Project Manual
Including Specifications for
the Construction of

ALEJANDRO RUIZ SENIOR CENTER REROOF – REBID
120 Kircher Street
Carlsbad, New Mexico 88220

FUNDING: New Mexico Aging and Long-Term Services Department Grant #: A20E5230

OWNER: CITY OF CARLSBAD
101 N. HALAGUENO
CARLSBAD, NEW MEXICO 88220

ARCHITECT MOLZEN CORBIN
2701 Miles Rd SE
Albuquerque, New Mexico 87106

ARCHITECT'S PROJECT NUMBER CRS201-24

September 2022

MOLZENCORBIN
ENGINEERS | ARCHITECTS | PLANNERS

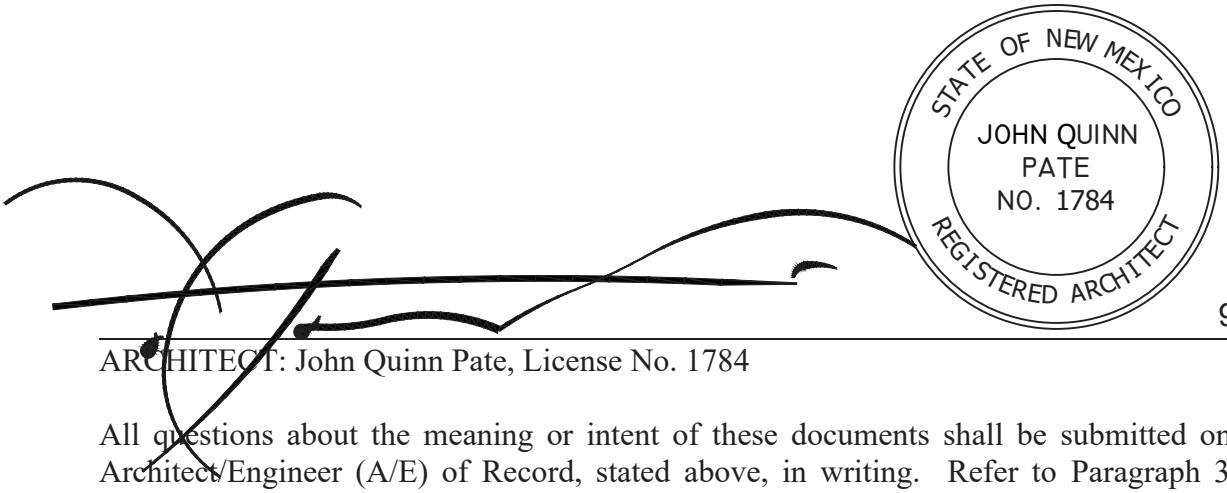
CERTIFICATIONS PAGE

MOLZEN CORBIN
2701 Miles Rd SE
Albuquerque, New Mexico 87106
505.242.5700

ARCHITECT/ LANDSCAPE ARCHITECT: John Quinn Pate, RA/RLA

ARCHITECT Jeremy Scott Alford, RA

The technical material and data contained in the specifications under the supervision and direction of the undersigned, whose seal as a Professional Architect, licensed to practice in the State of New Mexico, is affixed below.



9/1/2022

ARCHITECT: John Quinn Pate, License No. 1784 DATE

All questions about the meaning or intent of these documents shall be submitted only to the Architect/Engineer (A/E) of Record, stated above, in writing. Refer to Paragraph 3.2 of the Instructions to Bidders as to interpretations.

DIVISION 00 – BIDDING REQUIREMENTS

DIVISION 00 – CONTRACTING REQUIREMENTS

DIVISION 01 – GENERAL REQUIREMENTS

DIVISION 02 – EXISTING CONDITIONS

DIVISIONS 03 – 05 (NOT USED)

DIVISION 06 – WOOD, PLASTICS, AND COMPOSITES

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

07 54 23	Thermoplastic Polyolefin (TPO) Membrane Roofing
07 62 00	Sheet Metal Flashing and Trim
07 72 49	Roof Maintenance Fall-Protection System
07 92 00	Elastomeric Sealants

DIVISION 08 – OPENINGS (NOT USED)

DIVISION 09 – FINISHES

09 90 00	Painting and Coating

DIVISIONS 10 – 48 (NOT USED)

APPENDICES

APPENDIX A:	*NM Building Envelope Architects, LLC, Carlsbad Senior Center Existing Roof Condition Assessment, November 2021*

City of Carlsbad
101 N. Halagueno
Carlsbad, New Mexico 88220

PROJECT NAME: ALEJANDRO RUIZ SENIOR CENTER REROOF – REBID

Competitively Sealed Bids for the construction of facility reroofing, roof deck repair, and roof deck replacement .

Will be received by City of Carlsbad, City Hall, 101 N. Halagueno, Carlsbad, New Mexico 88220 at 11:00 a.m. (local time) on Wednesday, September 28, 2022 at which time Bids will be opened and publicly read aloud in the place (and address). Bids received after this date and time will be returned unopened. All interested parties are invited to attend.

Pre-Bid Conference: A non-mandatory Pre-Bid Conference meeting will be held at 11:00 a.m. (local time) on Wednesday, September 14, 2022 at the project site. A tour of the project site will follow after the meeting.

The CONTRACT DOCUMENTS may be examined at the following locations:

ARI Graphix (www.ariplans.com), 4716 McLeod NE, Albuquerque, New Mexico 87109
Construction Reporter, 4901 McLeod Rd. NE, Suite 200A, Albuquerque, New Mexico 87109
Dodge Data & Analytics www.construction.com

Copies of the CONTRACT DOCUMENTS may be obtained at ARI Graphix (www.ariplans.com), 4716 McLeod NE, Albuquerque, New Mexico 87109. Contact ARI Graphix for costs of printing CONTRACT DOCUMENTS (non-refundable) at (505) 884-0862.

TO BE PUBLISHED: September 4, 2022 and September 11, 2022 in the **Albuquerque Journal**.
TO BE PUBLISHED: September 4, 2022 and September 11, 2022 in the **Carlsbad Current-Argus**.

ARTICLE 1 – DEFINITIONS AND TERMS

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

A. **Addendum**: A written or graphic instrument issued prior to the opening of Bids which clarifies, corrects, or changes the Bidding Documents or Contract Documents. Plural: Addenda.
B. **Alternate Bid**: Amount stated in the Bid as the sum to be added to or deducted from the amount of the Base Bid, if the corresponding change in the project scope, materials, and/or methods of construction is awarded by the Owner.
C. **Base Bid**: Amount stated in the Bid as the sum for which the Bidder offers to perform the Work, excluding Alternate Bids.
D. **Bid**: The offer of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed in conformance with the Bidding Documents.
E. **Bid Lot**: A major item of Work for which a separate quotation or Bid is requested.
F. **Bidder**: One who submits a Bid directly to the Owner, as distinct from a Subcontractor, who submits a Bid to a Contractor.
G. **Bidding Documents**: The Bidding Requirements and the Contract Documents, including Drawings.
H. **Bidding Requirements**: Advertisement for Bid, Instructions to Bidders, Information Available for Bidders, the Bid Form, Supplements to the Bid Form, and portions of Addenda relating to any of these.
I. **Advertisement for Bid**: All documents, including those attached or incorporated by reference, utilized for soliciting sealed Bids (§13-1-64 NMSA 1978).
J. **Responsible Bidder**: A Bidder who submits a Responsive Bid and who has furnished, when required, information and data to prove that their financial resources, production or service facilities, personnel, service reputation, and experience are adequate to make satisfactory delivery of the construction described in the Invitation for Bid (§13-1-82 NMSA 1978).
K. **Responsive Bid**: A Bid which conforms in all material respects to the requirements set forth in the Invitation for Bid (§13-1-84 NMSA 1978).
L. **Successful Bidder**: The lowest Responsible Bidder to whom the Owner, on the basis of the Owner's evaluation, makes an award. A Successful Bidder does not become the Contractor until an agreement is signed with the Owner.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the Advertisement for Bid may be obtained from the A/E (unless another issuing office is otherwise designated). Bidding Documents may also be reviewed at the Plan Rooms designated in the Advertisement for Bid. The deposit will be refunded to Bidders who submit a bona fide Bid and return the Bidding Documents in good and complete condition within 10 calendar days after opening of Bids.

2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither the Owner nor the A/E assume responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

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

ARTICLE 3 – BIDDER'S QUALIFICATION STATEMENT

3.01 Bidders to whom award of a Contract is under consideration shall submit information and data to prove that their financial resources, production or service facilities, personnel, and service reputation and experience are adequate to make satisfactory delivery of the construction described in the Bidding Documents (§13-1-82 NMSA 1978).

ARTICLE 4 – EXAMINATION OF BIDDING DOCUMENTS AND SITE

4.01 Before submitting a Bid, each Bidder must:

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

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

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

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

ARTICLE 5 – PRE-BID CONFERENCE

5.01 The A/E of Record and Owner shall conduct a Pre-Bid Conference approximately 10 or more calendar days prior to the Bid opening date stated in the Advertisement for Bids.

