 lb applied at the midspan of the top rail.

1.4 SUBMITTALS

- A. Submit either printed data or physical samples to the architect for review and approval before ordering materials. Submit additional physical samples if requested by architect for review. Submit the following items.
 - 1. Posts and rails.
 - 2. Brackets
 - 3. Spindles
 - 4. Coatings
 - 5. Other components as requested.

1.5 QUALITY ASSURANCE

- A. Fabricator will be experienced with welding railings and ornamental steel, and experienced reading and following printed specifications and details
- B. Regulatory Requirements: Completed installations shall meet ICC standards, applicable requirements of ADA Accessibility Guidelines along with any local amendments and/or modifications. Completed installations shall also conform to state, regional, and local codes and regulations.
- C. If modifications to the designs or specifications are proposed, submit the proposed modifications to the Architect for review.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store components in a dry, sheltered location away from uncured concrete.

1.7 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with railings by field measurements before fabrication. Provide allowance for trimming and fitting as site.

1.8 COORDINATION AND SCHEDULING

- A. Coordinate installation of anchorages and sleeves for railings and posts. Deliver such items to the project site in time for installation
- B. Schedule installation so wall attachments are made only to completed walls. Do not support railings temporarily by means that do not satisfy structural performance requirements.

1.9 WARRANTY

- A. General contractor will warranty the handrail and railing fabrications to be free from damage resulting from normal use for a period of one year after the date of substantial completion of the construction project.

PART 2 PRODUCTS

2.1 STEEL

- A. Steel components will be standard weldable pipe and tubing ready to weld and ready to accept shop applied or field applied finishes

2.2 FINISH

- A. See the Paint section of the specifications for coatings.

2.3 ORNAMENTAL WELDED STEEL RAILING SYSTEM

- A. Commercial Ornamental Welded Steel Railings:

- 1. Components:
 - a. Rails: Standard weldable pipe and tubing ready to weld and ready to accept finishes.
 - b. Pickets: Solid steel square tubing.
 - c. Posts: Standard weldable pipe and tubing ready to weld and ready to accept finishes.
 - d. Brackets for exterior application: Heavy weldable steel with minimum profile that doesn't create an obstruction for the grasp requirements of ANSI accessibility. Consult architect if needed for the ANSI standards if needed.
 - e. Brackets for interior application: Commercial grade for bolting to the wall, and for bolting or welding to the rail.
 - f. Fasteners: All nuts, bolts, sheet metal screws, wood screws and washers will be paintable steel and sized to support the required loads.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine areas and conditions under which the work is to be installed and notify the Contractor of any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.
 - 1. Examine gypsum board assemblies, reinforcing to receive anchors. Verify that locations of concealed reinforcements have been clearly marked for installer. Locate reinforcements and mark locations if not already done.
 - 2. Verify areas to receive railings are ready for railing installations.
 - 3. Coordinate post setting diagrams, plans, templates, and drawings and verify the proper installation of any necessary anchorages as detailed in the Drawings.
 - 4. Coordinate with appropriate entity to correct unsatisfactory conditions, if any exist.
 - 5. Beginning of the work shall indicate acceptance of the areas and conditions as satisfactory by the Installer.

3.2 PREPARATION

- A. Stake Layout showing locations of posts as well as any gates if any.
- B. Note location of any affected underground utility lines, irrigation lines, or other subsurface structures, if applicable.
- C. Railings that require wall mounting, wood blocking shall be provided.

3.3 FABRICATION

- A. Fabrication can be in a shop, on site, or a combination as needed for a quality finished product and installation.
- B. Installations will be plumb and straight.
- C. Rails will be cut to allow a continuous fit against the shape of the posts before welding.
- D. Butt joints if any will be reinforced with an interior steel pipe and the joints thoroughly welded to avoid weak connections then ground smooth so that the joint is visibly undetectable after finishes are applied.
- E. All welds will be ground smooth before finishes are applied so that no weld marks are visible after finishes are applied.
- F. Protect adjacent surfaces from heat and weld damage, impact and related damage, and from paint drips and splatters.
- G. If embedment of the fabrications into concrete or other materials is required then coordinate the sleeve and embedment locations with the concrete and related trades. Field measure embedment location before fabrication.

3.4 CLEANING

- A. Repair scratches and other damage. Repaint damaged area.
- B. Clean up debris and unused material, and remove from site.

3.5 PROTECTION

A. Protect installations and finishes of steel fabrications from damage during construction.

END OF SECTION

SECTION 06100 - ROUGH CARPENTRY

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Provide all labor, material and equipment required to complete all items of carpentry work shown on Drawings and as specified herein, and do all work ordinarily done by carpenters, whether or not specifically mentioned. Refer to other Sections of the specifications for carpentry work to be done in addition to work in this section.
- B. All work shall be done by experienced craftsmen under the supervision of capable foremen. The carpentry work shall be done in cooperation with the work of all other trades and subsystems to produce an efficient building operation.

1.02 MISCELLANEOUS CARPENTRY WORK

- A. This work shall include construction of all concrete forms and any other temporary construction involving wood.
- B. Lumber and plywood shall be stacked in a manner to insure ventilation, and in a place to insure protection from weather damage. Store millwork under cover in a well-ventilated building and do not expose material to extreme changes of temperature or humidity. Do not store or install millwork in any part of building until concrete and gypsum board are completely dry.
- C. Do all work necessary to expedite and protect the Work. Brace metal door frames and bucks, metal sash frames, etc., to hold them securely in place until permanently built into adjacent construction.
- D. Store and be responsible for all finish hardware. Furnish keys as specified under Section 08710 - Finish Hardware. Apply hardware in strict accordance with manufacturer's instructions, fit accurately, apply securely and adjust carefully. Completely protect all hardware from damage by other trades until acceptance of the Work by the Owner. Mask or adequately cover hardware during operations such as painting, in order that no damage may occur to finish or hardware items. Replace any hardware showing damaged finish at no extra cost to Owner. Immediately prior to acceptance of the Work, examine all door, window and cabinet hardware; adjust doors so that they may have bottom edges painted. Rehang.
- E. Provide temporary wood doors, closures for security, cover with polyethylene film for cold or inclement weather.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Standard Lumber:
 - 1. Structural Grade No. 2 or better Spruce Pine Fir (SPF) permitting up to 25% Standard Grade, S4S, Kiln dried to average 15%, maximum 19% moisture contents. Crooked or twisted pieces shall not be used, Standard Grade pieces shall be well distributed.
 - 2. Used Lumber is permissible if it has no defects that would reduce the structural integrity of the member.
 - 3. Use "Non-Com" lumber where required by Code.
- B. Manufactured Lumber: Laminated lumber, joists manufactured with laminated wood top and bottom flanges, and oriented strand board webs, waterproof glue, with a lifetime warranty, manufactured by Louisiana Pacific, Truss Joist, or approved equal. Handle and field work as recommended by manufacturer.

C. Plywood:

1. All plywood panels shall bear a stamp indicating the manufacturer and the American Plywood Association grading. Comply with APA recommendations.
2. Use INT-APA-BD grade plywood for temporary structures and rough construction where plywood will be concealed.
3. Refer to Section 03300: Cast in Place Concrete, for plywood used for formwork.
4. Plywood Sheathing: 5/8" exterior glue sheathing, C-D Grade.
5. Smooth surface to receive paint finish; A-Grade at exposed face, D-Grade at concealed face.
6. Concealed plywood backing panels: standard grade, thickness as required.

D. Provide and install all rough hardware and metal fastenings as shown, specified or required for proper installation of carpentry. Nails, spikes, screws, bolts and similar items shall be of sizes and types to rigidly secure members in place.

NOTE: All exterior fasteners shall be non-corrosive and non-ferrous.

1. Nails: All nailing generally to be as follows:

a. Rough Carpentry Wood:

1" boards	8d cement coated
2" boards	16d to 20d common
3" boards	40d to 60d common
Dimension Framing	10d to 60d common
Toe Nailing Studs and Joists	10d common
Spiking Plates and Sill 1	6d common
Toe Nailing Rafters and Plates	10d common

b. Finish Wood Carpentry:

Moldings	Molding brads 7/8" to 1/4"
Trim 1/4" to 1/2" thick	4d casing
Trim 1/2" to 3/4" thick	6d casing
Trim 3/4" to 1" thick	8d casing
Trim 1" to 1-1/4" thick	10d casing

2. Screws: All screws shall be oval head where exposed. Use brass in natural finish wood and cadmium plated when wood is painted. All screws shall run into pre-drilled pilot holes.
3. Bolts: Fastening of members by bolts generally shall be as follows:
 - Wood to wood unexposed - hex machine bolts with cut washers.
 - Wood to wood exposed one side - fillister or oval head machine screws.
 - Wood to wood exposed both sides - fillister or oval head hex bolts.
 - Wood to metal - round head machine screws as required by the detail.
 - Toggle bolts, cinch anchors, expansion sleeves, etc. - used at Contractor's discretion. Use of Rawl Plugs and powder activated fastening devices is prohibited.

F. Preservatives: Treat wood, including lumber and plywood, as specified herein to be treated, to comply with the applicable requirement of the American Wood Preservers Institute (AWPI). Pressure treat the following items with water-borne preservatives for above ground use, complying with AWPI LP-2:

1. Wood cants, nailers, 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 concrete or below grade.
3. Kiln-dry wood to a maximum moisture content of 15% after treatment with water-borne preservatives.
4. Treat all exposed faces of cedar including cut edges with preservative; Woodlife, Penta or equivalent substitute.

PART 3 - EXECUTION

3.01 GENERAL

- A. Use only sound, thoroughly seasoned, well-manufactured materials of the longest practical lengths and sizes to minimize jointing. Use materials free from warp which cannot be easily corrected by anchoring and attachment. Sort out and discard warped material and material with other defects which would impair the quality of the Work.
- B. Securely attach carpentry work to substrates by anchoring and fastening as shown and as required by recognized standards. Provide washers under bolt heads and nuts in contact with wood. Nail plywood to comply with the recommendations of the American Plywood Association. Countersink nail heads on exposed carpentry work and fill holes.
- C. Set carpentry work accurately to required levels and lines with members plumb and true and accurately cut and fitted. Shim with metal or slate for full-bearing on concrete substances.

3.02 COORDINATION

- A. Obtain measurements and verify dimensions shown and shop drawing details before proceeding with carpentry work, wherever possible. Correlate location of furring, nailers, blocking and similar supports so that attached work will comply with design requirements. Fit carpentry work to other work. Scribe and cope as required for accurate fit.

3.03 ATTACHMENT AND ANCHORAGE

- A. Use common wire nails, except as otherwise shown or specified herein. Use finishing nails for finish work. Do not wax or lubricate fasteners that depend on friction for holding power.
- B. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting of wood; pre-drill as required. Do not drive threaded friction type fasteners; turn into place. Tighten bolts and lag screws at installation and retighten as required for tight connections prior to closing in or at completion of Work.

3.04 WOOD NAILERS, BLOCKING AND SLEEPERS

- A. Provide wherever shown and where required for attachment of other work. Form to shapes as shown and cut as required for true line and level of work to be attached.
- B. Coordinate location with other work involved; refer to Shop Drawings of such work.
- C. Attach to substrate securely with anchor bolts and other attachments devices as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise shown.

3.05 WORKMANSHIP AND INSTALLATION

- A. Protect all carpentry, metal work, millwork, and other materials from damage of any character during the progress of the work. Store millwork in accordance with manufacturer's recommendations.
- B. Furnish and install all rough hardware required, such as nails, screws, anchor bolts and devices (except those occurring in structural steel), shot anchors, similar devices. All rough hardware shall be of the proper type and size for the use intended. Provide adequate hardware to achieve substantial and positive anchorage. Nailing into wood plugs is not acceptable for any work.
- C. All finish material shall be air and kiln dried, highly sanded and free from defects. All finish shall be face primed, filled or stained as part of the work under Section 09900 - Painting, before placing. Fit and place all finish accurately and in a workmanlike manner. Gouges, dents, hammer marks, splits or other defects will not be permitted in the finished work. Doors shall be fitted with a uniform clearance of 3/16" at heads and jambs and 5/8" clearance at floor unless additional clearance at floor is called for on Drawings.

D. Hang doors with all screws inserted and hinges properly adjusted so the doors swing free and do not rattle when closed.

END OF SECTION

SECTION 07111 – CEMENTITIOUS PARGING – top of parapet walls

PART 1 – GENERAL

1.01. DESCRIPTION

- A. Provide portland cement based coating for waterproofing, sealing, and protecting existing cement based surfaces.

1.02 SUBMITTALS

- A. Submit manufacturer's product data to the architect for review and comment.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Portland cement based waterproofing, sealant, and protective concrete and masonry coating equal to Quikrete heavy duty masonry coating 1312-gray.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.
- B. Coordinate installation with adjacent work to ensure proper sequence of construction.
- C. Protect adjacent areas and landscaping from contact due to mixing, handling, and application of materials.

3.02 SURFACE PREPARATION

- A. Comply with manufacturer's recommendations.
- B. Prior to application clean the surface of all loose material, dirt, dust, grease, oil, paint, or efflorescence. Smooth areas should be roughed or etched.

3.03 MIXING

- A. Materials should be mechanically mixed as recommended by the manufacturer.
- B. Prepare only enough mix at a time as can be applied before the mix consistency hardens and reduces the mix quality. Do not re-temper with additional water.

3.04 APPLICATION

- A. Comply with manufacturer's printed instructions.
- B. Unless conflicting with manufacturer's instructions:
 1. Dampen surface with a fine water mist before application. Saturate the surface evenly.
 2. Apply with a stiff masonry brush using a circular scrubbing motion to insure deep penetration of the ingredients. Each coat will be approximately 1/32 (0.8mm) inch thick
 3. Lightly mist several times for 24 hours after application to eliminate rapid moisture loss.
 4. APPLY A SECOND COAT of cementitious parging 12 to 48 hours after the application of the first coat.
 5. Do not use over previously painted, sealed, or waxed surfaces.
 6. Do not apply when temperatures are expected to be below 40 degrees F within 24 hours.

3.5 CLEANING

- A. Remove excess material before material cures. If material has cured remove using mechanical methods that will not damage the substrate.

END OF SECTION

SECTION 07413 – METAL ROOF PANELS

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Exposed fastener metal roof panels with related metal trim and accessories.

1.02 QUALITY ASSURANCE

- A. Provide metal panel assembly and accessories from a single manufacturer providing fixed base roll forming.
- B. Installer will be experienced installing the specified roofing systems and will have skilled personnel on site at all times overseeing the work described in this Section.

1.03 SUBMITTALS

- A. Submit the following to the architect for review and approval prior to ordering materials.
 - 1. Manufacturer's product data clearly identifying the products proposed for use on the project.
 - 2. Manufacturer's printed color chart.
 - 3. Physical samples of materials and colors if requested by the architect.
 - 4. Other data and samples if requested by the architect.
- B. Submit the manufacturer's warranty data to the architect with the close-out documents near the completion of the project construction.

1.04 WARRANTY

- A. Installer will agree to repair any labor related defects for a period of one year from the date of substantial completion of the project.
- B. Manufacturer will agree to repair or replace metal panel assemblies that fail within one year from the date of substantial completion of the project.
- C. Manufacturer will agree to repair or replace metal panels that evidence deterioration of factory applied finish within 25 years from the date of substantial completion of the project. The warranty will include:
 - 1. Modified Silicone-Polyester Two-Coat System.
 - a. Color fading in excess of 7 Hunter units per ASTM D 2244 for vertical applications.
 - b. Color fading in excess of 10 Hunter units per ASTM D 2244 for non-vertical applications.
 - c. Chalking in excess of No. 7 rating per ASTM D 4214 for vertical applications.
 - d. Chalking in excess of No. 5 rating per ASTM D 4214 for non-vertical applications.
 - e. Failure of adhesion, peeling, checking, or cracking.

PART 2 – PRODUCTS

2.01 MANUFACTURER

- A. Products will be equal to Metal Sales, MBCI, or Mueller.

2.02 PERFORMANCE REQUIREMENTS

- A. Provide metal roof panel system meeting performance requirements as determined by application of specified tests by a qualified testing facility.

- B. Allow for thermal movements from variations in both ambient and internal temperatures. Accommodate movement of support structure caused by thermal expansion and contraction. Allow for deflection and design for thermal stresses caused by temperature differences from one side of the panel to the other.