5.02 The A/E of Record and their consultants, as applicable, shall be represented. Prospective Bidders, Subcontractors, and Vendors are encouraged to attend and should be prepared to ask questions regarding substitutions and/or to request clarification of the Bidding Documents. The failure of a Bidder, Subcontractor, or Vendor to attend shall be interpreted

to mean that the Bidding Documents are clear and acceptable to all nonparticipants at the Pre-Bid Conference. Such clarity and acceptability shall be presumed with respect to all Bidders.

5.03 Questions and requests for clarification are to be presented in written form. Responses will be written and issued as Addenda. No verbal response shall be binding.

ARTICLE 6 – INTERPRETATIONS AND ADDENDA

6.01 All questions about the meaning or intent of the Bidding Documents shall be submitted to the A/E in writing. Replies will be issued by Addenda mailed or delivered to all parties recorded by the A/E as having received the Bidding Documents. Questions received less than 10 days prior to the date for opening of Bids will not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

6.02 **Duty to Seek Clarification**: The law establishes the duty of clarification in order to ensure that the Owner will have the opportunity to clarify its requirements and thereby provide a level playing field to all Bidders. A Contractor proceeds at its own risk if it relies upon its own interpretation of contract terms that it believes to be ambiguous instead of asking for a clarification. Bidders and Subcontractors shall promptly notify the A/E of any ambiguity, inconsistency, or error which they may discover upon examination of the Bidding Documents or of the site and local conditions.

6.03 Addenda will be emailed with return receipt requested or otherwise sent to all who are known by the A/E to have received a complete set of Bidding Documents.

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

6.05 No Addenda will be issued later than 3 days prior to the date for receipt of Bids, except an Addendum with drawing the Invitation for Bids or one which includes postponement of the date for receipt of Bids.

6.06 Each Bidder shall ascertain, prior to submitting the Bid, that the Bidder has received all Addenda issued, and shall acknowledge their receipt on the Bid Form.

ARTICLE 7 – BID SECURITY/BID BOND

7.01 Bid Security in an amount equal to at least 5% of the amount of the Bid shall be a bond provided by a surety company authorized to do business in this State, or the equivalent in cash, a cashier's check, or otherwise supplied in a form satisfactory to the Owner (§13-1-146 NMSA 1978). All bonds shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies", as published in federal

Circular 570 by the Audit Staff Bureau of Accounts, United States Treasury Department (§13-4-18 NMSA 1978).

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

7.03 The Owner will have the right to retain the Bid Security of Bidders to whom an award is being considered until either (a) the Contract has been executed and bonds have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn, or (c) all Bids have been rejected.

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

7.05 If a Bidder is permitted to withdraw their Bid before award, no action shall take place against the Bidder or the Bid Security (§13-1-147B NMSA 1978).

ARTICLE 8 – CONTRACT TIMES

8.01 The number of days within which, or the dates by which the Work is to be substantially completed and ready for use are as set forth in the Bid Form.

ARTICLE 9 – LIQUIDATED DAMAGES

9.01 Provisions for Liquidated Damages, if any, are set forth in the Bid Form.

ARTICLE 10 – SUBSTITUTE MATERIAL AND EQUIPMENT

10.01 The Contract, if awarded, will be on the basis of material and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" items.

10.02 If the Contractor bases their Bid on a substitute or an "or-equal" product, they do so at their own risk. In submitting a Bid, the Contractor agrees to furnish materials, equipment, and products that are acceptable to the A/E for the price listed in the Bid.

10.03 Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or-equal" item of material or equipment may be furnished or used by the Contractor, if acceptable to the A/E, application for such acceptance will not be considered by the A/E until after the "effective date of the Contract".

10.04 The procedure for submittal of any such application by the Contractor and consideration by the A/E is set forth in the Contract Documents.

ARTICLE 11 – SUBCONTRACTORS

11.01 The Bidder shall list the Subcontractors or material suppliers he proposes to use for all trades or items on the Subcontractor listing form. If awarded the contract, the Bidder shall use the firm listed, or themselves if "General Contractor" has been listed, unless a request for a change or substitution is approved by the A/E and the Owner for any reason as outlined herein.

11.02 The A/E or the Owner shall consider any request for a change in the listed firms, if the Bidder can furnish evidence of being able to perform the Work in a manner more satisfactory and beneficial to both the Owner and the Bidder by not using the listed firm. Satisfactory reasons for a substitution may include the inability to bond or lack of evidence of being able to furnish acceptable materials on schedule. Also, if the Bidder has made a legitimate error in listing a low Subcontractor, a request for substitution, made after the Bid opening with the A/E and the Owner's approval, will be considered. The proof of error must be conclusive, based upon the approval of said evidence by the listed Subcontractor or material supplier and/or any other confirmation satisfactory to the A/E or the Owner.

11.03 The Bidder shall not list themselves as the supplier or as the Subcontractor for any trade unless he has previously performed work of this type or can prove to the A/E and the Owner's satisfaction that he actually has, or will obtain, fully adequate facilities and plans to perform the Work with their own forces.

11.04 Omission or non-compliance with the intent of the Subcontractor List will be grounds for considering a Bid as **nonresponsive**.

11.05 Prior to the award of the Contract, the A/E will notify the Bidder in writing if either the Owner or the A/E, after due investigation and written findings of fact, has reasonable and substantial objection to any person or organization on such list. If the Owner or A/E has reasonable and substantial objection to any person or organization on such list and refuses in writing to accept such person or organization, the Bidder may, at their option, (1) withdraw their Bid, or (2) submit an acceptable substitute Subcontractor with no increase in their Bid Price. In the event of withdrawal under this Paragraph, Bid Security **will not** be forfeited.

11.06 The Successful Bidder shall, within 7 calendar days of notice of the award of a Contract for the Work, submit the following information to the A/E: (1) A signed list of the proprietary names and the suppliers of principal items or systems of materials and equipment proposed for the Work; and (2) A list signed by all Subcontractors proposed for the principal portions of the Work in accordance with the Subcontractors Listing form submitted with the Bid.

11.07 The Successful Bidder will be required to establish to the satisfaction of the A/E and the Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

11.08 Persons and organizations proposed by the Bidder and to whom the Owner and the A/E have made no reasonable objection under the provisions of Paragraph 11.06 must be used on the Work for which they were proposed and shall not be changed except with the written consent of the A/E and the Owner.

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

11.10 The Bidder is specifically advised that any person, for, or other party to whom it is proposed to award a subcontract under this Bid must be acceptable to the Owner after verification by the Funding Agency of the current eligibility status.

ARTICLE 12 – PREPARATION OF BID

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

12.02 All Blanks on the Bid Form shall be filled in by typewriter or manually in ink.

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

12.04 Alterations and erasures must be initialed by the signer of the Bid.

12.05 All requested Additive or Deductive Alternate Bids shall be bid. If no change in the Base Bid is required, enter "**No Change**".

12.06 Where there are two or more major items of Work (identified as "Bid Lots") for which separate quotations are requested, the Bidder shall submit quotations for all items, unless otherwise specified.

12.07 Each copy of the Bid shall include the complete name of the Bidder and a statement that the Bidder is a sole proprietor, a partnership, a corporation, or some other legal entity. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the applicable New Mexico Certificate of Incorporation number or Certificate of Authority number. The Bid shall include the current Contractor's license number and type. A Bid submitted by an agent shall have a current Power of Attorney attached certifying the agent's authority to bind the Bidder.

12.08 The Bid shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

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

ARTICLE 13 – BASIS OF BID

13.01 Lump Sum: Bidders shall submit a Bid on a Lump Sum basis as set forth in the Bid Form.

13.02 Unit Price: Bidders shall submit a Bid on a Unit Price basis for each item of Work so listed in the Bid Schedule.

13.03 Allowances: See General Requirements Section 01 21 00 for Cash Allowances and Utility Service Allowances.

ARTICLE 14 – SUBMITTAL OF BID

14.01 All Bidders who are submitting a Bid on this Project are required to submit the following documents:

- Bid Form.
- Bid Bond.
- Resident Contractor Certificate issued by the Taxation and Revenue Department if seeking preference.
- Resident Veteran Contractor Certificate issued by the Taxation and Revenue Department and the Resident Veteran Preference Certification form, if seeking preference.
- Subcontractor List.
- Bidder's Qualifications Form.
- Non-Collusion Affidavit of Prime Bidder.

14.02 Bids shall be submitted at the time and place indicated in the Advertisement for Bid in an opaque sealed envelope marked with the Project title and name and address of the Bidder and accompanied by the aforementioned documents.

14.03 The envelope shall be addressed to the Owner as addressed on the Bid Form. The following information shall be provided on the front lower left corner of the Bid envelope: Project Title, date of opening, and time of opening. If the Bid is sent by mail, the sealed envelope shall have the notation "**SEALED BIDS ENCLOSED**" on the face thereof.