2.03 METAL ROOF PANELS

- A. PBR Panels will be large tapered rib profile roof panels with exposed fasteners.
 1. Nominal panel width 36 inches.
 2. Major rib spacing 12 inches.
 3. Major rib height 1 ¼ inches.
 4. 26 gauge metal.
 5. Surface smooth with intermediate ribs between major ribs.
 6. Exposed finish will be a modified silicone-polyester two-coat system. 0.20 – 0.25 mil primer with 0.7 – 0.8 mil color coat.
 7. Concealed finish will be 0.5 mil total dry film consisting of primer coat and wash coat of manufacturer's standard acrylic or polyester backer finish.
 8. Color to be selected by architect from manufacturer's base line color selections.
 9. Underlayment will be a rolled material meeting or exceeding the minimum requirements of the metal roofing manufacturer and of applicable building codes.

2.04 METAL ROOF PANEL ACCESSORIES

- A. Provide complete metal roof panel assembly incorporating ridge, eave, rake, valley, parapet trims, copings, fascias, gutters, downspouts, and miscellaneous flashings in manufacturer's standard profiles. Provide required fasteners, closure strips, support plates, and sealants as indicated in the roofing manufacturer's written instructions.
- B. Flashing and Trim: Match material, thickness, and finish of metal panel face sheet.
- C. Panel Fasteners: Self-tapping screws and other acceptable fasteners recommended by roof panel manufacturer. Unless recommended otherwise fasteners will be long life fasteners with EPDM or neoprene gaskets. Heads will be factory finished so that the fastener heads match the color of the metal panels.
- D. Joint sealers will be as recommended by the roofing manufacturer.

2.05 FABRICATION

- A. Provide factory fabricated and finished metal roofing panel and accessories as needed for a complete weather tight installation.
- B. Panel lengths will be for full lengths of detailed runs. Do not lap top and bottom ends with adjacent panels without prior approval from the architect.
- C. Fabricate flashing and trim to comply with the roofing manufacturer's written instructions. Form from materials with factory finishes matching the metal panel finish.

PART 3 - EXECUTION

3.01 COORDINATION

- A. Coordinate sizes, profiles, locations of roof curbs and other roof mounted equipment and roof penetrations based on sizes of actual selected equipment.
- B. Coordinate work and schedule with other trades.

3.02 DELIVERY, STORAGE, AND HANDLING

- A. Protect products during shipping, handling, and storage to prevent staining, denting, deterioration of components, and other damage.
- B. Deliver, unload, store, handle, and erect materials without misshaping the panels or exposing panels to surface damage from weather or construction operations.
- C. Store in accordance with manufacturer's written instructions. Provide wood collars for stacking and handling in the field.

3.03 EXAMINATION

- A. Examine metal panel system substrate and supports with installer present. Inspect for erection tolerances and other conditions that would adversely affect installation of metal panels.
- B. Tolerances will be less than ¼ inch in 20 feet in any direction, and 3/8 inch over any single roof plane.
- C. Correct out of tolerance work and other deficient conditions prior to proceeding with metal roof panel system installation.

3.04 METAL PANEL INSTALLATION

- A. Install underlayment as required.
- B. Install weather tight metal panel system in accordance with the manufacturer's written instructions and project drawings. Install metal roof panels in orientation, sizes, and locations indicated, free of waves, warps, buckles, fastening stresses, and distortions. Anchor panels and other components securely in place. Provide for thermal and structural movement.
- C. Install panel sealants and tape sealants at panel sidelaps and endlaps.
- D. Attach panels to supports using screws, fasteners, and sealants recommended by roofing manufacturer.
- E. Install weatherproof jacks for pipe and conduit penetrating metal panels of types recommended by roofing manufacturer.
- F. Where elements the metal panel system will come into contact with dissimilar materials treat the faces and edges in contact with dissimilar materials as recommended by the manufacturers.

3.05 ACCESSORY INSTALLATION

- A. Install metal panel trim, flashings, and accessories using recommended fasteners and joint sealers with positive anchorage to buildings and with weather tight mounting.
- B. Set units true to line and level.

3.06 CLEANING AND PROTECTION

- A. Clean finished surfaces as recommended by the manufacturer.
- B. Protect installations from damage during the remaining work.
- C. Clean related all trash and debris from work area.

END OF SECTION

SECTION 07542 – MECHANICALLY FASTENED TPO THERMOPLASTIC MEMBRANE ROOFING

PART 1 – GENERAL

1.01 SUMMARY

- A. Furnish and install a weather and watertight mechanically fastened TPO single ply roof complete and in place.
- B. Major system components include:
 - 1. Air barrier, loose laid
 - 2. Insulation, loose laid
 - 3. Cover board, mechanically attached
 - 4. Single ply TPO membrane, mechanically attached
 - 5. Single ply TPO flashings, fully adhered.
- C. The latest manufacturer specifications and installation techniques are to be followed. When the contract documents and the manufacturer requirements are in conflict then the most stringent requirements of the two will be followed.

1.02 CODE COMPLIANCE

- A. The completed roof system will meet the following codes and ratings:
 - 1. International Building Code, *2015*
 - 2. International Energy Conservation Code, *2009*
 - 3. New Mexico Building Code, current edition
 - 4. UL Class A external fire rating.
- B. The completed roof system will meet design and wind load pressures calculated in accordance with the applicable building codes. Wind design will also be based on the following:
 - 1. *Risk Category IV – Emergency Operations Center*
 - 2. Nominal wind speed: *93 mph*
 - 3. Ultimate wind speed: *120 mph*
- C. Field, perimeter, and corner wind loads will be determined by the membrane manufacturer for this specific project taking into consideration wind speed, risk category, roof height, parapet, height, roof slope, and other project specific factors.

1.03 QUALIFICATIONS

- A. Membrane system manufacturer will have not less than five years of experience in the production of the specified system.
- B. Installer will be currently certified by the roofing system manufacturer in the layout and application of this roofing system, and authorized by the manufacturer to install the roofing system eligible for a manufacturer's warranty.

1.04 QUALITY ASSURANCE

- A. Comply with the latest edition of:
 - 1. NRCA Roofing and Waterproofing Manual by the National Roofing Contractors Association
 - 2. Annual Book of ASTM Standards
 - 3. manufacturer's recommendations.
- B. Installer will use an adequate number of skilled workers.
- C. Make required notifications and secure all required inspections by the manufacturer of the approved materials to facilitate issuance of the required warranties.

- D. Provide materials bearing Underwriters Laboratories UL marking on each container indicating that the materials have been produced under UL classification and follow-up service.
- E. The roofing contractor will not subcontract any portion of the roof system installation to any individual or firm that is not a full time employee of the roofing contractor, including installation of insulation, membrane, flashing, or walkways.

1.05 SUBMITTALS

- A. Submit to the architect for review and approval the following items before ordering materials.
 - 1. Product data including a complete list of materials to be furnished under this Section.
 - 2. Submit physical samples if requested.
 - 3. Letter from the membrane manufacturer stating that the roofing contractor is approved for installation of the specified roofing system.
 - 4. Manufacturer's literature identifying recommended methods of installation.
 - 5. A roof plan for this particular facility indicating insulation fastening patterns for field, perimeter, and corner areas. The plan will indicate how perimeter and corner areas will receive increased fastener frequency.
 - 6. A roof plan for this particular facility indicating tapered insulation layout.

1.06 Manufacturer Inspection

- A. After the roof installation is substantially complete the manufacturer's representative, independent from the installer, will inspect the installation, identify any defects in materials or installation.
- B. After the manufacturer's representative has inspected and confirmed that any deficiencies have been corrected the manufacturer will issue the weathertightness warranty.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to job site in their original unopened containers. Package labels will indicate material name, production date or product code. Secure and protect materials from damage.

1.08 SCHEDULING

- A. Work is to be performed on a daily basis with each section completed before progressing to the next day's work.
- B. Substantial Completion of roofing work will be when the weathertight installation is complete.
- C. All flashings will be installed concurrently with the roofing membrane as the job progresses. If any water is allowed to enter the newly completed roofing due to incomplete flashings, seams, or night seals the affected area will be removed and replaced at the contractor's expense.

1.09 WARRANTY

- A. Contractor Warranty will include all workmanship for a period of one year from the date of substantial completion of the project. The contractor will make good any defects in workmanship that may develop by repairing or replacing such defects at no cost to the owner.

- B. Manufacturer's warranty will be a *20 year no dollar limit (NDL)* labor and material, total systems warranty. The warranty will include but not be limited to:
 - 1. Roof Membrane
 - 2. Membrane adhesion and attachment
 - 3. Flashing
 - 4. Roof insulation
 - 5. Roof insulation attachment
 - 6. Fasteners, termination bars, and related accessories provided by the roofing manufacturer.
- C. The contractor will make all necessary notices for warranty purposes to the roofing manufacturer to secure timely inspections and issuance of the manufacturer's warranty.
- D. Roofing manufacturer's warranty will cover building code required design wind speed.
- E. Roofing manufacturer's warranty will cover defects in materials and workmanship, and will become effective at the completion of the construction project. The warranty will not be prorated.
- F. Submit the described warranties to the architect.

PART 2 - PRODUCTS

2.01 GENERAL

- A. All materials used on this project will be compatible with the existing conditions and with other components.

2.02 ACCEPTABLE MANUFACTURERS

- A. GAF
- B. Carlisle
- C. Johns Manville
- D. Firestone
- E. Mule-Hide

2.03 AIR BARRIER

- A. Air barrier will be 6-mil polyethylene sheet.

2.04 AIR BARRIER SEAM TAPE

- A. Seam tape will be a 4 inch wide heavy duty weather resistant rubber adhesive tape equal to Americover.

2.05 ROOF INSULATION PRODUCTS

- A. Polyisocyanurate Foam Roof Insulation
 - 1. Insulation will be a closed cell polyisocyanurate foam core with factory laminated facers conforming to ASTM specification C 1289-1, Type II, Class 1. Foam core will have a rated flame spread of 75 or less according to ASTM E 84. Insulation will have a minimum compressive strength of 20 psi (grade 2) according to ASTM C 1289-1. Insulation will be supplied in 4'x8' boards and fabricated to achieve the needed slopes.
- B. Gypsum Cover Board
 - 1. Non-structural moisture resistant gypsum panel conforming to ASTM C 1177 or ASTM C 1278. Gypsum board will be supplied in 4'x8' sheets. Gypsum board will be flat stock 1/4" thick.

C. High Density Polyisocyanurate Foam Cover Board

1. Cover board will be a high density closed cell polyisocyanurate foam core with factory laminated glass reinforced facers conforming to ASTM specification C 1289. Cover board will have a minimum compressive strength of 150 psi in accordance with ASTM D 1621. Cover board will be supplied in 4'x8' boards. Foam cover board will be flat stock ¼" thick.

2.06 INSULATION FASTENERS

A. Nailable Deck

1. Corrosion resistant self tapping self drilling #12 screw with #3 phillips head. ¼" hexhead fasteners are not approved. Fasteners will be carbon steel with fluorocarbon corrosion resistant coating. Fastener and plate will meet FM 4470 requirements.
2. Corrosion resistant factory made metal plate.
3. Steel deck fasteners will be the shortest length to penetrate the top flange of the deck by ¾ inch.
4. Wood deck fasteners will be of sufficient length to provide at least 1 inch embedment into the wood decking.
5. Fasteners must not penetrate the bottom rib of steel decks. Fasteners will not protrude to the bottom rib of steel decks.

2.07 ROOF SYSTEM

A. Roofing Membrane – Mechanically Fastened System

1. Mechanically fastened roof membrane to be white in color, nominal 60-mil, reinforced thermoplastic polyolefin (TPO) sheet membrane complying with ASTM D 6878.

B. Flashing Membrane

1. Flashings are to be of roof membrane.
2. Unreinforced membrane will not be used except where recommended by the membrane manufacturer.

C. Membrane Adhesive will be a solvent based contact adhesive as supplied by the membrane manufacturer. Adhesives will not be used in field seams.

D. Cleaner/Primer/Seam Sealant will be supplied by the membrane manufacturer.

E. Water Cutoff Sealant will be supplied by the membrane manufacturer.

F. System fasteners will be steel.

1. Corrosion resistant self tapping self drilling screw with low profile head.
2. Corrosion resistant factory made barbed plate.
3. Fastener and plate will be supplied by the membrane manufacturer.

G. Walkways will be supplied by membrane manufacturer.

H. Membrane coated sheet metal will be supplied by the membrane manufacturer.

I. System fastening bar will be 16 gauge, G-90 galvanized steel or factory finished, 1 inch wide bar as supplied by the membrane manufacturer.

2.08 OTHER MATERIALS

A. Wood nailers will be pressure treated wood and per the roofing system manufacturer's recommendations.

B. All other materials not specifically described but required for a complete and proper installation of the work in this section will be as selected by the contractor, approved by the manufacturer and subject to the approval of the owner.

PART 3 – EXECUTION

3.01 INSPECTION

- A. The contractor will be responsible for verifying the suitability of the substrate to accept the roofing system.
- B. The installer of the roofing system will examine the substrate and conditions under which the roofing work is to be performed and will notify the architect and owner of unsatisfactory conditions. Do not proceed with roofing work until unsatisfactory conditions have been corrected in a manner acceptable to the architect and the manufacturer.

3.02 DESCRIPTION

A. Preparation and Surface Conditions

- 1. Before roof application is started remove trash, debris, grease, oil, water, moisture, and contaminants that may affect bond of the bitumen to the substrate.
- 2. Prepare all surfaces according to the applicable specification sections.
- 3. Protect adjacent areas from damage with tarps or other durable materials.
- 4. Surfaces scheduled to receive roofing are to be free of any standing water, frost, snow, or debris.
- 5. Substrate is to be smooth, properly sloped, free from sharp projections, and free of obvious depressions.
- 6. All roof openings, curbs, pipes, sleeves, ducts, and vents through the roof will be solidly set. Verify that all cant strips, reglets, nailers, curbs, and penetrations have been laid out and securely installed with adequate vertical and horizontal clearances as required by the manufacturer to provide the specified warranty.
- 7. Do not start roof application until defects have been corrected.

B. Installation – General

- 1. Perform all related work specified elsewhere necessary for the installation of the specified membrane system.
- 2. Ensure that fasteners do not penetrate conduit or other miscellaneous items located on the underside of the roof deck.
- 3. Do not apply roofing materials when water in any form including dew and frost is present.
- 4. Do not apply roofing membrane during inclement weather or when ambient conditions will not allow proper application. Consult manufacturer's technical specifications on cold weather application.
- 5. Phased roofing system installation is not permitted.

3.03 WOOD NAILER INSTALLATION

- A. Nailers are to be installed per detail drawings and per manufacturer recommendations. Notify the architect if the two conflict.
- B. Discard units of materials with defects that might impair quality of work and units that are too small to be used in fabricating work with minimum joints or optimum joint arrangement.
- C. Set nailers to required levels and lines with members plumb and true.
- D. Top of perimeter nailers will be uniformly flush with the top of the insulation.
- E. Nailers will be installed with ¼ inch gap between ends of adjoining pieces.
- F. Nailers will be fastened in accordance with the following schedule:
 - 1. Fasteners in 6 inch or wider (nominal) lumber will be installed in two rows, staggered 1/3 of the nailer width. Listed spacings indicate distance between fasteners in adjacent rows.

2. Two fasteners will be installed within 3 inches of each nailer end.
3. Corner fastener spacing will extend a maximum of 8 inches from all outside building corners.
4. Where two or more nailers are installed each nailer will be fastened independently.
5. Over all deck types the bottom nailer will be fastened using the specified fasteners and 5/8 inch diameter washers. Countersink washers and fasteners level with the top of the wood using spade bit or similar method. Fasten subsequent nailers, where needed, using the specified crews without washers.
6. Nailer attachment schedule, unless noted otherwise in the drawings:

Attachment Substrate	Perimeter Fastener Spacing (maximum)	Corner Fastener Spacing (maximum)
Structural Concrete	12" o.c.	6" o.c.
CMU (fastener into solid material)	12" o.c.	6" o.c.
Steel Deck	12" o.c.	6" o.c.
Wood	12" o.c.	6" o.c.

3.04 AIR BARRIER INSTALLATION

- A. Over the indicated substrate, loose lay in place on layer of polyethylene sheet air barrier with 6 inch side and end laps onto adjacent sheets. Splice all joints with seam tape. Repair all punctures, holes, tears with polyurethane sheet air barrier and seam tape.
- B. Air barrier will be installed under the insulation over the entire roof surface.
- C. Air barrier will wrap over the edge of the insulation 12 inches at the roof perimeter.
- D. Seal air barrier at all penetrations using polyethylene sheet air barrier and seam tape.
- E. After installation verify that all air barriers are lying flat without folds, that all seams have been spliced, and all punctures, holes, and tears have been repaired.