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

14.05 The Bidder shall assume full responsibility for timely delivery of Bids including those Bids submitted by mail. Hand-delivered Bids shall be submitted to the Owner or their designee and will be clocked in at the time received, which must be prior to the time specified. Bids will then be held for public opening.

14.06 Oral, telephonic, or electronic Bids are invalid and will not receive consideration.

ARTICLE 15 – MODIFICATION AND WITHDRAWAL OF BID

15.01 A Bid containing a mistake discovered before Bid Opening may be modified or withdrawn by a Bidder prior to the time set for Bid Opening by delivering written or telegraphic notice

to the location designated in the Advertisement for Bid as the place where Bids are to be received.

15.02 Bid Security shall be in an amount sufficient for the Bid as modified or resubmitted in conformance with Section 7.02.

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

15.04 After Bid Opening, no modifications in Bid Prices or other provisions of Bids shall be permitted. A low Bidder alleging a material mistake of fact which makes their Bid nonresponsive may be permitted to withdraw their Bid if:

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

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

Any decision by the Owner to permit or deny the withdrawal of a Bid on the basis of a mistake contained therein shall be supported by a determination setting forth the grounds for the decision. If withdrawal is permitted, Bid Security **will not** be forfeited (§13-1-106 NMSA 1978).

ARTICLE 16 – OPENING OF BIDS

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

ARTICLE 17 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

17.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return Bid Security prior to the end of this period.

ARTICLE 18 – BID EVALUATION AND AWARD

18.01 The Owner shall have the right to waive **technical irregularities** in the form of the Bid of the low Bidder which do not alter the price, quality, or quantity of the construction Bid (§13-1-132 NMSA 1978).

18.02 It is the intent of the Owner to award a contract to the lowest responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. The unreasonable failure of a Bidder to promptly supply information in connection with an inquiry with respect to responsibility is grounds for a determination that the Bidder is not a responsible Bidder (§13-1-133 NMSA 1978).

18.03 If the Base Bid is within the amount of funds available to finance the construction contract, contract award will be made to the responsible Bidder submitting the low Base Bid; except

that, if sufficient funds are available to fund Alternate Bids, the Owner may award the contract to the responsible Bidder submitting the low combined Bid within the amount of funds available (Base Bid plus or minus Alternates). If the award is based on Alternates, the Owner shall accept them in the numerical order in which they are listed in the Bid Form, as produces a net amount which is **within** the available funds.

18.04 If the lowest responsible Bid has otherwise qualified, and if there is no change in the original terms and conditions, the lowest Bidder may negotiate with the Owner for a lower total Bid in order to avoid rejection of all Bids for the reason that the lowest bid was up to 10% higher than budgeted project funds. Such negotiation shall not be allowed if the lowest Bid was more than 10% over budgeted project funds (§13-1-105 NMSA 1978).

18.05 Discrepancies in the Bid Form between words and figures will be resolved in favor of words. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies in the multiplication of units of Work and unit prices will be resolved in favor of the correct multiplication sum between the units of work and the unit prices.

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

18.07 Contracts solicited by competitive sealed Bids require that the Bid amount exclude the applicable state gross receipts taxes or applicable local option tax but that the Owner shall be required to pay the applicable tax, including any increase in the applicable tax becoming effective after the date the contract is entered into. The applicable gross receipt tax or applicable local option tax calculated at the rate in effect at the time of payment, shall be shown as a separate amount on each billing or request for payment made under the contract (§13-1-108 NMSA 1978).

ARTICLE 19 – RESIDENT CONTRACTOR AND RESIDENT VETERAN CONTRACTOR PREFERENCES

19.01 Resident Contractor means a person that has a valid resident contractor certificate issued by the Taxation and Revenue Department, but does not include a resident veteran contractor; and resident veteran contractor means a person that has a valid resident veteran contractor certificate issued by the Taxation and Revenue Department. No Contractor shall be treated as a resident contractor or resident veteran contractor in the awarding of public works contracts by the Owner unless the Contractor has qualified with the State Purchasing Agent as a resident contractor or resident veteran contractor pursuant to Section 13-1-22 NMSA 1978 and has been issued a certification number by the State Purchasing Agent.

19.02 For the purposes of awarding a public works contract using a formal Bid process, a public body shall deem a Bid submitted by: (a) a resident contractor to be 5% lower than the Bid actually submitted; (b) a resident veteran contractor with annual gross revenues of up to three million dollars ($3,000,000) in the preceding tax year to be 10% lower than the Bid actually submitted.

19.03 To receive a New Mexico Resident Preference or a New Mexico Resident Veteran Contractor preference advantage, as applicable pursuant to §13-4-2 NMSA, must submit a valid resident contractor certificate or valid resident veteran contractor certificate issued by the taxation and revenue department with their sealed Bid.

ARTICLE 20 – IDENTICAL BIDS

20.01 When two or more of the Bids submitted are identical in price and are the low Bid, the Purchasing Agent or the Owner may:

A. Award pursuant to the multiple source award provisions of §13-1-153 and §13-1-154 NMSA 1978.

B. Award to a resident Contractor if the identical low Bids are submitted by a resident contractor and a nonresident Contractor.

C. Award by lottery to one of the identical low Bidders.

E. Reject all Bids and resolicit Bids for the required construction (§13-1-110 NMSA 1978).

ARTICLE 21 – NOTICE OF CONTRACT REQUIREMENTS BINDING ON BIDDER

21.01 In submitting this Bid, the Bidder represents that he has familiarized themselves with the nature and extent of the Conditions of the Construction Contract (General, Supplementary, and other Conditions) dealing with federal, state and local requirements which are a part of these Bidding and Contract Documents.

21.02 Laws and Regulations: The Bidder's attention is directed to all applicable federal and state laws, local ordinances and regulations and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the contract throughout, and will be deemed to be included in the Contract the same as though herein written out in full.

ARTICLE 22 – REJECTION OR CANCELLATION OF BIDS

22.01 An Invitation for Bid may be canceled, or any or all Bids may be rejected in whole or in part, when it is in the best interest of the Owner. A determination containing the reasons therefore shall be made part of the Project file (§13-1-131 NMSA 1978). Bid Security for rejected Bids shall be returned to the Bidder.

ARTICLE 23 – PROTESTS

23.01 Any Bidder, Offeror, or Contractor who is aggrieved in connection with this procurement (Bid) may protest to the Owner's Purchasing Agent in accordance with the requirements of the Owner's Procurement Regulations and the State Procurement Code. The protest should be made in writing within 24 hours after the facts or occurrences giving rise thereto, but in no case later than 15 calendar days after the facts or occurrences giving rise thereto (§ 13-1-172 NMSA 1978).

23.02 In the event of a timely protest under the Owner shall not proceed further with the procurement unless the Owner makes a determination that the award of contract is necessary to protect substantial interests of the Owner (§13-1-173 NMSA 1978).

23.03 The Owner or their designee shall have the authority to take any action reasonably necessary to resolve a protest of an aggrieved Bidder, Offeror, or Contractor concerning a procurement. This authority shall be exercised in accordance with adopted regulations, but shall not include the authority to award money damages or attorneys' fees (§13-1-174 NMSA 1978).

23.04 The Owner or their designee shall promptly issue a determination relating to the protest. The determination shall:

A. State the reasons for the action taken; and
B. Inform the protestant of the right to judicial review of the determination pursuant to §13-1-183 NMSA 1978.

23.05 A copy of the determination issued under § 13-1-175 NMSA 1978 shall immediately be mailed to the protestant and other Bidders or offerors involved in the procurement (§13-1-176 NMSA 1978).

ARTICLE 24 – NOTICE OF AWARD

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

ARTICLE 25 – CANCELLATION OF AWARD

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

ARTICLE 26 – POST-BID INFORMATION

26.01 Submittals to A/E: Within 15 days after Notice of Award, the successful Bidder shall submit the following to the A/E:

A. The required bonds and certificates of insurance.
B. The requirements under Paragraph 11.06.
C. A brief resume of the successful Bidder's Superintendent.

26.02 Return of Bid Security**:** All Bid Security in the form of checks, except those of the two lowest Bidders, will be returned promptly following the opening and checking of the Bids. The retained Bid Security of the unsuccessful of the two lowest Bidders, if in the form of a check, will be returned within 15 days following the award of the contract. The retained Bid Security of the Successful Bidder, if in the form of a check, will be returned after a satisfactory contract bond has been furnished and the contract has been executed. Bid Securities in the form of Bid Bonds will be returned only upon the request of the

unsuccessful Bidder, but will be released by the Purchasing Agent after the Notice of Award is sent by the Owner.

ARTICLE 27 – EXECUTION AND APPROVAL OF CONTRACT

27.01 The Contract shall be signed by the Successful Bidder and returned, together with both the Contract Bonds and Certificate of Insurance, within 15 calendar days after the date of the Notice of Award.

ARTICLE 28 – FAILURE TO EXECUTE CONTRACT

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

28.02 If the Contract is not executed by the Owner within 30 days following receipt from the Bidder of the signed Contract, with Bonds and Certificates, the Bidder shall have the right to withdraw their Bid without penalty. No Contract shall be effective until it has been fully executed by all of the parties thereto.

ARTICLE 29 – NOTICE TO PROCEED

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

ARTICLE 30 – OTHER INSTRUCTIONS TO BIDDERS

30.01 This Project is funded in whole by funds provided by the State of New Mexico and the Department of Aging and Long-Term Services Grant # A20E5230 and is subject to applicable state procurement and public works statutes and regulations promulgated by the funding agency and the Owner

Appendix A: *NM Building Envelope Architects, LLC, Carlsbad Senior Center Existing Roof Condition Assessment, November 2021*

None.

PROJECT: ALEJANDRO RUIZ SENIOR CENTER REROOF – REBID

THIS BID IS SUBMITTED TO: City of Carlsbad
101 N. Halagueno
Carlsbad, New Mexico 88220

1.01 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with the Owner in the form included in the Bidding Documents to perform and furnish all Work as specified or indicated in the Bidding Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.

1.02 The Bidder accepts all of the terms and conditions of the Invitation for Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid Security and other Bidding Documents. This Bid will remain subject to acceptance for 30 days after the day of the Bid opening. The Bidder shall sign and submit the Agreement between Owner and Contractor (hereinafter called Agreement) with the Bonds and other documents required by the Bidding Requirements within 15 calendar days after the date of the Owner's Notice to Award.

1.03 In submitting this Bid, the Bidder represents, as more fully set forth in the Agreement, that:

A. The Bidder has examined copies of all the Bidding Documents and of the following Addenda (receipt of all which is hereby acknowledged):

No.: _____ Date: _____ No.: _____ Date: _____

No.: _____ Date: _____ No.: _____ Date: _____

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

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

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

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

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

2.01 A Bid must be submitted on all Bid Items. Segregated Bids will not be accepted.

The Bidder will complete the Work for the following price **(**s) excluding applicable gross receipts taxes**:**

A. LUMP SUM BID (exclusive of Gross Receipts Tax*)

BASE BID

_____(use words)

($_____**)** (use figures)

* Gross Receipts Tax on the Bid amount(s) above at current scheduled rate for project. Municipality or County is 7.5208%. Amount shall not be included in Bid.

B. UNIT PRICE ITEMS (exclusive of Gross Receipts Tax*)

ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE	BID AMOUNT
Roof Deck Repair	SF	6,000	$	$
Roof Deck Replacement	SF	6,000	$	$

* All Specific Utility Service Allowances and Cash Allowances are included in the amounts Set forth above. Gross Receipts Tax on the Bid amount(s) above at current scheduled rate For project. Municipality or County Is 7.5208%. Amount shall not be included in Bid.

3.01 The Bidder agrees that:

A. The Work to be performed under this Contract shall be commenced not later than 10 consecutive days after the date of written Notice to Proceed, and that Substantial Completion shall be achieved not later than 90 calendar days after the date of written Notice to Proceed, except as hereafter extended by valid written Change Order by the Owner.

B. Should the Contractor neglect, refuse, or otherwise fail to complete the Work within the time specified, the Contractor agrees, in partial consideration for the award of this Contract, to pay to the Owner the amount of One Hundred Dollars and 00/100 ($ 100.00) per consecutive calendar day, not as a penalty, but as liquidated damages for such breach of the Contract.

C. The above prices shall include all labor, materials, removal, overhead, profit, insurance, (excluding applicable taxes), etc., to cover the finished work of the several kinds called for. Changes shall be processed in accordance with the Contract Documents.

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

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

A. Bid Bond,

B. Subcontractor List,

C. Bidder's Qualifications Form,

D. Non-Collusion Affidavit,

E. New Mexico Resident Contractor Preference Certificate, or

F. New Mexico Resident Veteran Contractor Preference Certificate and New Mexico Resident Veteran Contractor Certification Form.

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

6.01 This Bid is submitted by:

If Bidder is:

An Individual:

Name (typed or printed): _____

By: _____

(Individual's signature)

Doing business as: _____

A Partnership:

Partnership Name: _____

By: _____

(Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed): _____

A Corporation:

Corporation Name: _____

(SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____

(Signature -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(CORPORATE SEAL)

Attest: _____

A Joint Venture:

Name of Joint Venture: _____

First Joint Venturer Name: _____

(SEAL)

By: _____

(Signature of first joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Second Joint Venturer Name: _____

(SEAL)

By: _____

(Signature of second joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

Bidder's Business Address: _____

_____

Phone No.: _____ Fax No.: _____

E-mail: _____

SUBMITTED on _____, 20____.

6.02 Contractor License Information

New Mexico Contractor's License Number: _____

License Classification(s): _____

New Mexico Department of Workforce Solutions Registration Number: _____

Federal Identification Number (FEIN #): _____

6.03 Preferences

A. Resident Contractor Preference:

Is Bidder claiming Resident Contractor Preference? _____

If Yes, provide a copy of your Resident Contractor Certificate issued by the Taxation and Revenue Department.

B. Resident Veteran Contractor Preference:

Is Bidder claiming Resident Veteran Contractor Preference? _____

If Yes, provide a copy of your Resident Veteran Contractor Certificate issued by the Taxation and Revenue Department and the Resident Veterans Preference Certification form.

The “Performance and Payment Bond” will be AIA Document A310™–2010, a copy of which may be purchased from a local AIA office.

NEW MEXICO SUBCONTRACTOR'S FAIR PRACTICE ACT / LISTING OF SUBCONTRACTORS AND SUBCONTRACTOR'S LISTS

1. This project is subject to the provisions of the State of New Mexico Subcontractor's Fair Practice Act.

2. Listing Threshold: List Subcontractors for amounts exceeding the listing threshold. The listing threshold is $5,000.00 or 1-1/2% of the A/E's estimate, whichever is greater. For purposes of this Project the threshold is **$7,500**.

3. Portion of project to which requirements apply: Complete Project.

4. For each category of the project, which the BIDDER will be subcontracting for an amount exceeding the listing threshold indicated above, the BIDDER shall define the subcontracting categories and list only one Subcontractor for each category. The listing shall be in the format indicated on the following page, and shall be completed and submitted with the Bid.

5. No CONTRACTOR whose Bid is accepted shall sublet or subcontract any portion of the Work of the Project in an amount exceeding the threshold amount given above, where the original Bid Amount did not designate a Subcontractor, unless 1) the CONTRACTOR received no Bid for that category (note: the BIDDER must designate on the list of Subcontractors that "no Bid was received"), or 2) the Work is pursuant to a Change Order that causes changes or deviations from the original Contract.

6. No CONTRACTOR whose Bid is accepted shall substitute any Subcontractor in place of the Subcontractor listed in the Bid except as provided for in the Subcontractor's Fair Practice Act.

7. Any changes or additions of Subcontractors shall be promptly reported to the A/E in writing within 2 calendar days of the known change or addition to the submitted List of Project Subcontractors in the Bid.

8. All Subcontractors with work in excess of $60,000 must be registered with the New Mexico Department of Workforce Solutions, Labor Enforcement. Include the total of the subcontracted work and the Subcontractor's New Mexico Department of Workforce Solutions Registration Number, if work is in excess of $60,000.

Subcontract Category *
Estimated Value of Work*
Subcontractor's Name*
Business Location *
Phone Number
E-mail Address
Federal Id No. (FEIN #)
NM Contractor's License No.
License Categories
New Mexico Dept. of Workforce Solutions Registration No.**
Subcontract Category *:
Estimated Value of Work*
Subcontractor's Name*
Business Location *
Phone Number
E-mail Address
Federal Id No. (FEIN #)
NM Contractor's License No.
License Categories
New Mexico Dept. of Workforce Solutions Registration No.**
Subcontract Category *:
Estimated Value of Work*
Subcontractor's Name*
Business Location *
Phone Number
E-mail Address
Federal Id No. (FEIN #)
NM Contractor's License No.
License Categories
New Mexico Dept. of Workforce Solutions Registration No.**

* *Information required at time of Bid Submission*

** Required only if value of work is in excess of $60,000

(Use additional pages, as necessary)

Subcontract Category *
Estimated Value of Work*
Subcontractor's Name*
Business Location *
Phone Number
E-mail Address
Federal Id No. (FEIN #)
NM Contractor's License No.
License Categories
New Mexico Dept. of Workforce Solutions Registration No.**
Subcontract Category *:
Estimated Value of Work*
Subcontractor's Name*
Business Location *
Phone Number
E-mail Address
Federal Id No. (FEIN #)
NM Contractor's License No.
License Categories
New Mexico Dept. of Workforce Solutions Registration No.**
Subcontract Category *:
Estimated Value of Work*
Subcontractor's Name*
Business Location *
Phone Number
E-mail Address
Federal Id No. (FEIN #)
NM Contractor's License No.
License Categories
New Mexico Dept. of Workforce Solutions Registration No.**

* *Information required at time of Bid Submission*

** Required only if value of work is in excess of $60,000

(Use additional pages, as necessary)

STATEMENT OF BIDDER'S QUALIFICATIONS

All questions must be answered. The data given must be clear and comprehensive. This statement must be notarized.