3.05 TAPERED INSULATION CRITERIA

- A. Tapered insulation crickets and saddles will be designed in accordance with the NRCA Roof Manual, Membrane Roofing Systems guides.
- B. Install tapered insulation with slope direction as indicated on the approved shop drawings. Miter cut all panels at valleys for tight fit and alignment throughout the valley length.
- C. Install tapered saddles in valleys. Ends of saddles will provide for slope into the sump at the drainage device. End of saddle will be of sufficient width at sump such that the flat spots do not occur in valleys. Saddle slope will be twice the field slope unless otherwise noted on the drawings.
- D. When a tapered insulation system is installed along a perimeter edge of uniform mailer height, utilize tapered edge strip along nailers as tapered insulation thickness decreases for a smooth transition and for proper support for the membrane system.
- E. Utilize tapered insulation panels and tapered edge strips to construct sumps at roof drains, scuppers, and gutters where detailed. Size will be as shown in approved shop drawings. Delete thermal insulation within sumps as required for installation of tapered panels so as to provide continuous slope down to drainage device without creating a sharp or steep sloped transition. At no time will slope within drain sump exceed 1:12 unless otherwise noted on the drawings.
- F. Install tapered crickets on the upslope sides of all rectangular penetrations with a dimension greater than 18 inches perpendicular to the slope. Cricket slope will be twice the field's slope unless otherwise noted on the drawings. Cricket slope less than twice the field slope will create positive drainage.

- G. Utilize tapered edge strips at transitions in construction of more than ¼ inch to provide a smooth transition and proper support for the membrane system or subsequent insulation layer. Field cut and shape edge strip as required. Direct the slope of the edge strips to provide for proper drainage.
- H. Verify that tapered insulation is properly installed according to the approved shop drawings and that no irregularities exist that will result in ponding water in the finished roof system.

3.06 INSULATION AND TAPERED INSULATION INSTALLATION

- A. Install only as much insulation as can be covered with roofing membrane and completed before the end of the days work or before the onset of inclement weather.
- B. Neatly fit insulation to all penetrations, projections, and nailers. Insulation will be loosely fitted with gaps greater than ¼ inch being filled with acceptable insulation. Under no circumstances should the membrane be left unsupported over a space greater than ¼ inch.
- C. Where overall insulation thickness is 2 inches or greater install the required thickness in two layers with joints of the second layer staggered from joints in the first layer a minimum of 12 inches in each direction.
- D. Areas of damage or broken corners will be cut out and replaced with pieces of 12 inch x 12 inch minimum.

3.07 COVER BOARD INSTALLATION

- A. Cover board will be installed with all joints tightly butted and end joints staggered 12 inches minimum. Insulation will fit tightly around penetrations.
- B. Areas of damage or broken corners will be cut out and replaced with pieces of 12 inch x 12 inch minimum, secured in place.
- C. Fastener spacings will be as defined within this section but not less than two fasteners per each piece of insulation.
- D. Fasten the top layer of insulation boards with screw and plate type fasteners. Minimum spacing will be as required to achieve the specified wind uplift resistance.
- E. Any whole or partial insulation board that falls within the perimeter or corner areas will have the increased fastening applied over the entire board.

3.08 ROOF MEMBRANE INSTALLATION

- A. Install membrane materials in accordance with the manufacturer's current published application instructions for mechanically fastened single ply roofing.
- B. Membrane sheet will be oriented such that the fastener rows (seams) run perpendicular to the sheet deck rib direction in field and perimeter areas.
- C. Unfold and position roofing membrane without stretching over the approved substrate.
- D. Sheets are to be overlapped at least 4 ½ inches.
- E. Membrane will be unrolled, lining up the edge of the roll with adjacent sheets.
- F. Membrane will be installed in a neat and orderly fashion.
- G. Fastener spacings depend on the building location, parapet height, building height, deck type, and deck thickness. Maximum spacing for fasteners is 12 inches o.c. for required field perimeter and corner sheets. Fasteners must penetrate the top flanges of metal decking where metal decking is present.
- H. Seaming areas are to be clean and free of dust, dirt, and debris.

- I. All seams are to be welded using a robot hot air welder approved by the membrane manufacturer. All seams are to be welded daily. Hand welding of seams is not acceptable.
- J. All seams are to be fully welded a minimum of 1 inch from the edge of the lap joint.
- K. Seams are to be allowed to cool and then checked for fishmouths and other voids. All necessary repairs are to be made daily by hot air welding.
- L. The membrane is to be secured 12 inches o.c. at the roof perimeter, curbs, walls, all projections larger than 18 inches in any direction, and at changes in plane greater than 15 degrees.
- M. Membrane is to be secured at the roof perimeter by one of the following methods:
 - 1. A nosing or gravel stop detail fastened 12 inches o.c. on the vertical face of the nailer and 3 inches o.c. on the horizontal ace.
 - 2. Fastening 12 inches o.c. through the membrane with a membrane manufacturer approved plate and fastener to the roof deck.
 - 3. Fastening 12 inches o.c. through the membrane with a vertically mounted manufacturer's termination bar.

3.09 PERIMETER AND CORNER FASTENING

- A. Fastening row spacing will be decreased along all roof edges with the following exceptions:
 - 1. Roof edges along the bases of interior building walls or at the bases of roof elevation changes.
 - 2. Roof transitions, expansion joints, control joints, or fire walls where the difference between the finished adjacent roof elevations is less than 36 inches. If the elevation difference is greater than 36 inches the edge of the higher roof will be treated as a perimeter.
- B. Perimeter Zone Fastening: Where the perimeter roof edge runs perpendicular to the deck rib direction decreased fastener row spacing will be provided by using perimeter sheets fastened within the lap seams. Extend the perimeter sheets to the intersecting perimeter roof edges. Perimeter sheet width will be greater than 60% of the field sheet width.
- C. Perimeter Zone Fastening: Where the perimeter roof edge runs parallel to the deck rib direction the field sheets will be installed through the perimeter zone to the intersecting perimeter roof edge. Decreases fastener spacing will then be provided in the perimeter zones by installing an additional row of membrane plates and fasteners parallel to and midway between the field sheet seams.
- D. Corner Zone Fastening: Decrease fastener row spacing will be provided in the corner zones by installing an additional row of membrane plates and fasteners parallel and midway between the perimeter sheet seams.
- E. Perimeter and Corner Zone Flashing: The length of the added fastener rows within the perimeter and corner zones will equal the total width of the areas that receive perimeter sheets. The added rows of plates and fasteners will be installed over and through the membrane and fastened to the top flange of the deck at the specified fastening rate. Strip-in each fastener row using 8 inch wide strips of heat welded field membrane material with each extending a minimum of 4 inches beyond the fastener on each end.

3.10 FLASHINGS

- A. Flashings will be constructed and terminated as per the detail drawings. The specified water cutoff sealant will be applied behind the top edges of the flashings. The top edges of flashings will be fastened per the membrane manufacturer requirements at a minimum unless superseded by the detail drawings.

- B. All flashings are to be totally bonded. Unadhered flashings will not be approved.
- C. Flashings are to extend a minimum of 6 inches onto the roof membrane. The splice must be sealed at least 3 inches beyond the fastener.
- D. Pitch pans are to be avoided. Prior to approval from the architect is required for pitch pan use.
- E. At roofing replacement projects existing drain bowls and rings are to be cleaned. Broken or missing strainers, clamp rings, and bolts are to be replaced. All lead flashings in the drain bowl must be removed.

3.11 ROOF WALKWAYS

- A. Walkways will be installed in a neat orderly fashion and where indicated on roof plans or in specifications.
- B. Chalk line walkway locations on the roof membrane and position walkways in place using the chalk line as a guide.
- C. Install walkways with sufficient gaps as not to impede drainage. Do not cover field seams with walkways unless prior approval is obtained from the architect and manufacturer.
- D. Walkways will be installed per manufacturer recommendations.

3.12 TEMPORARY WATER CUTOFFS

- A. Temporary water cutoffs are to be constructed at the end of each working day to protect the insulation, roofing, building, and building interior from damage due to wind, snow, and rain.
- B. Temporary water cutoffs are to be constructed using hot asphalt unless otherwise specifically approved the architect.
- C. Temporary water cutoffs and asphalt contaminated membrane will be neatly trimmed and removed at the start of the next work day.

3.13 PROTECTION

- A. Protect building surfaces, rooftop mounted equipment, piping, conduit, etc. against damage from roofing work. Where traffic must continue over finished roof membranes protect the surfaces.

3.14 CLEANUP

- A. Remove new bituminous markings from finished surfaces.
- B. Remove excess materials, trash, debris, equipment, and parts from the work.
- C. Repair or replace defaced or disfigured finishes caused by the new work.

END OF SECTION

SECTION 07600 - FLASHING AND SHEET METAL

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Provide all labor, material and equipment required for the installation of flashing and sheet metal as indicated on the Drawings and specified herein.

PART 2 – MATERIALS

2.01 MATERIALS

- A. Galvanized Sheet Metal shall be manufactured in accordance with ASTM A525-65T, 1.25 oz. commercial weight zinc coated, regular spangle, as manufactured by Jones and Laughlin, US Steel, Republic Steel, Inland Steel, and sheet metal flashing shall be 24 gauge minimum. Exposed flashing color shall be selected by architect.
- B. Solder shall be composed of 50% pig lead and 50% black tin conforming to ASTM Specification B-32-602T.
- C. Flux shall be muriatic acid chilled with zinc, or approved brand soldering flux. Acid shall be thoroughly worked off after soldering is complete.
- D. When copper flashing is specified, it shall be type K or greater.

PART 3 – EXECUTION

3.01 PREPARATION

- A. Inspection of surfaces: The surfaces over which the sheet metal is to be applied shall be smooth and free of defects. Report anything in the construction that would make it difficult or impossible to produce a first-class installation of sheet metal work. Any roughness in the substrate shall be made smooth and the work shall be kept clean at all times.

3.02 DISSIMILAR MATERIALS

- A. Where sheet metal abuts into adjacent dissimilar materials, the juncture shall be executed in a manner that will prevent electrolysis between the two materials.

3.03 FABRICATION

- A. Sheet metal shall be formed on a bending brake. Shaping, trimming and hand seaming shall be done on the bench as far as practicable, with the proper sheet metal working tools.

3.04 INSTALLATION

- A. Sheet metal shall be preformed, put in place and fastened to structure with cleats.
- B. Lap end joints of sheet metal in caulking bed 3" and caulk edge.
- C. At maximum 30' o.c. +/- furnish interlocking joint and cap for adequate expansion and contraction.
- D. Install flashing and sheet metal in locations and configurations as shown on the Drawings.
- E. Coordinate flashing and sheet metal work with other trades to provide weathertight and neat installation.

3.05 GUARANTEE

- A. Guarantee all work performed by this Section to be watertight for a period of two years from date of Substantial Completion of the project. Guarantee shall include all materials and workmanship required to repair any leaks that develop and make good any damage to other work or equipment caused by such leaks or the repairs thereof.

END OF SECTION

SECTION 07920 - SEALANTS AND CAULKING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The required applications of sealants and caulking include, but are not necessarily limited to, the following general locations:
 - Exterior wall joints, Exterior window jambs, sills, heads, Joints at penetrations of walls by piping and other services and equipment, Joints between items of equipment and other construction, Around all louvers, grilles and vents Bedding for all door saddles and sills, Open joints between similar and dissimilar materials as required to close and conceal jointing of work
- B. Sealant and caulking work shall be done by a firm experienced in the application of the types of materials required, and employing skilled tradesmen for the work.
- C. Obtain elastomeric materials from only manufacturers who will, if required, send a qualified technical representative to project site, for the purpose of advising the installer of proper procedures and precautions for the use of the materials.

1.03 GUARANTEE

- A. Submit 2 copies of written guarantee agreeing to repair or replace sealants which fail to perform as air-tight and water-tight joints; or fail in joint adhesion, cohesion, abrasion resistance, weather resistance, extrusion resistance, migration resistance, stain resistance, or general durability; or appear to deteriorate in any other manner not clearly specified as an inherent quality of the material by submitted manufacturer's data. Provide guarantee for a period of 2 years, signed by the Installer and Contractor.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Colors: Wherever compound is not exposed to view, provide manufacturer's standard color which has the best overall performance characteristics for the application shown.
- B. Provide manufacturer's standard colors as selected by Architect to either blend or contrast with adjoining surfaces.
- C. Hardnesses shown and specified are intended to indicate the general range necessary for overall performance. Consult the manufacturer's technical representative to determine the actual hardness recommended for the conditions of installation and use. Except as otherwise indicated or recommended, provide compounds within the following ranges of hardness (Shore A, fully cured, at 75 degrees F.):
 - 15 to 25 for high percentage of movement and minimum exposure to weather and abrasion (including no exposure to vandalism).
 - 20 to 45 for moderate percentage of movement and moderate exposure to weather and abrasion.
 - 35 to 60 for low percentage of movement and maximum exposure to weather and abrasion (including foot traffic on horizontal joints).
- D. Modulus of Elasticity: For joints subject to movement, either thermal expansion or dynamic movement, provide elastomeric sealants which have the lowest modulus of elasticity which is consistent with the exposure to abrasion or vandalism. For horizontal joints subject to traffic provide sealants with high modulus of elasticity.

- E. Compatibility: Before purchase of the sealant, investigate its compatibility with the joint surfaces, joint fillers and other materials behind or below the joint in the construction. Provide only materials (manufacturer's recommended variation of the specified materials) which are known to be fully compatible with the actual installation condition, as shown by manufacturer's published date of certification.
- F. One-Component Acrylic Sealant (1ACS): Provide at all points requiring sealant other than expansion joints Acrylic terpolymer, solvent based, one-part thermoplastic sealant compound; not less than 95% of solids made up of acrylic; recommended by manufacturer for general use as an exposed building construction sealant.

2.02 MISCELLANEOUS MATERIALS

- A. Joint Cleaner: Provide the type of joint cleaning compound recommended by the sealant or caulking compound manufacturer of the joint surfaces to be cleaned.
- B. Joint Primer/Sealer: Provide the type of joint primer/sealer recommended by the sealant manufacturer for the joint surfaces to be primed or sealed.
- C. Bond Breaker Tape: Polyethylene tape or other plastic tape as recommended by the sealant manufacturer to be applied to sealant-contact surfaces where bond to the substrate or joint filler must be avoided for proper performance of sealant. Provide self-adhesive tape wherever applicable.
- D. Sealant Backer Rod: Compressible rod stock of open cell #6 urethane foam, self extinguishing or other flexible, permanent, durable material as recommended for compatibility with sealant by the sealant manufacturer; to control the joint depth for sealant placement, to break bond of sealant at bottom of joint, to form optimum shape of sealant bead on back side, and to provide a highly compressible backer which will minimize the possibility of sealant extrusion when joint is compressed.

3.01 JOINT SURFACE PREPARATION

- A. Clean joint surfaces immediately before installation of sealant or caulking compound. Remove dirt, insecure coatings, moisture and other substances which would interfere with bond of sealant or caulking compound.
- B. For elastomeric sealants, do not proceed with installation of sealant over joint surfaces which have been painted, lacquered, waterproofed or treated with water repellent or other treatment or coating unless a laboratory test for durability (bond-cohesion), has successfully demonstrated that sealant bond is not impaired by the coating or treatment. If laboratory test has not been performed, or shows bond interference, remove coating or treatment from joint surfaces before installing sealant.
- C. Etch concrete and masonry joint surfaces to remove excess alkalinity, unless sealant manufacturer's printed instruction indicates that alkalinity does not interfere with sealant bond and performance. Etch with 5% solution of muriatic acid, neutralize with diluted ammonia solution, rinse thoroughly with water and allow to dry before sealant installation.
- D. Examine the joint surfaces, backing and anchorage of units forming sealant rabbet, and the conditions under which the sealant work is to be performed, and to notify the Contractor in writing of any conditions detrimental to the proper sealant work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

3.02 WEATHER CONDITIONS

- A. Do not proceed with installation of liquid sealants under adverse weather conditions, or when temperatures are below or above manufacturer's recommended limitations for installation. Proceed with the work only when forecasted weather conditions are favorable for proper cure and development of high early bond strength. Wherever joint width is affected by ambient temperature variations, install elastomeric sealants only when temperatures are in the lower third of manufacturer's recommended installation temperature range, so that sealant will not be subjected to excessive elongation and bond stress at extremely low temperatures. Coordinate time schedule to avoid delay of project.

3.03 INSTALLATION

- A. Apply in accordance with sealant manufacturer's printed instructions except where more stringent requirements are shown or specified and except where manufacturer's technical representatives directs otherwise.
- B. Prime and seal the joint surfaces wherever shown or recommended by the sealant manufacturer. Do not allow primer/sealer to spill or migrate onto adjoining surfaces.
- C. Install sealant backer rod for liquid elastomeric sealants, except where shown to be omitted or recommended to be omitted by sealant manufacturer for the application shown.
- D. Install bond breaker tape where shown and wherever required by manufacturer's recommendations to ensure that elastomeric sealants will perform properly.
- E. Employ only proven installation techniques, which will ensure that sealants will be deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of the joint bond surfaces equally on opposite sides. Except as otherwise indicated, fill sealant rabbet to a slightly concave surface, slightly below adjoining surfaces. Where horizontal joints are between a horizontal surface and a vertical surface, fill joint to form a slight cove, so that joint will not trap moisture and dirt.
- F. Install sealants to depths as shown or, if not shown, as recommended by the sealant manufacturer but within the following general limitations.