1. Name of Bidder: _____

2. Business Address: _____

   _____

   _____

3. When Organized : _____

4. Bidder is a (an) : _____
   (Individual - Partnership - Corporation)

   The full name and addresses of all persons interested in this proposal as partners and/or principal(s) are: If business is carried out in any other name(s) than that of the principal(s) or partner(s), also state such name(s) and address(es).

   _____

   _____

CORPORATION

Corporation is incorporated in the State of: _____

President is: _____

Treasurer is: _____

Place of Business: _____

_____

5. How many years have you been engaged in the contracting business under your present firm or trading name? _____

6. Financial Statement: (Submit upon request after Bid Opening.)

7. Credit Available for this Contract: $_____

8. Contracts Now on Hand, Gross Amounts: $_____

9. Have you ever refused to sign a Contract at your original Bid? _____

10. Have you ever defaulted on a Contract? _____

11. Remarks: _____

_____

12. Will you, upon request, furnish any other information that the Owner may require? _____

13. The undersigned hereby authorizes and requests any person to furnish any information requested by the Owner in verification of the recitals comprising this Statement of Bidder's Qualifications.

Date at _____ this _____ day of _____20___

Name of Bidder: _____

By: _____

Title: _____

STATE OF_____)

COUNTY OF_____)

_____, being duly sworn, deposes and says

they are _____ of _____

and that the answers to the foregoing questions and all statements therein contained are true and correct.

_____
(Name of Bidder)

Sworn to before me this: _____ Day of _____, 20___

_____
NOTARY PUBLIC

My commission expires: _____

NON-COLLUSION AFFIDAVIT OF PRIME BIDDER / SUBCONTRACTOR

STATE OF NEW MEXICO

COUNTY OF _____

_____, being first duly sworn, deposes and says that:

1. They / Them are _____ of _____,
   (title) (company)
   the Bidder that has submitted the attached Bid;

2. They are fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

3. Such Bid is genuine and is not a collusive or sham Bid;

4. Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest including this affiant, has in any way colluded, conspired, connived or agreed directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from Bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communications or conference with any other Bidder, firm or person to fix price or prices in the attached Bid or of any other Bidder, or to fix overhead, profit or cost element of the Bid Price or the Bid Price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement and advantage against the *[owner]* or any person interested in the proposed Contract; and

5. The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

I am/the Bidder is not indebted to the *[Owner]* in any form or manner.

Signature: _____ Date: _____

Title: _____ Witness: _____

Notary: _____

My commission expires: _____

RESIDENT VETERANS PREFERENCE CERTIFICATION FORM

_____ (NAME OF CONTRACTOR) hereby certifies the following in regard to application of the resident veterans' preference to this procurement:

"I declare under penalty of perjury that my annual gross revenues in the preceding tax year beginning January 1 and ending December 31 is less than three million dollars ($3,000,000) allowing me a 10% preference discount on this solicitation. "

"I agree to submit a report, or reports, to the State Purchasing Division of the General Services Department declaring under penalty of perjury that during the last calendar year starting January 1 and ending on December 31, the following to be true and accurate:

"In conjunction with this procurement and the requirements of this business' application for a Resident Veteran Business Preference/Resident Veteran Contractor Preference under Section 13-4-2 NMSA 1978, when awarded a Contract which was on the basis of having such veterans preference, I agree to report to the State Purchasing Division of the General Services Department the awarded amount involved. I will indicate in the report the award amount as a purchase from a public body or as a Public Works Contract from a public body as the case may be.

"I understand that knowingly giving false or misleading information on this report constitutes a crime."

"I declare under penalty of perjury that this statement is true to the best of my knowledge. I understand that giving false or misleading statements about material fact regarding this matter constitutes a crime."

_____

(Signature of Business Representative)* (Date)

*Must be an authorized signatory for the Business.

The representations made in checking the boxes constitutes a material representation by the business that is subject to protest and may result in denial of an award or unaward of the procurement involved if the statements are proven to be incorrect.

To receive this preference, Bidder must also submit a copy of their Resident Veteran Contractor Certificate issued by the Taxation and Revenue Department

NOTICE OF AWARD

TO: _____ DATE: _____

PROJECT: ALEJANDRO RUIZ SENIOR CENTER REROOF – REBID

Ladies and Gentlemen:

This letter is to advise you that the governing authority at its _____ meeting, approved the construction for the above-referenced project. Pursuant to this approval, the procurement office has determined that your firm is the apparent Successful Bidder. Therefore, your firm has been awarded the Construction Contract for the above-referenced project.

The Contract Price of your Contract is as follows:

Base Bid: $_____
Alternate Nos. __ to ___: $_____
Contract Total: $_____

Five copies of each of the proposed Contract Documents (except Drawings) will be provided to you by the A/E of Record for execution. Sets of the Drawings are available for your use; please make arrangements for pick-up from the Architect's Office.

You must comply with the following conditions precedent within fifteen calendar days of the date of this Notice of Award, which shall be _____, 20___.

1. You must deliver to the Architect of Record, five fully executed counterparts of the Agreement including all Contract Documents. Each of the Contract Documents must bear your signature on the appropriate page.

2. You must deliver with the executed agreement the Performance and Payment Bond, Rider to Bonds, Agent's Affidavit and Certificate of Insurance.

3. (*List other conditions precedent; if none, write "none".)

Please be advised that no Contract with the Owner is legal and binding upon the Owner until it is executed by the Mayor / County Commission Chairman and other signatures listed in the Contract.

Failure to comply with these conditions within the time specified will entitle the Owner to consider your Bid abandoned, to annul this Notice of Award, and to declare your Bid Security forfeited, to the extent of actual damages.

Within 30 days after you comply with these conditions, the Owner will return to you one fully signed counterpart of the Agreement.

_____
(Owner)

_____
(Authorized Signature)

_____
(Title)

Copy: A/E of Record
Local Government Division, DFA
Project File

THIS AGREEMENT is by and between the City of Carlsbad ("Owner")

and the _____("Contractor")

for the following **PROJECT**:

ALEJANDRO RUIZ SENIOR CENTER REROOF – REBID

_____("A/E of Record")

WHEREAS, (funding authority) has funded the above-referenced Project pursuant to (Grant Number); and (Grant Number/chapter and year of legislation or other source of funding);and

WHEREAS, the Owner, through its Mayor, upon approval of the governing body, is authorized to enter into a Construction Contract for the Project pursuant to §13-1-100 NMSA 1978; and

WHEREAS, the Owner has let this Contract according to the established state and local purchasing procedures for contracts of the type and amount let; and

WHEREAS, construction of this Project was approved by the governing body at its meeting of

_____, 20_____;

The OWNER and the CONTRACTOR agree as set forth below:

ARTICLE 1 – THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, the Conditions of the Contract (General, Supplementary, and other Conditions), the Drawings, the Specifications, all Addenda issued prior to and all Modifications issued after execution of this Agreement. These documents form the Contract, and all are as fully a part of the Contract as if attached to this Agreement or repeated herein. An enumeration of the Contract Documents appears in Article 9 of this Agreement.

ARTICLE 2 – THE WORK

The Contractor shall perform all the Work required by the Contract Documents for
(Here insert the caption descriptive of the Work as used on other Contract Documents.)

ARTICLE 3 – TIME OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

The Work to be performed under this Contract shall be commenced not later than 10 consecutive calendar days after the date of written notice to proceed. Substantial completion shall be achieved not later than *_____ calendar days after the date of written notice to proceed, except as hereafter extended by valid written Change Order by the Owner.

Should the Contractor neglect, refuse, or otherwise fail to complete the Work within the time specified in this article, the Contractor agrees, in partial consideration for the award of this Contract, to pay to the Owner the amount of *_____ Dollars ($_____) per consecutive calendar day, not as a penalty, but as liquidated damages for such breach of this Contract.

ARTICLE 4 – CONTRACT SUM

The Owner shall pay the Contractor in current funds for the performance of the Work, subject to additions and deductions by Change Order as provided in the Contract Documents, the Contract Sum of_____.

The Contract Sum is determined as follows: (State here the Base Bid or other Lump Sum amount, accepted Alternates, Bid Lots and Unit Prices, as applicable) plus applicable Gross Receipts Tax at the scheduled rate at the time each progress payment is made.

ARTICLE 5 – PROGRESS PAYMENTS

Based upon Applications for Payment submitted to the A/E by the Contractor and Certificates for Payment issued by the A/E, the Owner shall make progress payments on account of the Contract Sum to the Contractor for the period ending the 25th day of the month as stipulated in §13-1-158 and §57-28-5 NMSA 1978.

ARTICLE 6 – FINAL PAYMENT

Unless good cause exists, final payment, constituting the entire unpaid balance of the Contract Sum, shall be paid by the Owner to the Contractor within 30 calendar days after notification of the Owner by the A/E that all deficiencies to the Contract Documents that were noted during the substantial completion inspection and listed on the attachment to the certificate of substantial completion have been corrected, and provided the Contract has been fully performed and final certificate for payment has been issued by the A/E. In addition, the Contractor shall provide to the Owner a certified statement of release of liens (AIA Document G706A or other approved form) and consent of surety.