For normal moving joints sealed with elastomeric sealants but not subject to traffic, fill joints to a depth equal to 50% of joint width, but not more than 1/2" deep or less than 1/4" deep.

For joints sealed with non-elastomeric sealants and caulking compounds, fill joints to a depth in the range of 75% to 125% of joint width.

- G. Spillage: do not allow sealants or compounds to overflow or spill onto adjoining surfaces, or to migrate into the voids of adjoining surfaces including rough textures such as exposed aggregate panels. Use masking tape or other precautionary devices to prevent staining of adjoining surfaces, by either the primer/sealer or the sealant/caulking compound.
- H. Remove excess and spillage of compounds promptly as the work progresses. Clean the adjoining surfaces by whatever means may be necessary to eliminate evidence of spillage. Do not damage the adjoining surfaces or finishes.
- I. Polysulfide Sealant Installation: Comply with standard issued by Tiokol Chemical Corp., except where more stringent requirements have been shown or specified, or issued as recommendations by the sealant manufacturer.

- J. Statement of Non-Compliance: Wherever it is necessary to proceed with the installation of sealants or caulking compounds under conditions which do not fully comply with the requirements prepare a written statement for the Architect's record indicating the nature of the non-compliance, the reasons for proceeding, the extra or precautionary measures taken to ensure the best possible work, and the names of the individuals concurring with the decision to proceed with the work.

3.02 CURE AND PROTECTION

- A. Cure sealants and caulking compounds in compliance with manufacturer's instructions and recommendations, to obtain highly early bond strength, internal cohesive strength and surface durability.
- B. Advise the Contractor of procedures required for the protection of sealants and caulking compounds during the construction period, so that they will be without deterioration or damage (other than normal weathering) at the time of substantial completion of the project.

END OF SECTION

SECTION 08100 - METAL DOORS AND FRAMES

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Furnish and install the hollow metal doors and frames of sizes and to details as shown on the Drawings and specified herein.

1.02 SHOP DRAWINGS

- A. Submit shop drawings. The drawings shall show the conditions at doors with various wall thickness, materials, and anchors and a schedule listing the location in the building for each item.
- B. Shop drawings shall show corner sections of doors and frames. Sample sections shall clearly show details of construction, including reinforcing for typical hinges, cylinder lock and strike, surface closers, closer brackets and door stops.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. The steel used in the construction of the hollow metal shall be of the best quality full cold rolled commercial stock free from scale, buckles, and pits.

2.02 HOLLOW METAL DOORS

- A. Doors: 1-3/4" thick, panels shall be 1-3/8" thick, constructed of 2 sheets of 16 gage cold rolled stretcher leveled steel. Vertical stiffeners shall be 20 gage, spaced not over 6" on centers, extending full height of door or panel and spot-welded to face sheets 4" on center, constructed so as to interlock both face sheets, stiffening them with respect to each other as well as with respect to themselves individually. Exterior doors shall be arc-welded continuously at the seam. Top and bottom of doors shall be capped flush with continuous one-piece 16 gage channels extending the full width of the door or panel.
- B. Filling: Fill doors solid between vertical stiffeners with mineral or glass wool of batt type and of minimum 3.5 pound density. No loose or blown-in filling material will be accepted.
- C. Hardware Reinforcement: Mortised reinforced, drilled and tapped at the factory for mortised template hardware only. In accordance with the approved hardware schedule, templates shall be provided by the hardware supplier. Where surface mounted hardware is to be applied, doors shall have reinforcing plates only. Drilling and tapping for surface hardware shall be done by others.
 - 1. Factory reinforce all doors and surface applied closers hold-open devices, as an integral part of the door structure. Reinforcements shall be not less than 12 gage internally sufficient in size to accommodate surface applied door closers, and hold-open devices.
 - 2. Reinforcements for hinges shall be fabricated from not less than 7 gage steel plate 9" long, securely welded to continuous 16 gage interior edge channels. Use of coined or extruded holes will not be acceptable.
 - 3. Reinforcements for locks, latches, push and pulls and panic devices shall be fabricated from 12 gage steel spotwelded to 16 gage interior edge channels and designed to provide adequate support and reinforcement for required hardware.
 - 4. Fabricators shall correct any inaccurate preparations for hardware. All hinged doors shall be templated per templates supplied by hardware supplier.
 - 5. Field welding of all splice joints and finish grinding to be completed by hollow metal manufacturer.
- D. Glass Panels: Where glass windows in the doors are shown, provide fixed stops keyed to door assembly and removable stops secured in place with countersunk oval-headed machine screws on the inside face of exterior doors. Stops shall be mitered or butted and welded at corners. Overlapping flanges at joints are not acceptable.
- E. Where shown on the door schedule, louvers shall be of the welded blade type securely fastened beneath the door surface sheets to conceal louver moldings. Louvers will be of proper size to provide required free air space. Louvers shall be of 1-3/4" thickness.

- F. Shop Finish: Before assembly, all inaccessible surfaces shall be thoroughly cleaned and then sprayed with a rust-inhibiting paint. After complete assembly all oil, dirt, rust and impurities shall be thoroughly removed. Doors shall be filled and dressed and sanded as required to produce a smooth surface. Doors shall then be chemically treated to insure maximum paint adhesion and shall be prime coated on all exposed surfaces with rust inhibited primer which shall be fully cured before shipment.

2.03 COMBINATION FRAMES

- A. Description: Frames for doors, borrowed lights, etc., shall be of the unit type of manufacturer's standard profile or formed to the profile as indicated on the drawings. Exterior frames shall be fabricated from 14 gage cold rolled steel. All other frames shall be fabricated from 16 gage cold rolled steel. All frames are to be continuously electric welded at all joints, miters and stops. Miter and weld corners full length of joints and grind smooth. The stop side of interior frames shall be prepared for rubber silencers as specified in Finish Hardware Schedule.
- B. Hardware Reinforcement: The frame shall be properly cut, mortised, reinforced, drilled and tapped for hinges, strikes, holders and closers where required. (Do not drill and tap for surface mounted closers and brackets). Reinforcement shall be as follows:
1. Butt hinges - 7 gage 12" long full width of the frame profile less the width of one backband.
 2. Closer reinforcements - 10 gage full width of frame trim 12" long.
 3. Reinforcements for strikes, flush bolts and all other surface mounted hardware - 12 gage.
 4. The reinforcing plate is to be a one-piece integral unit, bent for flush mounting of hinges and is not to be built up nor are pieces to be welded together to make up the reinforcing plate. Provide cover boxes in back of all hardware cutouts. Provide flush removable access plates where shown or required. Correct any inaccurate preparation for hardware.
- C. Anchors:
1. Masonry Anchors: Provide frames anchored into masonry with three stirrup and strap type adjustable anchors per jamb for doors to 7'-0" and one additional anchor per jamb for each additional two feet. Straps shall be a minimum of 2" x 10" x 16 gage perforated. Stirrups shall be 16 gage securely spot welded to frame and designed to provide at least 8" of vertical adjustment for strap.
 2. Wood Stud Anchors: Provide frames anchored to wood studs with four 16 gage U-shaped anchors per jamb for doors to 7'-0" and one additional anchor per jamb for each additional two feet. Anchors shall be securely spot welded to frame and provided with 2 holes each side for nailing to wood stud.
 3. Steel Stud Anchor: Provide frames anchored to steel studs with three 16 gage Z-shaped anchors per jamb for doors to 7'-0" and one additional anchor per jamb for each additional two feet. Anchors shall be the same width as the stud by 2" deep. Anchors shall be securely spot welded into frame.
 4. Bolt Anchors: Provide frames anchored into existing conditions with four bolt type anchors per jamb with one additional anchor per jamb for each additional two feet. Anchor spacer angle shall be the full depth of frame face and stop dimension long by 2" high by 12 gage securely welded to frame and provided with a countersunk hole to receive a 3/8" flat head bolt. Bolts, expansion shields and anchor bolts to be provided by others.
- D. Spreaders: Before shipment, install a temporary spreader at bottom of frames. Remove spreader before frames are secured in place.
- E. Shop Finish: After fabrication, frames shall be cleaned and given a shop coat or red oxide or zinc chromate rust inhibitive primer.
- F. Special reinforcement: for door openings wider than 42" and for multiple openings, head members shall be reinforced full length with a 14 gage full profile width channel.

2.04 ACCEPTABLE MANUFACTURERS

- A. Acceptable manufacturers include:
1. Rocky Mountain Metals
 2. Southwestern Hollow Metal

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Doors and frame shall be installed plumb and true, with all hardware left in proper working order. Installation shall be done by a competent door erector and in accordance with door manufacturer's instructions. Secure door frames to floor slab with a countersunk expansion device at each jamb. Build in wall anchors as specified. Wire stud anchors to adjacent double metal studs securely.
- B. Door Clearances:
 - Head 1/8" maximum
 - Jambs 1/8" maximum
 - Between 2 doors of a pair 1/8" maximum
 - Sill (with threshold) 1/8" maximum
 - Sill (without threshold, allow for flooring material) 1/2" maximum

END OF SECTION

SECTION 08140 – WOOD DOORS

PART 1 – GENERAL

1.01 SUMMARY

- A. This section includes wood doors.

1.02 SUBMITTALS

- A. Submit the following items to the architect for review and approval prior to ordering materials.
 1. Manufacturer literature indicating the proposed construction of each door.
 2. Manufacturer shop drawings for each door indicating size, swing, frame, openings, and related fabrication data.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Doors will be manufactured by Algoma Hardwoods, Eggers Industries, Mohawk Flush Doors, or equal.

2.02 MATERIALS

- A. Solid Core Wood Doors for interior use: AWI 1300
 1. Size as indicated on the drawings.
 2. Face Veneer: *Sliced Oak*
 3. Core Construction:
 - a. Non Fire Rated: SLC solid stave lumber
 - b. Fire Rated: Type FD 1-1/2 solid stave lumber
 4. Grade: AWI Custom
 5. Finish: *honey oak finish, factory applied.*
 6. Glazing Frames: *factory finished steel, fire rated at rated doors.*
 7. Glazing: *clear 1/8 inch wired glass meeting fire rating requirements.*

2.03 LABELS

- A. Fire rated doors and frames will have permanent manufacturer labels as required by building codes and industry standards.

2.04 FABRICATION

- A. Fabricate non fire rated doors in accordance with AWI 1300.
- B. Fabricate fire rated doors to AWI 1300 and Underwriters Laboratories requirements.
- C. Install lock blocks at lock edge, and top of door closer for hardware reinforcement.
- D. Bond edge banding of cores.
- E. Factory machine door for hardware in accordance with hardware requirements and dimensions.
Do not machine surface hardware.
- F. Factory fit doors for frame opening dimensions identified on approved shop drawings.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Install non fire rated doors in accordance with AWI Quality Standards.
- B. Install fire rated doors in accordance with AWI Quality Standards and NFPA 80 requirements.
- C. Install door and hardware plumb and straight.

END OF SECTION

08140-1

SECTION 08311 – ACCESS DOORS

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Provide and install ceiling access doors where shown on the plans.

1.02 SUBMITTALS

- A. Submit manufacturer literature to architect for review and comment.
- B. Clearly indicate on the literature which products, materials, sizes, finishes, and fire ratings are proposed for the project.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Products will be equal to Best, Nystrom, or Acudor.

2.02 MATERIALS

- A. Door and frame will be factory primed steel or better. Door and frame will not be plastic.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Install per manufacturer recommendations.
- B. Paint exposed surfaces to match adjacent surfaces. Leave exposed hardware such as hinges or latches unpainted if the hardware is a aluminum, chrome, or brass colored finish not intended to receive paint.

END OF SECTION

SECTION 08505 – ALUMINUM WINDOWS

PART 1 – GENERAL

1.01 SUMMARY

- A. Section includes solid and tubular aluminum extruded windows.

1.02 SUBMITTALS

- A. Submit product literature to the architect clearly indicating which products are proposed to be used.
- B. Submit physical samples of the materials and colors if requested.

1.03 QUALITY ASSURANCE

- A. Comply with ANSI/AAMA 101.I.S.2.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's recommendations.

1.05 WARRANTY

- A. 10 year manufacturer's commercial warranty.
 - 1. Manufacturer's warranty will guarantee windows against defects in manufacturing and workmanship including costs for parts and labor.

PART 2 – PRODUCTS

2.01 MANUFACTURER

- A. Equal to Milgard.

2.02 MATERIALS

- A. Extruded Aluminum will .060 inch thickness at structural walls of the window assembly.
- B. Frames will be constructed with a thermal break.
- C. Glazing will be with insulated glass units meeting ASTM E774, Class A, minimum ¾ inch thick.
 - 1. Glass will have manufacturer's standard Low-E coating.
- D. Insect screens at operable windows will charcoal colored fiberglass mesh on an extruded aluminum frame. Frames will include pull tabs for removal..

2.03 GENERAL PERFORMANCE REQUIREMENTS

- A. Thermal performance will comply with NFRC 100.
- B. Air leakage, water resistance, structural test: comply with ANSI/AAMA 101/I.S.2
- C. Forced-Entry Resistance: Comply with ASTM E 588.

2.04 FABRICATION

- A. Fabricate frames and sashes with welded joints or with mechanically joined corrosion resistant screws and sealed with acrylic sealant.

2.05 FINISHES

- A. Frame and sash color will be selected by architect from the manufacturer's base grade selection. Finishes will be factory anodized.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine openings in which the windows will be installed. Verify that fasteners in the openings will not interfere with window installation.
- B. Coordinate with other trades to correct unsatisfactory conditions.
- C. Commencement of work by installer is acceptance of substrate conditions.

3.02 INSTALLATION

- A. Install windows in framed walls in accordance with AAMA 2400 Mounting Flange Installation or AAMA 2410 Flush Fin Installation.
- B. Do not remove temporary labels until near completion of the project.
- C. Install insect screens on operable sash.

3.03 CLEANING

- A. Remove temporary labels.
- B. Clean soiled surfaces and glass using a mild detergent and warm water solution with soft clean cloths.

END OF SECTION

SECTION 08710 - FINISH HARDWARE

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Provide all labor, material and equipment necessary for finish hardware and related items as shown on the Drawings and specified herein.

1.02 SUBMITTALS

- A. Submit a detailed hardware schedule to the Architect. This schedule should include the following information:
 1. Name and description of each opening.
 2. Complete description of hardware provided, including manufacturer's name and catalog number and quantities.
 3. Complete keying information.
 4. Any other information pertinent for proper selection and installation.

1.03 GUARANTEE

- A. Furnish two (2) copies of Maintenance Manuals covering the finish hardware for this job. Each manual shall consist of printed sheets from the hardware manufacturer, bound in a three-ring binder and properly indexed.
- B. The following information should be included in the Maintenance Manuals:
 1. Name, address and phone number of hardware supplier.
 2. Maintenance instruction and parts list for each type of operating hardware listed including but not limited to locks, exit devices, closers, stops, and hinges.
- C. Furnish two (2) copies of the following written guarantee to be included in the Maintenance Manuals:
 1. Guarantee against mechanical failure of door closers for a five-year period.
 2. Guarantee against failure of aluminum closer shells for the life of the building.
 3. Guarantee against failure of parts for all hardware except door closers for a two-year period.
- D. Starting date for all guarantee periods is to be the date of substantial Completion of the project.

1.04 QUALITY ASSURANCE

- A. The following schedule indicates the minimum hardware requirement for doors:
 1. Butt hinges: Provide 1 ½ pair of butt hinges for each door except as noted. Interior butt hinges shall have non-rising, loose, button tip pins. Exterior butt hinges for out swinging doors shall have non-removable pins. Finish shall match latch set. All butt hinges must be of a size to allow proper functions of the doors. Exterior hinges shall be ball bearing.
 2. Locks: All locks shall have bolts with 5/8" throw.
 3. Strikes shall be box type with curved lips, sufficiently long to protect rim.
 4. Escutcheons shall be drop forged or wrought reinforced bronze. If cast or drop forged bronze, minimum thickness shall be 0.0625". If wrought reinforced bronze, the escutcheon plate and the reinforcement shall each be made from material of a minimum thickness of 0.080".
 5. Knobs and levers for all locks (except dead locks) shall be wrought reinforced or cold forged bronze.
 6. Weatherstripping and door sweeps: at all exterior doors and as noted.

1.05 AMERICANS WITH DISABILITIES ACT

- A. All hardware will meet the Americans with Disabilities Act Accessibility Guidelines, and standards described in the American National Standards Institute A-117, in terms of both type and installation.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Door Hardware: Hardware attached to metal shall be templated and shall be fastened with machine screws long enough to penetrate 1/4" thick reinforcing. Deliver hardware templates for hollow metal doors and frames to the door supplier immediately on receipt of the approved schedule of finish hardware. Deliver hardware templates for wood doors to job site with hardware. Provide rubber silencers for all doors installed in metal frames. There shall be three silencers for each door and two for each pair of doors.
- B. All new cylinders furnished under this contract shall be of the same manufacturer's type and shall have the same keyway unless otherwise specified. Where more than one door occurs at an exterior entrance, provide a cylinder at only one of the doors.
- C. Closers shall have adjustable back check, latching speed and closing speed.
 - 1. Interior doors shall have closers mounted on the room side of the door using regular or parallel arm mounting to prevent arms from protruding into the corridor. Closers shall not be mounted where they will be exposed to the weather. Exterior, out swinging doors shall have closer parallel mounted on the inside of the door.
 - 2. Closers shall be sized for each door in accordance with the recommendations of the closer manufacturer. Closers for unusually heavy doors or doors which are subject to strong drafts shall be increased in capacity as necessary to suit the actual conditions of operation.
 - 3. Brackets shall be cast metal of suitable size for closers and finished to match hardware. Brackets shall be used on all exterior doors and all doors where trim will not permit the "regular" mounting of closers.
 - 4. Pressure shall be adjustable and shall be within ADA requirements for force required for operation.
- D. Door pulls shall be approximately 16 x 4".
- E. Push plates shall be approximately 16 x 4".
- F. Kick plates shall be at least 8" high wrought 18" ga. stainless steel beveled, 3 sides, countersunk for and secured with oval head or flush screws to match the plate finish. Mount 1/2" above door bottom and leave 1" margin at sides.
- G. Thresholds shall be extruded aluminum and shall extend across full width of the opening in one piece. Height of threshold shall not exceed 1/2", measured from the lowest adjacent finished floor or finished exposed concrete slab to the top highest point on the threshold, in accordance with the Americans with Disabilities Act Accessibility Guidelines.
- H. Door stops and holders: Attach stops to masonry and concrete with expansion shield fasteners. Attach to interior walls with wood screws, provide packing as shown on drawings. Attach stops to doors when striking cabinets or shelving.
- I. Door lock and stop combinations must be selected and mounted in order to assure that the lock is not accidentally activated by pressing against the stop or other obstructions.
- J. After final inspection, adjustment and certification of the hardware, deliver keys to the Owner.
 - 1. Enclose all door keys for each room in separate envelopes per each door. There should be 2 keys for each door in each room.
 - 2. Label each envelope with the room name, room number, and the number of keys enclosed.
 - 3. Enclose all keys for electrical panels in a separate envelope or box suitably labeled.
 - 4. All other keys shall be enclosed in separate envelopes, labeled to indicate the number of keys delivered and their function.

K. Approved Manufacturers

Butts: Stanley, Hager, Cal-Royal
Panics: Von Duprin 33 Series, Cal-Royal 8000 Series
Locks: Sargent, Schlage, Yale, Cal-Royal grade 1
Closers: Norton 8301, Yale 3301, Sargant 1230, LCN 1460, Cal-Royal 900
Trim: Baldwin, BBW, Quality
Weatherstrip and sweeps: Reese, Zero, National Guard
Stops and Holders: Commercial grade by Hager, Russwin, Stanley, Cal-Royal

Substitutions are acceptable only if first approved by the architect.

PART 3 - EXECUTION

3.01 INSTALLATION, INSPECTION AND ADJUSTMENT

- A. Contractor shall be responsible for the correct application of finish hardware. Hardware Supplier shall authorize his representative to be present when all Finish Hardware is delivered to the site and check-in each hardware item, turning over same to the Contractor and seeing that the same is stored in a secure place and under lock and key. Prior to final inspection, Hardware Manufacturer shall inspect and adjust all door closers and locks and/or all items requiring close adjustment and/or regulation and check all keying.
- B. Each package of hardware shall be carefully marked for its intended opening and use.
- C. All necessary screws and bolts for proper installation shall be furnished by the hardware supplier. All shall be of suitable sizes, type and finish to harmonize with the hardware.

3.02 MOUNTING

- A. Hardware such as door closers, forearm shoes of closers and holding devices mounted on metal doors or panels shall be attached with machine screws.
- B. Attachment of hardware to masonry or concrete shall be done with expansion bolts or similar drilled anchors so as to develop the full strength of the attached device.
- C. Mounting heights: Dimensions given are from floor to center line of hardware item.
 - Door knobs: Standard - 36"
 - Push plates: Standard - 46" (less if located below dead bolt)
 - Pull plates: Standard - 46" (less if located below dead bolt)
 - Exit device cross bar: Standard - 36"

HARDWARE GENERAL

Key all new locks identical. Owner will re-key at completion of project.
New hardware will have brushed chrome/brushed aluminum at exterior doors.
New hardware will have antique brass/satin bronze at interior doors.
Provide silencers at new doors.
Replace silencers at existing doors where silencers are missing or deteriorated.

HARDWARE SETS

- Door 10 new door Exterior to 113 Clerk
Lever, keyed entry lock, separate keyed deadbolt
Hinges
Closer
Weatherstripping & sweep
Threshold
- Door 11 new door 112 Clerk to 110 Vault
Lever, keyed office lock
Hinges
Closer
Floor mounted hold open, auto release connected to alarm and sprinkler system. Wiring from hold open device to power and alarm system installed by owner's alarm contractor.
- Door 12 relocated door 112 Clerk to 111 Fire Closet
replace lever with new passage lever
- Door 13 existing door Exterior to 101 Courtyard Storage
Adjust lockset to allow for easy operation or replace with new keyed lever.
Replace missing Threshold and sweep.
- Door 20 existing door pair Exterior to 123 North Entry
Replace damaged gasket weatherstripping at latch side of west door frame to match existing weatherstripping.
Replace aluminum threshold with new aluminum threshold that has an inside edge height the same as the height of the new luxury vinyl tile or Trim inside beveled edge of existing aluminum threshold so that it does the same.
- Door 21 existing door 124 North Entry Hall to 122 Janitor
no new hardware required
- Door 22 existing door 124 North Entry Hall to 125 Restroom
no new hardware required
- Door 23 existing door 125 North Hall to 131 Closet
no new hardware required
- Door 24 existing door 125 North Hall to 132 Closet
no new hardware required

Door 25	existing door no new hardware required	125 North Hall to 121 Treasurer
Door 26	existing door no new hardware required	125 North Hall to 133 Passage
Door 27	existing door Replace missing lever with keyed office lever.	125 North Hall to 120 Assessor
Door 28	existing door Replace keyed lever with keyed office lever.	126 North Hall to 116 Clerk Entry
Door 31	new door Lever, passage Hinges Closer	126 North Hall to 128 Men's
Door 32	new door Lever, passage Hinges Closer	127 North Hall to 129 Women's
Door 33	new door Lever, keyed office Hinges	133 Passage to 137 DWI Coordinator
Door 34	existing door no new hardware required	137 DWI Coordinator to 136 Restroom
Door 35	existing door no new hardware required	136 Restroom to built-in
Door 36	new door Lever, keyed office Hinges	133 Passage to 134 Server
Door 37	new door Lever, keyed office Hinges	139 Administration to 138 County Manager
Door 38	existing door no new hardware required	125 North Hall to 139 Administration
Door 40	existing door Replace aluminum threshold with new aluminum threshold that has an inside edge height the same as the height of the new carpet 3/8" to 1/2" or Trim inside beveled edge of existing aluminum threshold so that it does the same.	Exterior to 150 East Entry Hall
Door 41	existing door Replace aluminum threshold with new aluminum threshold that has an inside edge height the same as the height of the new luxury vinyl tile 3/8" to 1/2" or Trim inside beveled edge of existing aluminum threshold so that it does the same.	Exterior to 151 East Entry

Door 42	new door	153 Break Room to 153b Closet
	Lever, passage	
	Hinges	
Door 43	existing door	152 South Hall to 153 Break Room
	flip existing hardware so that keyed side of lever remains at hall side	
Door 44	existing door	152 South Hall to 156 Temp Office
	no new hardware required	
Door 45	existing door	152 South Hall to 154 General Storage
	no new hardware required	
Door 46	existing door	152 South Hall to 155 Community Office
	no new hardware required	
Door 47	existing door	152 South Hall to 157 Commission
	no new hardware required	
Door 48	new door	152 South Hall to 157 Commission
	Lever, keyed office	
	Hinges	
	Closer	
Door 50	existing door	Exterior to 152 South Hall
	no new hardware required	

SECTION 08910 – WALL LOUVERS

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Provide and install commercial grade aluminum wall louvers where indicated on plans.

1.02 SUBMITTALS

- A. Submit manufacturer's data to the architect for review and comment.
- B. Clearly indicate the louver material, size, operation, finish, and related data.

PART 2 – PRODUCTS

2.01 MANUFACTURER

- A. Louvers will be manufactured by Metalform or equal.

2.02 EXTERIOR LOUVER MATERIALS

- A. *Wall louvers will be made of heavy gauge extruded aluminum with a clear anodized finish. Do not paint.*
- B. *Blades will be approximately 4 inches deep with drainable blades.*
- C. *Louvers will have an insect screen on the interior side.*
- D. *Frames will be flanged to conceal the edges of the wall openings.*
- E. *Attic vents will be inoperable. See facility designs for size.*
- F. *Crawl space vents will be manually operable. Opening size will be nominal 12"x12" except where noted otherwise on the facility designs.*

2.03 INTERIOR LOUVER MATERIALS

- A. *Wall louvers will be made of medium gauge extruded aluminum with a factory painted finish to be selected by architect from manufacturer's standard base color selection.*
- B. *Blades will be approximately 2 inches deep.*
- C. *Frames will be flanged to conceal the edges of the wall openings.*
- D. *See facility designs for nominal size.*

PART 3 – EXECUTION

3.01 INSPECTION

- A. Inspect the wall openings for size. Widen or infill opening if needed to allow the louver frame to anchor firmly and fit snug.
- B. If the opening is infilled to achieve the correct opening size then the finished infill will match the wall finish.

3.01 INSTALLATION

- A. Install per manufacturer recommendations.
- B. Anchor to wall opening. Add anchoring material to the opening if needed such as wood blocking or other materials suitable for anchoring to.

END OF SECTION

SECTION 09200: STUCCO

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Provide and install the stucco system and all accessories recommended by the stucco manufacturer for the given applications.

1.02 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies: Install stucco base coat system to comply with all applicable codes and standards and with requirements of local agencies having jurisdiction.
- B. Applicator Qualifications: Applicator will have prior experience on at least three projects of comparable size and materials.
- C. Allowable Tolerances: Maximum deviation from true plane of 1/8" in 5' as measured by straight edge placed at any location on the stucco surface.
- D. Single Source Responsibility: All stucco material or system materials will be from single manufacturing source or as approved by the stucco manufacturer.

1.03 SUBMITTALS

- A. Manufacturer's technical information if different than those products or brands specified herein. Information will include manufacturer's installation instructions and recommendations.
- B. Job Mock-up: Applicator will prepare an approximately 4'x4' panel using the same sequencing, materials, substrate, and application techniques planned for the project. Sample will accurately show color, texture, and workmanship of finished work. Do not proceed with work until Architect has approved the mock-up. The sample will be kept on site through the duration of the construction project as reference.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver manufacturer's materials in original unopened packages with labels intact and legible.
- B. Keep materials dry, stored off of the ground and under cover.
- C. Remove wet or damaged materials from site.

1.05 JOB CONDITIONS

- A. Do not use frozen materials in mixes or apply to frozen or frosted surfaces. Do not apply cement plaster when ambient temperature is forecast to be less than 40 degrees F within 48 hours following application.
- B. Protect plaster after mixed or applied from uneven and excessive evaporation. Do not apply cement plaster when ambient temperature is above 100 degrees F.
- C. Protect finish surfaces installed prior to plastering and maintain protection in place till work is completed. Protect finished work when stopping for the day or when completing an area.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Weather resistant barrier of 1 layer of grade D, 15 lb. building felt over all new substrates of sheathing (2 layers over all wood based substrates).
- B. Metal Accessories: Manufacturer's standard steel products unless otherwise indicated will be zinc alloy.
 1. Exterior Components: Hot dipped galvanized finish, minimum of a 17 gauge self furred stucco netting.
 2. Interior Corner Beads: 'J' metal or plaster stop, general purpose type with expanded or perforated flanges.
 3. Cornerite/Corneraid: Manufacturer's standard pre-formed interior corner reinforcement made from 2.5 lbs. per square yard diamond metal lath.
 4. Square Edged Corner Beads: Expanded or flanged to suite application.
 5. Round Edged Corner Beads: Expanded or flanged to suite application.
 6. Control Joints: No. XJ15-3 control joint with 1/4" slot and 1" grounds or equal. Control joints must be wire tied to lath and not nailed or screwed to substrate.

7. Expansion Joints: No. 40 adjustable expansion joint, free floating with adjustments from 1/4" to 5/8".
 8. Weep Screeds: No. 7 Foundation Sill Screed with holes for drainage.
 9. Fasteners: (CMU/Concrete Applications) Galvanized steel of furring type and length suitable for at least 1/2" penetration of the brick, block, or concrete substrate.
 10. Fasteners: (Stud Applications) Screws or nails composed of galvanized steel of type and length suitable for at least a 1/2" penetration of the stud system.
 11. Expanded metal strip lath: 3.4 lb. density, for use on all windows, doorways, or openings.
 12. Expanded metal lath: 3.4 lb. density, for use on all soffits and overhangs as shown on drawings.
- C. Fiber reinforced Portland cement plaster base coat, El Rey Stucco, Pre Sanded 'Fiber 47' or 'Concentrate' or equal if first approved by Architect.
- D. Sand (if cement plaster is not pre sanded)
1. Sand must have Sand Compliance Certificates stating that it is certified to be ASTM C-897, clean washed plaster sand.
 2. Sand shall be placed on a protective surface and covered when not in use.
 3. Third party inspection of the sand may be required at the request of the Owner or Architect.
- E. Potable water.
- F. Secondary Mesh Reinforcement: Manufacturer's standard woven fiberglass mesh, consisting of alkali resistive treated fiberglass mesh. El Rey Stucco, 'Krak-Master' or equal if first approved by Architect.
- G. Bonding Agent for use over CMU or Concrete: Acrylic polymer bonding agent, El Rey Stucco, 'Superior Bond 100' or equal if first approved by Architect.
- H. Finish Coat: Cement based colored stucco finish coat, consisting of cement, lime, aggregate, proprietary ingredients, and colorant. El Rey Stucco, 'Premium Colored Stucco', or equal if first approved by Architect. Color to be selected by Architect.

2.02 MIXES

A. General

1. Accurately proportion materials for each plaster batch with measuring devices of known volume.
2. Size batches for complete use within maximum of one hour after mixing.
3. Re-temper plaster stiffened from evaporation but do not use or re-temper partially hydrated cement plaster.
4. Do not use frozen, caked, or lumpy materials, and remove such materials from job site immediately.
5. Mix factory prepared cement plaster in accordance with manufacturer's written instructions and recommendations.

B. Mechanical Mixing

1. Clean mixer of set or hardened materials before loading new batch.
2. Maintain mixer in continuous operation while adding materials.
3. Confirm to mixing sequence, cycle of operations, and time recommended by the manufacturer of the base coat / finish coat mix materials.

C. Hand Mixing

1. Do not hand mix stucco base coat / finish coat system materials unless authorized by the Architect.
2. Use waterproof mixing boxes and/or water barrels when mixing within a building.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Verify that surfaces to be plastered are free of dust, loose particles, oil and other deleterious materials which would affect bond or proper hydration of cement plaster.
- B. Verify that lath is tight, properly secured and overlapped, and that all accessories are properly set and secured.

- C. Isolation: Where lath and metal support system abuts building structure horizontally, and where the partition wall work abuts the overhead structure, isolate work from structure movements. Install expansion or control joints to absorb deflections but maintain lateral support. Frame both sides of expansion or control joints separately and do not bridge joints with furring or lath.
- D. Examine substrates, grounds, and accessories to insure that finished plaster work will be true to line, plane, level, and plumb.
- E. Verify that masonry and concrete surfaces to receive direct bond applications of plaster base coats are rough or otherwise properly prepared to provide adequate bond.
- F. Installer notify general contractor and Architect of any conditions detrimental to proper and successful installation of stucco base coats. Do not proceed with installation until unsatisfactory conditions are corrected.