ARTICLE 7 – GENERAL AND SPECIAL PROVISIONS

7.1 This Agreement shall be governed exclusively by the provisions hereof and by the laws of the State of New Mexico as the same from time to time exist.

7.2 Terms used in this agreement which are defined in the Conditions of the Contract shall have the meanings designated in those Conditions.

7.3 As between the parties to this Agreement: as to all acts or failures to act by either party to this Agreement, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in all events not later than the relevant Date of Substantial Completion of Work; and as to any acts or failures to act occurring after the relevant Date of Substantial Completion, not later than the date of the Owner's approval of the Final Certificate of Payment.

7.4 The Contractor shall hold harmless and indemnify the Owner against any and all injury, loss, or damage, including cost of defense - including but not limited to court costs and attorney's fees - arising out of the negligent acts, errors, or omissions of the Contractor.

7.5 This Agreement shall not become effective until: (1) approved by the governing body of the Owner; and (2) signed by all parties required to sign this Agreement and reviewed by the funding agency.

7.6 The Contractor and their agents and employees are Independent Contractors and are not employees of the Owner. The Contractor and their agents and employees shall not accrue leave, retirement, insurance, bonding, use of Owner vehicles, or any other benefits afforded to employees of the Owner as a result of this Agreement.

7.7 The Contractor, upon final payment of the amounts due under this Agreement, releases the Owner, their officers and employees, from their liabilities and obligations arising from or under this Agreement, including but not limited to all damages, losses, costs, liability, and expenses, including but not limited to attorney's fees and costs of litigation that the Contractor may have.

7.8 The Contractor agrees not to purport to bind the Owner to any obligation not assumed herein by the Owner, unless the Contractor has express written authority to do so, and then only within the strict limits of that authority.

7.9 Notices. All notices herein provided to be given, or which may be given, by either party to the other shall be deemed to have been fully given when made in writing and deposited in the United States mail, postage prepaid, in the instance of notice of termination of work also by certified mail, and addressed as shown on the cover page of this Agreement.

7.9.1 Nothing herein contained shall preclude the giving of any such written notice by personal service. The address to which notices shall be mailed to either party may be changed by written notice given by such party to the other as hereinabove provided.

7.10 Gender, Singular/Plural. Words of any gender used in this Contract Agreement shall be held and construed to include any other gender, and words in the singular number shall be held to include the plural, unless the context otherwise requires.

7.11 Captions and Section Headings. The captions and section headings contained in this Agreement are for convenience of reference only, and in no way limit, define, or enlarge the terms, Scope, and conditions of this Agreement.

7.12 This document shall be executed in no less than three (3) counterparts, each of which shall be deemed an original.

7.13 Certificates and Documents Incorporated. All certificates and documentation required by the provisions of the Agreement shall be attached to this Agreement at the time of execution, and are hereby incorporated by reference as though set forth in full in this Agreement to the extent they are consistent with its conditions and terms.

7.14 Separability. If any clause of provision of this Agreement is illegal, invalid, or unenforceable under present or future laws effective during the term of this Agreement, then and in that event, it is the intention of the parties hereto that the remainder of this Agreement shall not be affected thereby.

7.15 Waiver. No provision of this Agreement shall be deemed to have been waived by either party unless such waiver be in writing signed by the party making the waiver and addressed to the other party; nor shall any custom or practice which may evolve between the parties in the administration of the terms hereof be construed to waive or lessen the right of either party to insist upon the performance by the other party in strict accordance with the terms thereof. Further, the waiver by any party of a breach by the other party or any term, covenant, or condition hereof shall not operate as a waiver of any subsequent breach of the same or any other term, covenant, or condition thereof.

7.16 Entire Agreement. This Agreement represents the entire Contract between the parties and, except as otherwise provided herein, may not be amended, changed, modified, or altered without the written consent of the parties hereto. This Agreement incorporates all of the conditions, agreements, and understandings between the parties concerning the subject matter of this Contract, and all such conditions, understandings, and agreements have been merged into this written Agreement. No prior conditions, agreement, or understanding, verbal or otherwise, of the parties or their agents shall be valid or enforceable unless embodied in this written Agreement.

7.17 Interchangeable Terms. For purposes of all provisions within this Agreement and all attachments hereto, the terms “Agreement” and “Contract” shall have the same meaning and shall be interchangeable.

7.18 Words and Phrases. Words, phrases, and abbreviations which have well-known technical or trade meanings used in the Contract Documents shall be used according to such recognized meanings. In the event of a conflict, the more stringent meaning shall govern.

7.19 Relationship of Contract Documents. The Contract Documents are complementary, and any requirement of one Contract Document shall be as binding as if required by all.

7.20 Pursuant to §13-1-191 NMSA 1978, reference is hereby made to the criminal laws of New Mexico (including §30-14-1, §30-24-2, and §30-41-1 through §30-41-3 NMSA 1978) which prohibit bribes, kickbacks, and gratuities, violation of which constitutes a felony. Further, the Procurement Code (§13-1-28 through §13-1-199 NMSA 1978) imposes civil and criminal penalties for its violation.

ARTICLE 8 – TERMINATION OR SUSPENSION

8.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of the General Conditions.

8.2 The Work may be suspended by the Owner as provided in Article 14 of the General Conditions.

ARTICLE 9 – ENUMERATION OF CONTRACT DOCUMENTS

9.1 The Contract Documents, except for Modification issued after execution of this Agreement, are enumerated as follows:

9.1.1 The Agreement is this executed Agreement between Owner and Contractor, Section 00 52 00.

9.1.2 The General Conditions are the General Conditions of the Contract For Construction, AIA Document A201, 2007 edition.

9.1.3 The Supplementary and other conditions of the Contract are those contained in the Project Manual dated _____, and are as follows:

Document: _____ Title: _____ Pages: _____

9.1.4 The Specifications are those contained in the Project Manual dated as in Subparagraph 9.1.3, and are as follows: (either list the specifications here or refer to an exhibit attached to this agreement.)

Section: _____ Title: _____ Pages: _____

9.1.5 The Drawings are as follows, and are dated _____ unless a different date is shown below: (either list the Drawings her or refer to an exhibit attached to this agreement)

Number: _____ Title: _____ Pages: _____

9.1.6 The Addenda, if any, are as follows:

Number: _____ Title: _____ Pages: _____

Portions of Addenda relating to Bidding requirements are not part of the Contract Documents unless the Bidding requirements are also enumerated in this article.

9.1.7 Other Documents, if any, forming part of the Contract Documents are as follows:
(list here any additional documents which are intended to form part of the Contract Documents. The General Conditions provide that Bidding requirements such as the published invitation for Bid. Instructions to Bidders, sample forms and the contractor's Bid are not part of the Contract Documents unless enumerated in this agreement. List the documents here only if intended to be part of the Contract Documents; i.ie, Geotechnical Engineering Services Report.)

THIS AGREEMENT is entered into as of the day and year first written above.

CONTRACTOR: _____

BY: _____

(SEAL) TITLE: _____

ATTEST: BY: _____

TITLE: _____

OWNER: City of Carlsbad _____

As to legal sufficiency:
LEGAL COUNSEL BY: _____

DATE: _____

As to budgetary sufficiency:
FINANCE DIRECTOR BY: _____

DATE: _____

Clerk \ Mayor \ Chairman BY: _____

DATE: _____

ATTEST: BY: _____

TITLE: _____

The "Performance and Payment Bond" will be AIA Document A312™–2010, a copy of which may be purchased from a local AIA office.

AIA Document A312™–2010 incorporates two bonds—one covering the Contractor's performance, and the other covering the Contractor's obligations to pay Subcontractors and others for material and labor.

AIA Document A312–2010 obligates the surety to act responsively to the Owner's requests for discussions aimed at anticipating or preventing a Contractor's default.

Performance and Payment Bond No.: _____

Obligee (Owner): _____

Surety: _____

Surety's New Mexico Agent:

Name: _____

Address: _____

Telephone No. (_____) _____

The Surety and Principal stipulate as follows:

Whenever, in the judgment of the Owner, the Surety on this bond shall be insolvent, or for any cause is not a proper or sufficient Surety, the Owner may require the Contractor to furnish a new or additional bond or security within 10 days; and thereupon, if the Owner shall so order, security shall be furnished. If such new or additional bond or security is not furnished within said time, the Owner may, at its option, take over as Surety, either doing the Work on force account, or letting the same by Contract, and shall be entitled to use any equipment, materials and supplies of the delinquent Contractor in completing said Work.

The Surety hereby stipulates and agrees that no properly authorized Change Order altering Contract Time, Contract Sum, Conditions of the Contract, or the scope of nature of the Work to be performed thereunder shall in any way affect its obligation on this bond, and it does hereby waive any notice of such change.

Signed and sealed this _____ day of _____, 20 _____.