3.02 APPLICATION

A. General

- 1. For preparation over masonry or concrete substrates apply a uniform coating of acrylic bonding agent in accordance with manufacturer's recommendations and instructions.
- 2. For all applications, apply stucco base and finish coat systems in accordance with manufacturer's instructions and recommendations, and in compliance with requirements of applicable codes, regulations and agencies having jurisdiction.
- 3. Interrupt or delay plaster applications only at junctions of plaster planes, at openings, or at control joints.

B. Scratch Coat

- 1. Apply scratch coat to a minimum thickness of 3/8" using sufficient trowel pressure to key plaster into lath or to create bond to substrates as applicable.
- 2. Prior to initial set, scratch horizontally to provide key for bond of brown coat.

C. Brown Coat

- 1. Apply brown coat to a minimum thickness of 3/8", using sufficient trowel pressure to key plaster into scratch coat.
- 2. Rod surface to true plane.
- 3. Brown coat may be applied over scratch coat as soon as scratch coat is sufficiently hard.
- 4. While brown coat is still wet, embed secondary fiberglass reinforcement and smooth to flush. Take care to completely embed mesh into wet base coat.
- 5. Float or lightly broom surface to provide for bond with stucco finish coat.
- 6. Tool brown coat to provide a V-joint at intersection of plaster with frames or other items of metal, wood, or plastic which act as plaster grounds.

D. Finish Coat: Cement Based Finish Coat

- 1. Apply exterior wall finish coat to thickness recommended by manufacturer to achieve texture indicated, using sufficient trowel pressure or spray velocity to bind finish coat to base coat.
- 2. Apply exterior wall finish in number of coats and consistency required to achieve texture to match selection.

3.04 CURING

- A. Moist cure each coat of stucco base coat system with a fine fog spray of clear water with sufficiently frequent applications to maintain plaster uniformly moist for a minimum of 48 hours following application.
- B. Wet curing of scratch coat is not required if using the double back method (application of brown coat as soon as scratch coat is firm).
- C. Wet cure cement based finish coat by misting with water with sufficiently frequently applications to maintain plaster uniformly moist for a minimum of 48 hours following application.

3.05 ADJUST AND CLEAN

A. Patching:

1. Upon completion, point up exterior wall finish coat around trim and other locations where finish coat terminates or meets dissimilar materials.
2. Cut out and replace defective or damaged exterior wall finish coat.
3. Match pointing and patches to surrounding finish coat in form, texture, and color.

B. Cleaning:

1. Remove exterior wall finish and protective materials from perimeter trim and adjacent surfaces.
2. Remove all stucco related excess materials from the project site.

C. Maintenance kit will include enough materials for repair of 100 sf. Containers of liquids will be unopened.

END OF SECTION

SECTION 09250 - GYPSUM BOARD

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Provide all labor, equipment, appliances and materials, and perform all operations in connection with the installation of drywall as shown on the Drawings and specified herein.
- B. In cold weather heat the building in advance of and during application of the gypsum wallboard to maintain a uniform temperature in the range of 55 degrees F. to 70 degrees F., and ventilation shall be provided to eliminate excessive moisture. Drafts are to be avoided during application.
- C. Gypsum board shall be supplied in lengths as long as possible to minimize joints.

1.03 MATERIAL HANDLING

- A. Deliver materials to the job site in original unopened containers, stored in a place protected from exposure and damage in accordance with manufacturer's recommendations.

PART 2 - PRODUCTS

- A. Products listed below are manufactured by the United States Gypsum Company, unless otherwise indicated and are intended to establish a level of quality. Products of similar quality manufactured by National Gypsum Company, Kaiser Gypsum, Georgia Pacific, are considered equal.
 - 1. Gypsum Wallboard: 5/8" Exterior gypsum sheathing, Firecode as required.
5/8" Sheetrock Firecode Wallboard (Type "X"), tapered edge.
5/8" Water Resistant gypsum board.
 - 2. Furring Channels: 1-1/2" metal Z furring channel
 - 3. Reinforcing Tape: Perf-A-Tape
 - 4. Joint Compounds: Durabond 90 Joint Compound all purpose
USG Ready Mixed Joint Compound
USG Mixed Joint Compound (topping)
 - 5. Sound Insulation: USG Thermal Fiber or as noted on plans.
 - 6. Metal Accessories: Dur-A-Bead #103 Corner Reinforcement
Metal Trim #200-B
Control joint #093
additional accessories as required.
 - 7. Studs and Runners: USG 358 ST5 & ST10 style studs in standard gage
(Interior Partitions) material unless otherwise specifically indicated on the plans.
 - 8. Furring Channels: USG 7/8" Furring Channels.
 - 9. Runner Channels: 1-1/2" Cold-Rolled Channels 16 gage channels.
 - 10. Screws: Type S and Type G in length and as recommended for various types of installation by manufacturer.
 - 11. Caulking: Tremco Acoustical Sealant.
Tremco Mono-Lasto-Meric Sealant.
 - 12. Adhesives: Perf-A-Tape Joint Compound-Taping for laminating wallboard to wallboard.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install materials in strict accordance with manufacturer's printed recommendations.

- B. Align metal studs and runners accurately at floor and ceiling and anchored securely with drilled-in anchors equal to Phillips Red Head at 24" o.c. maximum. Power driven anchors allowed at floor runners only. Studs shall be positioned vertically in runners at 24" o.c. or as otherwise specifically indicated on the Drawings and secured per manufacturer's specifications.
- C. Install suspended ceiling and soffit 1-1/2" runner channels at 4" o.c. maximum and supported with 9 gage hanger wires at 4"-0" o.c. maximum. Install 7/8" furring channels at 24" o.c. or as otherwise indicated on the Drawings and fixed securely to runners with USG metal furring channel clips.
- D. Apply gypsum board to studs with ends staggered using screws at 8" o.c. at vertical joints and 12 o.c. vertically at interior panel bearing points.
- E. Ceiling and soffit gypsum board shall be applied with long dimension perpendicular to the furring channels and fastened with 7/8" USG Hi Lo Screws Type S spaced at 8" o.c. at edges of board and 12" o.c. in the field of the board. All abutting and edge joints shall occur over the web surface of the furring channel and shall be fitted nearly and accurately with end joints staggered.
- F. Fit gypsum board neatly around penetrations or over minor variations in the wall plane as required. Increase wall thickness as required to accommodate built-in items such as, but not limited to, paper dispenser, electrical panel, structural columns. Coordinate with other work to insure proper placement of built in items.

3.02 FINISHING

- A. Apply USG Ready-Mixed Joint Compound All Purpose or USG Joint Compound, taping in a thin uniform layer to all joints and angles to be reinforced. Apply Perf-A-Tape Reinforcing Tape immediately, centered over the joint and seated into the compound with sufficient compound under the tape to provide proper bond. Apply a skim coat. Tape shall be properly folded and embedded in all angles to provide a true angle. The tape or embedding coat must be thoroughly dry prior to application of the fill coat.
- B. USG Ready-Mixed Joint Compound - Apply All Purpose or USG Joint Compound Topping over the embedding coat, filling the board taper flush with the surface. The fill coat shall cover the tape and feather out slightly beyond the tape. No fill coat is necessary on interior angles. The fill coat shall be thoroughly dry prior to application of the finish coat.
- C. Apply evenly USG Ready-Mixed Joint Compound Topping over and extended slightly beyond the fill coat on all joints and feathers to a smooth uniform finish. Over tapered edges, the finished joint shall not protrude beyond the plane of the surface. All taped angles shall receive a finish coat to cover the tape and taping compound, providing a true angle. Sand between coats and following the final application of compound to provide a smooth surface.
- D. All dimples and nail heads shall receive three coats of joint cement or topping, applied as each coat is applied to the joints.
- E. Conceal Dura-A-Bead in accordance with the manufacturer's recommendations at all exterior corners.
- F. Conceal USG #200 trim in accordance with manufacturer's recommendations at locations where gypsum board abuts another material and at all ceiling-wall intersections.
- G. All joints and edges shall be allowed to dry thoroughly (minimum of 24 hours) between applications of cement.

- H. Sand coats after each application of joint cement or topping has dried. The final coat and subsequent sanding shall leave all gypsum board areas uniformly smooth and ready for decorations.
- I. Final coat of joint cement on topping shall be applied in a smooth uniform fashion, but need not be sanded in areas where it will not have an architectural finish or be seen (i.e., behind cabinets and above ceiling).

3.03 SPECIAL APPLICATION AND INSTALLATION

- A. Metal Door Frames: Install double ST10 style studs within 2" of all door-frame jambs, anchor to jamb and head anchor clips of each frame by bolt or screw attachment. Over frames, install a cut-to-length section of runner with the flanges slit and web bent to allow flanges to overlap adjacent vertical studs, and securely screw-attach to adjacent studs. A cut-to-length stud extending from door frame header to ceiling runner shall be positioned at vertical joints over door frame.
- B. Wall Furring Direct Attachment: Attach furring channels vertically to the wall, spaced 24" o.c. and attach with hammerset or concrete stud nails spaced 24" o.c., staggered on alternate wing flanges.
- C. Coordinate stud placement with location of wall mounted shelf brackets and cabinetry where required.

3.04 CLEANING

- A. At the completion of installation of the partitions, all rubbish shall be removed from the building, leaving floors broom clean. Excess material, scaffolding, tools and other equipment shall be removed from the building and job site.

END OF SECTION

SECTION 09300 – TILE SETTING MATERIALS, FLOOR LEVELING MATERIALS, AND ACCESSORIES

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Primers for adhering new cement based floor filler to old vinyl composition tile.
- B. Floor leveling cement based materials for correcting offsets at concrete subfloors.
- C. Thinset mortar for ceramic and porcelain tile applied to floors and walls.
- D. Sanded colored grout for ceramic and porcelain tile.

1.02. SUBMITTALS

- A. Submit manufacturer's literature to architect for review and comment before ordering materials.
- B. Printed color samples when colors choices are available. Submit a physical sample if requested.
- C. Contractor and specialty trades are encouraged to recommend similar products to the architect in place of the specified products if it is believed other products might be a better solution.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials and products as recommended by the manufacturer.

1.04 PROJECT CONDITIONS

- A. Maintain environmental conditions including temperature, humidity, ventilation, and dust containment as recommended by the product manufacturers. Do not install products under conditions outside of manufacturer's recommendations.

PART 2 – PRODUCTS

2.01 MANUFACTURER

- A. Products specified are by Proflex. Products will be of equal quality to those specified.

2.02 PRIMER

- A. Proflex SP21 multipurpose sealer and primer. Acrylic based, solvent free.
- B. Applied as a bonding agent for modified mortars adhered to old vinyl composition tile.

2.03 FLOOR LEVELING COMPOUND

- A. Proflex Feather Flex portland cement based one component skim coat.
- B. Applied as a leveling material at floor offsets over a primer over prepared old vinyl composition tile.

2.04 THINSET MORTAR

- A. Proflex Pro Stick 42 multipurpose thinset mortar.
- B. Applied with ceramic tile over cement based backer board.

2.05 SANDED GROUT

- A. Proflex sanded grout. Color to be selected by architect from manufacturer's standard colors.
- B. Applied with ceramic tile.

PART 3 – EXECUTION

3.01 PREPARATION

- A. Coordinate scheduling with weather conditions and other trades to avoid conflicts and avoid traffic on the materials until the materials are cured and ready to receive traffic.

3.02 PRIMER

- A. Prepare existing floor base as recommended by the primer manufacturer. Sand or otherwise roughen the smooth surface of the base to promote bonding.
- B. Clean the surface then apply in climate and temperature conditions recommended by the manufacturer.
- C. Provide and apply/install accessory products as needed.

3.03 FLOOR LEVELING COMPOUND

- A. Prepare existing floor base as recommended by the compound manufacturer. Feather to old floor level away from the offset. Apply in multiple layers if required by the maximum recommended thickness of each layer.
- B. Clean the surface then apply in climate and temperature conditions recommended by the manufacturer.
- C. Provide and apply/install accessory products as needed.

3.04 THINSET MORTAR

- A. Prepare cement based backer board in preparation for the mortar.
- B. Clean the surface then apply in climate and temperature conditions recommended by the manufacturer.
- C. Provide and apply/install accessory products as needed.

3.05 SANDED GROUT

- A. Prepare tile as recommended by both the tile manufacturer and the grout manufacturer.
- B. Clean the surface then apply in climate and temperature conditions recommended by the manufacturer.
- C. Provide and apply/install accessory products as needed.

3.06 CLEAN AND PROTECT

- A. Clean the project area. Restore any damaged materials damaged as a result of the work.
- B. Protect the work from future damage during construction.

END OF SECTION

SECTION 09305 – CERAMIC AND PORCELAIN TILE

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Provide and install ceramic and porcelain tile on interior surfaces.
- B. Prepare surfaces. Provide and install adhesives, mortar, grout, sealers, and other accessories as needed.

1.02 SUBMITTALS

- A. Submit manufacturer's literature to the architect for review and comment before ordering materials. Submit data for tile, grout, mortar, primers, adhesives, sealers, and other products proposed for use on the project.
- B. Before submitting the contractor will verify that the specified shapes, sizes, bullnose, and other profiles are available in the proposed product line.
- C. Literature will clearly indicate the products, tile shapes and sizes, and colors.
- D. Grout color will be selected by the architect from the manufacturer's standard color selection.
- E. Submit physical samples if requested.

1.03 QUALITY ASSURANCE

- A. Product manufacturer(s) will be an established producer of quality tile products and accessories.
- B. Installer will have demonstrated experience in installation of similar installations.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store materials in original containers with seals unbroken and labels intact until installation.
- B. Prevent damage to the materials by water, freezing, foreign matter, and other causes.

1.05 PROJECT CONDITIONS

- A. Maintain environmental conditions of temperature, humidity, and ventilation within limits recommended by the manufacturer. Do not install under any other conditions.
- B. Unless specifically indicated by the product manufacturers set and grout tile when the surfaces and ambient temperature is between 50 degrees and 90 degrees F.
- C. Protect adjacent work surfaces during tile work. Close the rooms and spaces to traffic of all types until mortar and grout has set.
- D. Observe the manufacturer's safety instruction including ventilation.

PART 2 – PRODUCTS

2.01 TILE

- A. Tile will be equal to DAL Tile, Continental Slate.
- B. If tile substitutions are proposed then the proposed substitution will be from another reputable manufacturer offering the same sizes, profiles, and very similar color and appearance.

2.02 ACCESSORIES

- A. Adhesives, primers, grout, mortar, and related accessories will be as recommended by the tile and product manufacturers.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine surfaces receiving tile.
- B. Do not proceed with work until defects or conditions which would adversely affect quality, execution, performance, and appearance of the finished tile work are corrected.

3.02 PREPARATION

A. Surface Preparation for Tile

1. All supporting surfaces will be structurally solid, level, and plumb to a tolerance in plane of $\frac{1}{4}$ inch in 10 feet for walls and floors. When installing large format tile larger than 15 inches in any dimension then reduce the tolerance to $\frac{1}{8}$ inch in 10 feet.
2. Substrates will be clean and free of dust, oil, grease, tar, wax, curing compound, paint, laitance, loosely bonded topping, or any deleterious substances which may reduce adhesion.
3. Mechanically sand and scarify the substrate to completely remove paint and loosely bonded topping.
4. Neutralize acid or alkali on the substrate surface.
5. Substrates must be dry.
6. Protect work from radiant heat systems, forced air systems, and radiant heating systems. Protect work against drafts during installation for a period of at least 72 hours after completion. Use indirect auxiliary heaters to maintain acceptable temperatures. Vent heaters to exterior to avoid damage from carbon dioxide buildup in the tile area.
7. Pressed wood, particleboard, chipboard, masonite, gypsum floor patching compounds, asbestos board, luan, and similar dimensionally unstable materials are not acceptable substrates.

- B. Concrete and masonry substrates must comply with ANSI A108.01, Section 3.2. Concrete substrates will be at least 28 days old and completely cured.

- C. Backerboards will be installed per ANSI A108.1 section 2.5

- D. Tiling over old substrates such as terrazzo, ceramic tile paver, quarry tile, vinyl and vinyl composition tile, the substrate will be sound, solidly in place, stripped of wax or sealants and sanded, clean, free of dust and soap residue and other substances which could reduce adhesion.

3.03 SUBSTRATE DEFLECTION

- A. Deflection of the substrate under maximum anticipated loads cannot exceed $\frac{1}{360}$ of the span.

3.04 ADJACENT SURFACES

- A. Protect adjacent surfaces prior to beginning work.

3.05 INSTALLATION

- A. Install in accordance with manufacturer's recommendations.
- B. If instructions conflict between the manufacturer's recommendations of the different products, the plans, project manual, building codes, and industry standards notify the architect.
- C. Seal grout and unglazed tile with an appropriate sealer 48 to 72 hours after grout application.