_____

(Principal) (Seal)

_____

(Witness)

_____

(Title)

_____

(Witness)

_____

(Surety) (Seal)

_____

(Title)

AGENT'S AFFIDAVIT

STATE OF _____)

COUNTY OF _____)

_____ being first duly sworn deposes and says:

that They / Them is the duly appointed agent for _____

_____ and licensed or authorized to do business in the State of New Mexico.

Deponent further states that a certain bond given to indemnify the Owner in connection with the construction of _____

dated the _____ day of_____, 20___, executed by _____

_____ Contractor, as principal and _____ as Surety, signed by this deponent; and deponent further states that said bond was written, signed, and delivered by him/her; that the premium on the same has been or will be collected by him; and that the full commission thereon has been or will be retained by him/her.

_____

Agent

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

_____

Notary Public

My Commission expires:

Agent's

Address: _____

_____

_____

Telephone Number: _____

Power of Attorney for person signing for surety company must be attached to Bond.

The “Construction Insurance Certificate” will be in accordance with AIA Document G715-1991. A copy of the Instruction Sheet and Attachment for Acord Certificate of Insurance may be purchased from a local AIA office.

ASSIGNMENT OF ANTITRUST CLAIMS

(To be executed by Suppliers, Subcontractors, and Sub-Subcontractors of Contractors)

Project: _____

Project Number: _____

_____ agrees that any and all claims which it may have or may inure to it for overcharges resulting from antitrust violations as to goods, services, and materials purchased in connection with the above-referenced project are hereby assigned to the Owner, but only to the extent that such overcharges are passed on to the Owner.

It is agreed that the undersigned retains all rights to any such antitrust claims to the extent of any overcharges not passed on to the Owner, including the right to any treble damages attributable thereto.

FIRM: _____

BY: _____
Signed by Individual Empowered to Obligate Supplier, Subcontractor, or Sub-Subcontractor

TITLE: _____

DATE: _____

CERTIFICATE OF PROJECT OWNER'S ATTORNEY

To be completed by Project Owner's Attorney

I, the undersigned, _____, the duly authorized and acting legal representative of the (municipality/county) of _____

do hereby certify as follows:

I have examined the attached Contract(s) and surety bonds and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligation upon the parties executing the same in accordance with terms, conditions and provisions thereof.

NAME: _____

DATE: _____

Address: _____

_____

_____

Telephone Number: _____

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

The "General Conditions of the Contract for Construction" AIA Document A201-2017 edition, Articles 1 through 15 inclusive, is the basis of the Contract between Owner and the Contractor and is included by reference.

The following supplements modify the "General Conditions of the Contract for Construction", AIA Document A201, 2017. Where a portion of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered provisions of the General Conditions shall remain in effect.

1.0 Add the following Subparagraph to Paragraph 1.1:

ADDITIONAL DEFINITIONS: The following definitions shall apply throughout the Bidding Documents or Contract Documents unless otherwise specified:

1.1.9 SURETY: The person or entity obligated to provide such performance or payment as set forth in bonds required by the Contract Documents.

1.1.10 UNIT PRICES: Amounts stated in the Contract as prices per unit of measurement for materials or services as described in the Contract Documents.

1.1.11 USER: The agency or agencies or designated entity for whose use the Project is being constructed.

2.0 Add the following to Subparagraph 3.4.2:

3.4.2.1 After the Contract has been executed, the Architect will consider a formal request for the substitution of products in place of those specified only under conditions set forth in the General Requirements of the Technical Specifications.

3.0 Add the following Subparagraph 3.6.1:

3.6.1 Contracts solicited by competitive sealed Bids shall require that the Bid amount exclude the applicable state gross receipts taxes or applicable local option tax but that the Owner shall be required to pay the applicable tax including any increase in the applicable tax becoming effective after the date the Contract is entered into. The applicable gross receipt tax or applicable local option tax shall be shown as a separate amount on each billing or request for payment made under the Contract (§13-1-108 NMSA 1978).

4.0 Add the following sentence to Subparagraph 3.7.1:

3.7.1 Included in the above listing is the fee charged by state or local governmental entity for the review of plans prior to issuance of the building permit.

5.0 Add the following Subparagraphs to Subparagraph 3.7.1:

3.7.1.1 The Contractor must secure all building permits from the Construction Industries Division, Licensing and Regulation Department of the State of New Mexico or the Authority Having Jurisdiction designated by CID. The Construction Industries Division offices are located at 2550 Cerrillos Rd. Santa Fe, New Mexico 87504

3.7.1.2 The Contractor will be responsible for the payment of connection charges or other such fees to cover the capital expense charges of the utility companies when listed in Allowances Specification Section. Included are the utility company's mains, trunks, or materials necessary to reach the point where the tap is made. The Contractor will be responsible for the electrical after the transformer, domestic water after the meter, fire service water at and after the detector check value, and gas after the meter.

6.0 Add the following Subparagraph to Subparagraph 3.10.1:

3.10.1.1 The construction schedule shall be submitted no later than 15 days after receipt of the Notice to Proceed. The schedule shall be revised by the Contractor from time to time to reflect all changes in Contract Work and adjustments in time, money, or both that are approved by the A/E. The schedule shall show the date of commencement of work on each pertinent phase or item of construction, percentage of scheduled completion at the end of each 15 days, and the date of completion of each phase or item of work. The progress schedule shall indicate labor, materials, and equipment actually incorporated into the Work (construction in place). No progress shall be indicated for materials and equipment on the site but not incorporated into the Work. The schedule shall be submitted each month with the Pay Request, in duplicate. No payment will be made without the schedule.

7.0 Add the following Subparagraph to Paragraph 3.15:

3.15.3 The Contractor shall thoroughly clean the premises at the completion of the Work.

8.0 Add the following to Subparagraph 4.2.3:

4.2.3.1 Should the A/E determine that any portion of the Work is not in compliance with the requirements of the Contract Documents, the A/E shall promptly notify the Owner and the Contractor of the nature of the non-compliance and the correction of the Work required.

9.0 Add Subparagraph 4.2.8.1 as follows:

4.2.8.1 The Owner shall request Changes in the Work through the Architect.

10.0 Amend Subparagraph 4.2.9 as follows:

Add the phrase "and the Owner" after the word Architect in the first sentence.

11.0 Substitute the following for "a reasonable amount" stated in line 5 of Subparagraph 7.3.4:

Overhead and profit shall be limited to the amounts as set forth in Subparagraph 7.1.4.

12.0 Add new Subparagraph to Subparagraph 7.1.4:

7.1.4 The maximum Allowance for overhead and profit allowed for Changes in the Work will not exceed the following amounts:

1. Contractor for Work performed by their own forces: 15%.
2. Subcontractor for Work performed by their own forces: 10%.
3. Contractor for Work performed by Subcontractor; Contractor may mark up the Subcontractor's Labor and Materials costs only and not the Subcontractor's marked-up price: 5%.

13.0 Add new Subparagraph 7.1.4:

7.1.4 The quotation of Work for Changes in the Work, shall be binding for 30 days from the date submitted by the Contractor.

14.0 Add the following Subparagraph 8.2.4:

8.2.4 If the Contractor shall neglect, fail or refuse to complete the Work within time herein specified or the time established by themselves for their scheduled completion, whichever is the earliest then said Contractor does hereby agree, as part consideration for awarding of this Contract, to pay the Owner the amount specified in the Contract, not as a penalty but as liquidated damages for such breach of Contract as hereinafter set forth for each and every calendar day that the Contractor shall be in default after

earliest time stipulated in Contract for completing work. Provided, that Contractor shall not be charged with liquidated damages or any excess when delay in completion of Work is due

15.0 Add new Subparagraphs 8.2.4.1, 8.2.4.2, and 8.2.4.3:

8.2.4.1 To any performance, priority or allocation order duly issued by the government;

8.2.4.2 To unforeseeable cause beyond control and without fault or negligence of Contractor including but not restricted to, acts of God or public enemy, acts of Owner, acts of another Contractor in performance of a Contract with Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes and unusually severe weather; and

8.4.2.3 To any substantiated delays of Subcontractors and/or material suppliers occasioned by any of the causes specified in Subsections 1 and 2 above.

16.0 Add Subparagraph 8.3.4:

8.3.4 Where individual items or designated portions of the Work require changes in completion time, but are not interrelated with items of work governed by the Contract Time, the A/E, and the Owner may establish by Change Order separate completion dates with separate Liquidated Damages acceptable to the Contractor and leave the Contract Time unchanged.

17.0 Add Subparagraph 8.3.5:

8.3.5 Requests for and granted extensions of time shall commence on the Contractor's scheduled date of completion unless that date and the date of substantial completion are concurrent, then the extension shall apply to the Contract Time.

18.0 Add a new Subparagraph 9.5.1.8:

9.5.1.8 This Contract Sum has been reduced by Change Order.

19.0 Add to Subparagraph 9.6.1 the following sentence:

The Owner for "**good cause**" may refuse to make payment of the full amount requested by the Contractor and recommended by the A/E in order to protect itself from loss because of Subparagraphs 9.5.1.2 through 9.5.1.8, but the Owner must give the Contractor immediate written notice (with a copy to the A/E) stating the reasons for such action.