SECTION 09510 – ACOUSTICAL CEILINGS

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Provide and install suspended lay-in acoustical ceiling consisting of:
 - 1. Suspended metal grid including track, borders, suspension wires, and accessories.
 - 2. Acoustical ceiling panels.

1.02 SUBMITTALS

- A. Submit manufacturer's literature to the architect for review and approval before ordering materials. The proposed ceiling panel and grid selections will be clearly identified.
- B. Submit physical samples if requested.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in the manufacturer's original unopened undamaged packaging with identification labels intact.
- B. Protect materials from damage during storage and handling.

1.04 PROJECT CONDITIONS

- A. Maintain environmental conditions of temperature, humidity, and ventilation within limits recommended by the manufacturer.

1.05 WARRANTY

- A. Manufacturer will warranty that the materials furnished will be free of manufacturing defects for a period of one year after the project date of substantial completion.

1.06 SURPLUS MATERIAL

- A. Provide at least ten uncut undamaged ceiling tiles at the end of the project to the owner for future use.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Ceiling grid will be standard 15/16" wide T grid manufactured by Chicago Metallic or equal. Manufacturer's standard white color.
- B. Suspension wire and other accessories will be as recommended by grid manufacturer.
- C. Ceiling panels will be 24"x24"x 3/4 inch mineral fiber, equal to Amrstrong Optima, standard white color.

PART 3 – EXECUTION

1.01 WORK AREA EXAMINATION

- A. Work will not begin until the space is fully enclosed and glazed.
- B. Work will not begin until the space is protected from moisture, dust, paint spray, and other foreign materials that could damage or stain the ceiling materials.
- C. Temperature of the space will be as recommended by the material manufacturer during and after installation.

1.02 INSTALLATION

- A. Installation will be in strict accordance with the manufacturer's written recommendations and specifications.
- B. Suspension cables should be securely anchored to ceiling deck and not to existing t-bar grids from previous ceiling installations.

1.03 CLEANING

- A. Clean exposed surfaces of ceiling panels so they are free from dust, stains, scuffs, and discoloration so they are in new undamaged condition.
- B. If damaged or discolored panels cannot be restored to new undamaged condition they will be replaced with new undamaged panels.

1.04 DELIVERY

- A. Deliver required surplus material to owner at the completion of the construction project.

END OF SECTION

SECTION 09651 – RESILIENT TILE FLOORING

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Provide and install luxury vinyl tile and accessories where indicated on the plans.

1.02 SUBMITTALS

- A. Submit manufacturer's literature clearly indicating the products and accessories proposed for this project.
- B. Submit printed color selections. Submit physical samples of the product and colors if requested.

1.03 SCHEDULING

- A. Coordinate scheduling with other trades to avoid conflicts and damage.
- B. Do not install flooring over concrete and substrates until they are sufficiently dry to achieve a bond with the adhesive. Test new concrete surfaces to assure an acceptable pH level.

1.04 QUALITY ASSURANCE

- A. Flooring material, adhesives, and adhesive primers will be supplied by one manufacturer.
- B. Installer will be experienced with similar installations.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in good condition to the jobsite in the manufacturer's original unopened containers bearing the name and brand of the manufacturer.
- B. Store in a clean dry enclosed space off the ground. Protect from harmful weather conditions, excessive heat, and prolonged ultraviolet light exposure.
- C. Store materials in the spaces where they will be installed for at least 48 hours before beginning installation to equalize temperature and humidity conditions.

1.06 PROJECT CONDITIONS

- A. Maintain a minimum temperature in the work area between 65 degrees and 85 degrees F for at least 48 hours before, during and for not less than 48 hours after installation. Thereafter maintain a minimum temperature of 55 degrees F in areas where work is completed. Protect materials from the direct flow of heat from hot air registers, radiators, or other heating fixtures and appliances. Refer to the manufacturer's recommendations for a complete guide to project conditions.

1.07 WARRANTY

- A. Installer will correct any material or installation defects for a period of one year after substantial completion of the project.
- B. Manufacturer will provide a minimum 10 year commercial warranty for the materials.

PART 2 – PRODUCTS

2.01 LUXURY VINYL TILE

- A. Vinyl tile will be 24"x24" x minimum .197 inch (5mm), glued down application.
- B. Vinyl tile will be equal to Shaw 4077V "Compound".

2.02 ACCESSORIES

- A. Adhesive, adhesive primer, and accessories will be as recommended by the tile manufacturer.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify substrate conditions are acceptable for product installation in accordance with manufacturer's instructions, including but not limited to moisture tests, bond test, and pH test. Document and file the pH test.
- B. Visually inspect the flooring material, adhesives, and accessories prior to installation to verify that the correct materials are present and are free from material and visual defects.
- C. Correct any unsatisfactory conditions before beginning installation.
- D. Clean surfaces of dust and foreign materials.

3.02 INSTALLATION

- A. Install per manufacturer's written recommendations considering the substrate and other applicable conditions.
- B. Consult architect for installation pattern.

3.03 PROTECTION

- A. Protect installed products from damage during construction and move-in activities.

3.04 CLEAN UP

- A. Clean the installed products as recommended.
- B. Repair and clean adjacent surfaces damaged or affected by the work.

END OF SECTION

SECTION 09653 - RESILIENT WALL BASE AND ACCESSORIES

PART 1 – GENERAL

1.01 SECTION REQUIREMENTS

- A. Provide and install resilient wall base and accessories in accordance with manufacturer's recommendations in locations indicated on plans.

1.02 SUBMITTALS

- A. Provide samples of each available color for the color to be selected by the architect.

PART 2 – PRODUCTS

2.01 WALL BASE

- A. Acceptable manufacturer's include Johnsonite, Roppe, or equal
- B. Type TS (rubber, vulcanized thermoset) or TP (rubber, thermoplastic)
- C. See finish schedule for height and cove
- D. Corners factory or job formed.

2.02 ACCESSORIES

- A. Transition, reducer, and joiner strips for flooring transitions. Colors to be selected by architect.
- B. Leveling and patching compounds and adhesive per resilient flooring manufacturer recommendations.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Clean, prepare, and treat substrates. Provide clean, dust free, level, and dry substrates for installation.
- B. Adhere wall base and accessories in place.
- C. Install wall base in maximum lengths possible.

END OF SECTION

SECTION 09681 – CARPET TILE

PART 1 GENERAL

1.01 DESCRIPTION

- A. Carpet Tile

1.02 SUBMITTALS

- A. Submit manufacturer's printed product data and warranty data to the architect for review and approval. Submittal will include material data with pictured colors and patterns. If requested also submit physical samples of each color and pattern for selection.
- B. Owner may request submittals of other carpets that cost the same as that submitted or specified. If requested the contractor will provide additional submittals and cooperate with the owner and architect until a selection has been made.

1.03 QUALITY ASSURANCE

- A. Manufacturer will be an established reputable manufacturer.
- B. Installer will be experienced with the installation of the specified products.

1.04 DELIVER, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- B. Handle and store as recommended by the manufacturer.

1.05 PLANNING

- A. Field measure each space before ordering materials.
- B. Coordinate preparation and schedule with other trades.

PART 2 – PRODUCTS

2.01 CARPET

- A. Carpet products will meet or exceed the following:
 1. Construction: multi-level pattern loop
 2. Fiber: nylon
 3. Dye method: solution dyed
 4. Primary backing: synthetic
 5. Warranty: minimum 10 year commercial
 6. Size: 24 inch x 24 inch
 7. Gauge: 1/12 inch
 8. Stitches: 9.5 per inch
 9. Pile height: 0.103 inches (2.62 mm)
 10. Total thickness: 0.240 inches (6.10 mm)
 11. Tufted weight: 20 oz.
 12. Pill test: pass

- 13: Radiant panel: class 1
- 14. NBS Smoke: less than 450
- 15. Electrostatic propensity: less than 3.5kv

2.02 MANUFACTURER

- A. Carpet will be equal to Shaw Contract, absorbed tile

2.02 ACCESSORIES

- A. Provide and install accessories as need and in accordance with carpet manufacturer's recommendations. Accessories will include but not be limited to:
 - 1. Adhesives
 - 2. Vinyl transition strips

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Examine products to assure they are in new undamaged condition.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the carpet and adhesive manufacturers for achieving the best results for the substrate under project conditions.

3.03 INSTALLATION

- A. Installation pattern to be determined by owner and architect. Installation pattern will require placement parallel and 90 degrees to walls to minimize waste.
- B. Install in accordance with manufacturer's instructions.

3.04 PROTECTION

- A. Protect installed products until completion of project. Repair or replace damaged products before substantial completion.

END OF SECTION

SECTION 09770 – WALL PANELS, INTERIOR WAINSCOT

PART 1 GENERAL

1.01 DESCRIPTION

- A. Decorative interior wall panels.

1.02 SUBMITTALS

- A. Provide manufacturer's product data sheets to architect for review and approval. Product data will clearly identify the materials, manufactured dimensions, finishes, and related information necessary for review.
- B. Submit physical samples if requested.

1.03 DELIVERY, STORAGE AND HANDLING OF MATERIALS

- A. All products are to be factory packaged in heavy cardboard cartons.
- B. All products are to be stored flat in a cool, dry place. Do not stack panels directly on the floor. Do not subject panels to moisture.

1.04 Warranty:

- A. All products shall be warranted to be free of defects for a period of 30 days from the date of delivery.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Decorative interior wall panel system will include
 1. Interlocking high density fiberboard core with factory applied primed finish, nominal 16" wide.
 2. Molding will be factory formed with chamfered and rabbet profiles. Factory primed.
 3. Finish: Federal Specification LLL-B-805 Class I Finish, A.B.P.A. PS 59-73
- B. Products will conform to the details on the drawings and will be equal to Marlite "plank and panels".

2.03 ACCESSORIES

- A. Adhesive will be C-375 Marlite Construction Adhesive meeting ASTM Specification C557 unless recommended otherwise by the panel manufacturer.
- B. Silicone Sealant will be equal to MS250 Clear or MS251 Marlite Silicone Sealant as required.

PART 3 EXECUTION

3.01 PREPARATION

- A. Panel system must be installed over a smooth, solid, flat subwall such as drywall or plywood.

3.02 CONDITIONING

- A. Cartons should be opened and allowed to acclimate to the room conditions for at least 48 hours prior to installation.

3.03 INSTALLATION

- A. Install in strict accordance with manufacturer's written instructions.
- B. Prepare and paint after installation.

END OF SECTION

SECTION 09900 - PAINTING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This section applies to paints, stains, varnishes, and similar finishes.
- B. Provide all labor, equipment, appliances, and materials to perform all operations in connection with the painting as shown on the drawings and specified herein.
- C. Paint all surfaces as specified herein to make a complete and perfect job, whether every item is specifically mentioned or not. Items not specifically mentioned shall be finished as specified for similar work. Paint all interior and exterior exposed louvers, metal, wood doors, wood window frames, and primed surfaces. Do not paint aluminum or factory finished metal except as noted.
- D. Patch painting will not be acceptable. Total affected area shall be finished.
- E. All surfaces to be painted shall be examined prior to painting. Surfaces not suitable for receiving paint shall be repaired and made acceptable in accordance with manufacturer's recommendations. Commencement of work indicates acceptance of surface.

1.02 STANDARDS

- A. Paint materials and applications shall be Recommended Type I as specified in the Standards of the Painting and Decorating Contractor of America, latest edition.
- B. Flame spread ratings of interior coatings shall be in accordance with applicable requirements of the Uniform Building Code.

1.03 SUBMITTALS

- A. Colors shall be selected by architect from full line of standard colors available from the manufacturer. Submit manufacturer's full color sample book to architect if requested during construction by architect.
- B. Submit product data for any proposed substitutions prior ordering any materials such as sealers, fillers, stains, glazes, paints, and other undercoats and finish coats as specified herein. The substituted products are only to be ordered and used if first approved by the architect.
- C. If requested by the architect any time during the project, the contractor shall submit approximately a 12"x12" sample board for the requested finishes for selection or approval purposes.
- D. Submit sample of handicapped symbols used for pavement marking indicating dimensions and colors.

1.04 STORAGE AND HANDLING

- A. Store materials and equipment in a room or rooms assigned for that purpose. The space shall be protected against damage or defacement.
- B. All paint mixing shall be done in suitable containers and all necessary precautions shall be taken to reduce fire hazards to a minimum. Upon completion of the work, the assigned storage shall be left clean.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Deliver materials required for painting in unbroken packages bearing the brand and name of manufacturer and shall be subject to inspection and approval.

- B. Deliver materials to the building in sufficient quantities so that the Work will not be delayed. No claim by the Contractor concerning unsuitability of any materials specified or inability to produce first class work with the same will be entertained unless such claim is made in writing to the Architect before the Contract is signed.
- C. The best quality materials as manufactured by any of the following manufacturers, are acceptable for use on the Work: Benjamin Moore, Sherwin Williams, Clark and Kensington, or equal. Lower grade products from these same manufacturers will not be used.

PART 3 - EXECUTION

3.01 WORKMANSHIP

- A. All workmanship shall be the very best with all materials evenly spread and smoothly flowed on without sagging or runs. All sapwood and knots shall receive a thin coat of shellac before priming. All inside woodwork shall have all nail holes and other imperfections puttied up after the first coat.
- B. No painting shall be done in dusty rooms. The painter shall sprinkle floors to allay the dust. Paint shall not be applied on either damp or wet surfaces and in no case unless the preceding coat is dry and hard. Painting done in cold weather shall be done when the temperature is at least 50 degrees F.
- C. No varnish or enamel shall be applied in rooms with temperature below 60 degrees F.
- D. Furnish and lay drop cloths in all areas where painting is being done to protect floors and other work from damage during execution of this work. Where it becomes necessary, in order to execute his own work, for the painter to remove temporary coverings placed by other contractors, painter shall replace them in the proper manner.
- E. The painter shall be responsible for any damage done to work of others and shall repair same to the satisfaction of the Architect. At painters expense, damaged materials shall be replaces if they are damaged to an extent that they cannot be restored to their original conditions.
- F. All materials shall be applied in strict accordance with the manufacturer's written recommendations. Coverage shall not be less than manufacturer's recommendations for the applied coating expressed in square foot units per volume measure.

3.02 SURFACE PREPARATION

- A. The preparation of surfaces and the application of neutralizer, primer, paint, varnishes , and other finishes shall be performed in strict accordance with the specifications of the Painting and Decorating Contractors of America for the various "Paint Systems" specified herein, unless specifically stated otherwise.
- B. Painting shall not start until base surfaces are reasonably free from foreign matter such as concrete residue, plaster, grease, oil, etc., caused by other crafts. Painting shall not start on any surface until it is found to be in proper condition to receive paint. Should any surface be found to be unsuitable to produce a proper finish, the Architect shall be notified in writing and no material shall be applied until the surfaces are made satisfactory. Application of paint to any surface shall be deemed to be acceptance of that surface and full responsibility shall be borne by the Contractor throughout the guarantee period.
- C. All woodwork to receive paint or clear finish shall be thoroughly sanded before and after each primer and undercoat.

- D. Galvanized iron shall be cleaned thoroughly with solvent to remove grease and residue on the surface. Satisfactory preparation shall be obtained with chemical washes used as directed by the manufacturer.
- E. Hardware accessories, plates, light fixtures, thermostats, and similar items in place prior to painting shall be removed during painting operations and repositioned upon completion of each space, or shall otherwise be protected.

3.03 PAVEMENT MARKINGS

- A. Apply markings as indicated in the plans. If width is not indicated in the plans striping will be 5 inches wide. Handicapped symbols will be white on a blue field with a white boarder 4 to 5 inches wide. The field without boarder will be approximately 4 feet by 4 feet.

3.04 PAINTING SCHEDULE

- A. Apply additional finish coats beyond those noted in this schedule if required for complete coverage or for uniform appearance.
- B. Exterior and interior surfaces of the building shall be finished as schedules below. Unless otherwise noted, the products of Benjamin Moore are indicated to establish an acceptable level of quality.

P-1

Exterior Ferrous Metal – railings, sign posts, doors: Allow for 2 color selections.

1. *First coat- Factory primed, or IronClad Latex Low Lustre Metal and Wood Enamel 363. Roller, brush, or spray applied.*
2. *Second and third coats- IronClad Latex Low Lustre Metal and Wood Enamel 363. Roller, brush, or spray applied. Color to be determined by architect.*

P-2

Exterior Concrete – pavement parking markings: Allow for 2 color selections.

1. *First and second coat - Safety and Zone Marking Latex M58.*

P-3

Exterior Stucco : Allow 2 color selections.

1. *First coat to unpainted stucco - Moore's Acrylic Sealer 066*
2. *Second and third coat – Moorlastic Acrylic 056*

P-4

Exterior Metal Roof Tiles - existing: Allow 1 color selection

1. *First coat to bare metal if encountered after scraping – IronClad Latex Low Lustre Metal and Wood Enamel 363. Brush applied.*
2. *Second and third coat – Moorlastic Acrylic 056. Brush applied.*

P-10

Interior Drywall, plaster, wood: Allow for up to 8 color selections.

1. *First coat - Moorecraft Superspec Latex Enamel Undercoater and Primer Sealer 253. Roller, brush, or spray applied.*
2. *Second and third coats - Moorecraft Superspec Latex Satin Enamel 274. Roller, brush, or spray applied.*

Allow for accent walls of differing colors in up to 8 rooms, selected by the owner from the 8 allowed colors.

P-11

*Interior Metal Doors and Frames:
selection. selection.*

Allow for 1 color

- 1. First Coat - factory primed*
- 2. Second and third coats - IronClad Latex Low Lustre Metal and Wood Enamel 363.
Roller, brush, or spray applied.*

P-20

Provide other quality coatings at isolated areas as needed.

END OF SECTION

SECTION 10143 –SIGNAGE

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Provide and install interior wall mounted signage as described in this section.
- B. Install exterior wall mounted signage as described in this section. Exterior wall signage is limited to cut-out letters and logo at an east facing exterior wall.
- C. Provide and install exterior pole mounted parking signs.
- D. See ramp plan for stenciled parking sign as part of pavement markings.

1.02 SUBMITTALS – INTERIOR SIGNS

- A. Submit manufacturer's literature to the architect for review and comment before ordering materials.
- B. Literature will clearly indicate how the proposed products comply with the specifications.
- C. Submit printed color charts showing the colors available from the manufacturer.
- D. Submit shop drawings if requested.

1.03 SUBMITTALS – EXTERIOR WALL SIGNS

- A. No submittals are requested initially.
- B. After the exterior signage is fabricated by others and available for inspection then submit mounting hardware information and related product information if requested.

1.04 SUBMITTALS – EXTERIOR PARKING SIGNS

- A. Submit manufacturer's literature indicating sign size, appearance, text, and materials.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Room signs will be equal to *MyDoorSign, azteca series*.
- B. Exterior wall signage provided by others.
- C. Exterior parking signs will be professionally manufactured.

2.02 INTERIOR SIGNAGE PANELS

- A. Room sign panels will be solid color one piece injection molded plastic.
- B. Panel color to be selected by architect from a minimum of 12 manufacturer's standard color selections.
- B. Panels will be approximately ½ inch thick with beveled edges and decorative relief patterned edges.
- C. Panels will be surface mountable with double sided foam tape.

2.03 INTERIOR SIGNAGE TEXT

- A. Text will with raised letters. Raised decorative borders will match the raised text color.
- B. Text color will be surface applied by the manufacturer in a contrasting color selected by architect.
- C. The text will also be written in Braille centered under the text.
- D. Text and braille, size and spacing will comply with ADA requirements for room signage.

2.04 SPECIFIC INTERIOR SIGNS FOR THIS PROJECT

A. Provide one of each sign listed below for this project.

1. "CLERK" approximately 9"x5".
2. "ASSESSOR" approximately 9"x5".
3. "TREASURER" approximately 9"x5".
4. "COUNTY MANAGER" approximately 9"x5".
5. "MEN" with accessibility symbol, approximately 8"x9".
6. "WOMEN" with accessibility symbol, approximately 8"x9".
7. "RESTROOM" with man and woman silhouette, no accessibility symbol, approximately 8"x9".

2.05 EXTERIOR WALL SIGN

A. Custom cut steel. Shop finished. Provided by with finish and with mounting studs by others. Mounted by contractor.

2.06 EXTERIOR PARKING SIGNS

A. See description on the ramp plan.

PART 3 – EXECUTION

3.01 INSTALLATION – INTERIOR

- A. Install with the bottom of the signs at 48" above the floor level.
- B. DO NOT MOUNT SIGNS ON DOORS.
- C. Location of signs will be as shown on the construction plans. Consult architect for mounting locations when there are obstructions to the location shown on the plans.

3.02 INSTALLATION – EXTERIOR WALL

- A. Owner's fabricator will provide cut out letters and logo with studs attached to the back of each character. Finished letters and logo may vary from the signage shown on the construction plans. Installer in this contract will review the fabricated letters and log with the architect to agree to any deviations from the installation location shown on the construction plans.
- B. Installer will take care to not damage the pre-finished fabrications during handling and installation.
- D. Installer will carefully align the characters and determine the location of each stud mounted to the backs of the characters.
- E. Installer will drill into the existing stucco over hollow clay masonry so that each stud is firmly cemented into place with a cement or adhesive product agreed to with the architect. Installation will leave approximately 1.5 inches (dimension to be determined with architect) between the back of each character and the face of the wall.
- F. After installation the installer will clean the wall surface and characters of dust then patch paint the stucco and characters if necessary.

3.03 EXTERIOR PARKING SIGNS, POLE MOUNTED

- A. Embed pipe as described on the ramp plan. Assure that the pipe is placed straight.
- B. Drill holes in the pipe for mounting the sign at the designated height. Align holes so that the installed sign is perpendicular to the angled parking space and not parallel to the curb.
- C. Cut top of pipe to the top of the sign height.
- D. Remove rust and surface contaminants from the pipe surface then prime and paint.
- E. Anchor sign through the pipe with corrosion resistant bolts no longer than necessary.

END OF SECTION

SECTION 10211 – TOILET COMPARTMENTS

PART 1 – GENERAL

1.01. DESCRIPTION

- A. Provide and install powder coated steel toilet and urinal enclosures.

1.02 BUILDING CODE COMPLIANCE

- A. Partitions will meet the requirements for toilet room partitions as required by 2009 ICC/ANSI A117.1 Accessible and Usable Building Facilities.

1.03 SUBMITTALS

- A. Submit to the architect the following items for review and comment before ordering materials.
 1. Manufacturer's data for the partitions, finishes, and hardware.
 2. Manufacturer's color charts showing the standard base color selection for the owner to select from.
 3. Manufacturer's shop drawings prepared for each room receiving partitions. Shop drawings will show dimensions pertaining to building code dimensional requirements.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Products will be manufactured by ASI-Global, Bradley, or equal.

2.02 PARTITION COMPONENTS

- A. Partition panels and pilasters will be hot dipped galvanized, zinc coated, or galvanized sheet metal with edges sealed and crowned. Braze corners and smooth finish.
- B. Panel and pilaster faces will be smooth. Faces will be free of pitting, visible seams, fabrication marks, stains, telegraphing of core material, and other imperfections.
- C. Core will be standard sound deadening, water resistant, honeycomb.
- D. Doors will be 1 inch thick 22 gauge steel reinforced at hinge locations and fitted with factory installed gravity hinges.
- E. Panels will be 1 inch thick 22 gauge steel reinforced for grab bars and dispensers where required.
- F. Pilasters will be 1-1/4 inch thick 20 gauge steel.
- G. Headrail will be extruded aluminum.
- H. Shoes will be 4 inches high stainless steel secured to the pilaster with a fastener.
- I. Brackets for wall attachments will be chrome plated.
- J. Hardware will be chrome plated corrosion resistant metals with tamper resistant fasteners.
 1. Hinges will be gravity type to hold doors open at approximately 15 degrees when not latched.
 2. Latch will be surface mounted.
 3. Coat hook at each door will include a rubber tipped stop.
 4. Pull will be on the inside of in-swinging doors.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine and measure work area to verify that measurements, substrates, supports, and environmental conditions are in accordance with the manufacturer's recommendations.

3.02 INSTALLATION

- A. Install per manufacturer's written recommendations including clearances to adjacent surfaces and components.
- B. Install rigid, straight, level, and plumb. Secure in position with manufacturer's recommended anchoring devices.

END OF SECTION

SECTION 10520 - FIRE PROTECTION SPECIALTIES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Provide and install fire extinguisher and cabinets/brackets as shown on the Drawings and specified herein.

1.02 QUALITY CONTROL

- A. Fire extinguishers shall comply with U.L. 711 and U.L. 299.
- B. Fire extinguishers will have chrome levers and fittings, not plastic, and will be rechargeable.

PART 2 – PRODUCTS

2.01 MANUFACTURER

- A. Fire extinguisher: 5 lb. 2A-10BC, MP5, equal to Larsens, *3 total*
- B. Cabinet: commercial grade aluminum box and door frame with clear glass or acrylic full height in the door, equal to Larsens, Cameo series.
1 surface mount, 2 recessed

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install according to manufacturer's recommendations. Mount top of extinguisher at 27" above the floor surface unless recommended otherwise by the manufacturer for ADA compliance.
- B. Clean and repair adjacent surfaces damaged by work of this section.

END OF SECTION

SECTION 10810 - TOILET ACCESSORIES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Furnish and install toilet accessories as shown on the Drawings and specified herein.

1.02 SUBMITTALS

- A. Submit manufacturer's printed description of items specified and a schedule showing location in the building for each item.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Toilet accessories shall be manufactured as noted, or approved substitute.

2.02 EQUIPMENT

- A. Soap Dispenser: Bradley 6562 (3)
- B. Towel Dispenser: Bradley 252 (3)
- C. Toilet Paper Dispenser: Bradley 505 (7)
- D. Grab Bar: Bradley 837-4, 18 inch, 36 inch, and 42 inch.
2 restrooms x 1 bar of each length in each restroom = 6 grab bars.
- E. Mirror: Bradley 781 (6)
- F. Mop and Broom holder: Bradley 9955, 48 inch (1)
- G. Diaper change table, surface mount, plastic, ASI 9012, (2)

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Coordinate work to assure proper recess sizes and locations, backing and bracing. Set items accurately, level, square and align with other elements. Verify mounting heights before installation. Provide required plates, screws, anchors and other attachment devices necessary for proper and complete installation. Use utmost care to avoid damaging accessories and finishes. all exposed screws shall be of the same finish or appearance as accessory.

3.02 CLEAN UP

- A. Clean and protect work until Substantial Completion of the Project.
- B. Clean up and remove debris, clean and repair adjacent surfaces.

END OF SECTION

SECTION 12353 - CASEWORK

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Provide all labor, material and equipment required to complete all items of cabinetry work.
- B. All work shall be done by experienced craftsmen under the supervision of capable foremen. The cabinetry work shall be done in cooperation with the work of all other trades and subsystems to produce an efficient building operation.

1.02 SUBMITTALS

- A. Contractor will submit shop drawings and/or manufacturer literature of the cabinets and hardware to the architect for review and approval. Submit laminate sample chain of full base and middle cost selection from the proposed manufacturer. Do not order materials until submittals have been reviewed and returned by the architect.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Manufactured cabinets will be equal to Legacy brand, Debut series, Executive box, Torino Oak Light fronts.
 - 1. Face frame will be solid wood 1-3/4" x 3/4" doweled, glued, and stapled.
 - 2. Center stile will be 3-1/2" x 3/4".
 - 3. Drawer will be soft closing with dovetail drawer.
 - 4. Hinges will be soft closing.
 - 5. End panels will be 1/2" plywood, not particle board, with clear finish on interior and exterior. This includes ends that are planned to be adjacent to appliances.
 - 6. Tops and bottoms will be 1/2" plywood with wood veneer and clear finish.
 - 7. Backs will be 1/2" solid plywood.
 - 8. Shelves will be 3/4" plywood full depth with clear finish.
 - 9. Toe spaces will be finished with real wood veneer panels from the cabinet manufacturer, finished to match the cabinet face.
 - 10. Pulls will be standard wire pulls with a brushed chrome or brushed aluminum finish.
- B. Countertops will be equal to Wilsonart or Formica, type 350 horizontal grade site formed laminate. Countertop edges and backsplash edges will be a standard 90 degree edge. Color/pattern will be selected by owner and architect from manufacturer's *middle priced selection that includes a textured finish*.
- C. Drawer and cabinet knobs will be equal to Liberty brand, 1.25 inch diameter "sophia knob" with a brushed chrome finish. Coordinate with owner for location of knobs in doors and drawer fronts.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install cabinets with no variations in flushness of adjoining surfaces by using concealed shims. Where casework abuts other finished work, scribe and cut for accurate fit. Provide filler strips, scribe strips, and moldings in finish to match casework face.
- B. Install cabinets without distortion so doors and drawers fit openings properly and are aligned.
- C. Install level and plumb to a tolerance of 1/8 inch in 8 feet.

- D. Fasten each cabinet to adjacent unit and to structural members of wall construction. Fasten wall cabinets through back, near top and bottom, at ends and not less than 24 inches on center.
- E. Fasten plastic laminate countertops by screwing through corner blocks in base cabinets in base units into underside of countertop. Spline and glue joints into countertops and use concealed mechanical clamps.
- F. Install a smooth narrow bead of paintable elastic caulk along the top of the backsplash to seal the backsplash to the adjacent surface behind. Caulk will be in a color to match the countertop or the wall. Take caution to minimize the amount of exposed caulk on adjacent surfaces. Tape adjacent surfaces if needed to avoid caulking outside of the joint. Leave caulk smooth and inconspicuous as possible.
- G. Install hardware and finishes per owner's and manufacturer recommendations.

3.02 CLEANUP

- A. Leave the cabinet installations free of debris, dust, and smudges, ready to use by the occupants without further finishing, adjusting or cleaning.

END OF SECTION

SECTION 21220 – CLEAN AGENT GASEOUS FIRE SUPPRESSION SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Contractor is responsible for designing and installing a pre-engineered clean agent fire suppression system *in the new records vault*.
- B. The fire suppression system will be total flooding in the designated room.
- C. System design and installation will be inspected and approved by the NM State Fire Marshall's Office, NM Construction Industries Division, and other Authorities Having Jurisdiction.
- D. System will be complete, including with fully charged cylinders, and will be totally operational at the completion of construction.

1.02 CODES AND STANDARDS

- A. Designs and installations will comply with the applicable publications of the following:
 - 1. National Fire Protection Association (NFPA) Standards
 - 2. Factory Mutual (FM) Approval Guide
 - 3. Underwriters Laboratories (UL) Inc.
 - 4. National Electrical Manufacturer's Association (NEMA) Enclosures for Industrial Controls and Systems
 - 5. US Environmental Protection Agency, Protection of Stratospheric Ozone
 - 6. Manufacturer's Design
 - 7. Authorities Having Jurisdiction

1.03 DESIGN

- A. Design will include all required and standard features of a gaseous clean agent system.
- B. System will be designed to connect to the building alarm system serving the rest of the building.

1.04 SUBMITTALS

- A. Submit the following items to the architect for review prior to purchasing materials.
 - 1. Engineered design of the system showing placement of detectors, discharge nozzles, abort stations, alarm devices, agent cylinders, piping isometrics, and related features. The engineered design will be sealed by a NM licensed engineer if required by authorities having jurisdiction.
 - 2. Product literature for detectors, switches, devices, nozzles, cylinders, and related components of the system.

PART 2 - PRODUCTS

2.01 ACCEPTABLE SYSTEM MANUFACTURERS

- A. Tyco – Ansul, Fireboy, or equal.

2.02 MATERIALS

- A. Materials will be as designated on the engineered system designs. Substitutions after design will not be made unless approved by both the system designer and the architect.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install per approved designs.
- B. Coordinate work with electrician, hvac contractor, alarm contractor, and other trades.
- C. The completed installation will be inspected by factory authorized and trained personnel. Inspection will include a full operational test of all components per the equipment manufacturer's recommendations. A system discharge may also be performed if an Authority Having Jurisdiction requires one.

3.02 COMPLETION

- A. Provide on-site training to the owner's personnel addressing operation and maintenance of the system. Training will include trouble procedures, abort procedures, safety, and related training.
- B. Submit an Operation and Maintenance Manual to the architect in a single 3-ring binder or similar. The architect will review and provide to the owner.
- C. Clean the project site of dust and debris including from concealed spaces such as attics, crawl spaces, and maintenance access spaces.

END OF SECTION

SECTION 27000 – PHONE, DATA

SECTION 29- ELECTRONIC SAFETY & SECURITY

PART 1 – GENERAL

1.01 PHONE, DATA AND ALARMS

- A. *Phone, data, and alarm systems are existing and will be altered and expanded by Sierra Communications which has installed and continues to maintain the owner's systems at other facilities.*
- B. *Phone, data, and alarm contractor will be contracted and paid by the owner.*
- C. *Coordinate work and schedule with the owner's sources. Provide line voltage power to equipment if requested.*

1.02 DOOR HOLDS

- A. *An alarm activated door release will be installed in the vault by the owner's forces. Installation will require the general contractor's forces to install a recessed junction box and conduit in the concrete block walls and concrete floor and/or concrete ceiling. Coordinate sizes, location, and installation with the owner's forces.*

PART 2 – PRODUCTS

n/a

PART 3 – EXECUTION

n/a

END OF SECTION

27000-1

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