20 Amend the first sentence of Subparagraph 9.10.1 as follows:

Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance upon receipt of a final Application for Payment, the Architect and Owner will promptly make such inspection.

21.0 Add the following Paragraph 9.11:

9.11 LIQUIDATED DAMAGES

9.11.1 The Contractor and the Contractor's surety, if any, shall be liable for and shall pay the Owner the sums hereinafter stipulated as liquidated damages for each calendar day of delay until the work is substantially complete. Liquidated damages set forth in the Agreement will be assessed from the Contractor's scheduled completion date, unless that date coincides with the Date of Substantial Completion, then it will be assessed from that date.

22.0 Add the following Subparagraph 11.1.1.2:

11.1.1.2 The limits of liability for the insurance required by Subparagraph 11.1.1 shall provide coverage for not less than the following amounts or greater if required by law:

1. Worker's Compensation / Employer's Liability:
   a. State: Statutory.
   b. Employer's Liability:
      $1,000,000 Bodily Injury Each Accident.
      $1,000,000 Bodily Injury Policy Limit.
      $1,000,000 Bodily Injury Each E.
2. Comprehensive General Liability (including Premises Operations; Independent Contractors' Protective; Products and Completed Operations; Board Form Property Damage):
   a. $1,000,000 Each Occurrence.
   b. $1,000,000 Personal and Advertising Injury.
   c. $2,000,000 Products / Completed Operations.
   d. $2,000,000 General Aggregate.
   e. Commercial Excess / Umbrella Liability:
      $1,000,000 Each Occurrence.
      $1,000,000 Aggregate.
3. Comprehensive Automobile Liability covering owned and/or non-owned and hired automobiles:
   a. $1,000,000 Bodily Injury,
   b. $1,000,000 Property Damage, or
   c. $1,000,000 Combined Single Limit.
4. Additional named insureds: The Contractor shall have the Owner, Molzen Corbin and its Subconsultants added as

additional named insureds on the Comprehensive General Liability Form or Commercial Liability Form.

23.0 Substitute the following for Paragraph 11.1.2:

11.1.2 The Contractor shall post a 100% Performance Bond and a 100% Payment Bond, forms attached hereto with amount payable conforming to the terms of the Contract. Surety shall be a company licensed to do business in the State of New Mexico and executed by such sureties as are named in the current list of Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds as published in federal circular 570 by the Audit Staff Bureau of Accounts, U.S. Treasury Department.

11.1.2.1 Special attention is called to the requirements of §13-4-18 through §13-4-20, NMSA 1978, regarding a Contractor who does not have their principal place of business in the State of New Mexico for all taxes due arising out of construction services rendered under the Contract.

11.1.2.2 The right to sue on this Bond accrues only to the Owner and the parties to whom §13-4-18 through §13-4-20, NMSA 1978, grant such right; and any such right shall be exercised only in accordance with the provisions and limitations of said statutes.

24.0 Substitute the following Paragraph for Paragraph 11.2:

11.2 PROPERTY INSURANCE

11.2.1 Contractor shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof. Contractor shall be responsible for any deductible or self-insured retention. This insurance shall:

1. Include the interests of Owner, Contractor, Subcontractors, A/E, and the officers, directors, partners, employees, agents and other consultants and Subcontractors of any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or loss payee;
2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, falsework, and materials and equipment in transit and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other

perils or causes of loss as may be specifically required by these Supplementary Conditions.

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Architect;
5. allow for partial utilization of the Work by Owner; include testing and startup; be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Architect with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued; and

11.2.2 Contractor shall purchase and maintain such boiler and machinery insurance and any other additional property insurance required by Laws and Regulations which insurance will include the interest of Owner, Contractor, Subcontractors, Architect and the officers, directors, partners, employees, agents, consultants and Subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.

11.2.3 To the extent permitted under their respective property insurance policies, the Owner and the Contractor hereby waive all rights, each against the other for damages caused by fire or other perils to the extent covered by insurance obtained pursuant to this Article or any other property insurance applicable to the Work, except such rights as they may have to the proceeds of such insurance held by the Owner as trustee. The Owner or the Contractor as appropriate shall require the A/E, other Contractors, Subcontractors, and Sub-subcontractors to similarly waive rights of subrogation of property insurance.

11.2.4 If the Owner finds it necessary to occupy or use any portion of the work prior to Substantial Completion, such occupancy or use shall not commence prior to the time mutually agreed to by the Owner and the Contractor and, if required by the applicable insurance coverage, not prior to the time the builder's risk property insurer has consented to such occupancy or use. The Contractor's consent to such occupancy or use shall not be unreasonably withheld.

25.0 Add the following Subparagraphs to Paragraph 13.4:

13.4.7 All testing required by the Contract Documents, and retesting required as a result of the failure of the first or subsequent tests, including but not limited

to testing for job mix formulae and design mixes, shall be performed by a testing laboratory under the direct supervision of a registered Professional Engineer licensed to practice in the State of New Mexico, and shall be paid for by the Contractor.

13.4.8 All sampling, transportation, and storage of samples, testing, and reporting shall be undertaken by representatives of the testing laboratory. No sampling, transportation, and storage of samples, nor testing, nor reporting shall be undertaken by the A/E, the Owner, the Contractor, or the Subcontractors.

13.4.9 Two copies of all test reports shall be furnished directly to the A/E by the testing laboratory, and one copy directly to the Owner. All test reports shall be numbered sequentially.

26.0 Delete Paragraph 13.5 in its entirety.

27.0 Delete Paragraph 15.1.2 in its entirety.

28.0 Add the following to Paragraph 15.2.1:

15.2.1 Present claims and disputes in the form of a written request accompanied by supporting data to the A/E for formal decision, with a copy to the other party.

29.0 In line 3 of Subparagraph 15.3.1, substitute the word "may" for the word "shall" before "be subject to mediation…"

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1. CONSTRUCTION INDUSTRIES LICENSING ACT

1.1 This Contract is subject to the provisions of the New Mexico Construction Industries Licensing Act (§60-13-1 to §60-13-59 NMSA 1978), the rules and regulations of the New Mexico Construction Industries Commission and the rules, regulations and codes of the various trade boards adopted pursuant to the Construction Industries Licensing Act.

2. CONTRACT AUDIT

2.1 The Owner shall be entitled to audit the books and records of a Contractor or any Subcontractor under any negotiated Contract or subcontract other than a firm fixed-price Contract to the extent that such books and records relate to the performance of such Contract or subcontract. Such books and records shall be maintained by the Contractor for a period of 3 years from the date of final payment under the prime Contract and by the Subcontractor for a period of 3 years from the date of final payment under the subcontract unless a shorter period is otherwise authorized by the Owner in writing (§13-1-161 NMSA 1978).

3. ASSIGNMENT OF ANTITRUST CLAIMS

3.1 All Contractor, suppliers, Subcontractors agree that any and all claims which it may have or may inure to it for overcharges resulting from antitrust violations as to goods, services and materials purchased in connection with this Project are hereby assigned to the Owner and the funding agency, but only to the extent that such overcharges are passed on to the Owner. It is agreed that the Contractor, supplier, Subcontractor or sub-Subcontractor retains all rights to any such antitrust claims to the extent of any overcharges not passed on to the Owner, including the right to any treble damages attributable thereto.

4. BRIBES, GRATUITIES, AND KICKBACKS

4.1 It is illegal in this state for any public employee to solicit or accept anything of value in connection with award of this Contract and for any person to offer or pay anything of value to any such public employee (§30-24-1 through §30-24-2 NMSA 1978).

4.2 Pursuant to §13-1-191 NMSA 1978 reference is hereby made to the criminal laws of New Mexico (including §30-24-1 through §30-24-2, and §30-41-1 through §30-41-3 NMSA 1978), which prohibit bribes, kickbacks, and gratuities and violation of which constitutes a felony. Further, the Procurement Code (§13-1-28 through §13-1-199 NMSA 1978) imposes civil and criminal penalties for its violation.

5. NON-RESIDENT CONTRACTOR'S REQUIREMENTS REGARDING GROSS RECEIPTS TAX SURETY BOND

5.1 §7-1-55A NMSA 1978 provides that any person (as defined in §7-1-3 NMSA 1978) engaged in the construction business who does not have their principal place of business in New Mexico and enters into a prime Construction Contract to be performed in this state shall, at the time such Contract is entered into, furnish the Director of the Revenue Division, Taxation and Revenue Department, or their delegate with a surety bond or other acceptable security in a sum equivalent to the gross receipts tax to be paid under the Contract multiplied by the applicable rate of the gross receipts tax imposed by §7-9-4 NMSA 1978 to secure payment of the tax imposed on the gross receipts from the Contract, and shall obtain a certificate from the Director of the Revenue Division, Taxation and Revenue Department, or their delegate, that the requirements of this Paragraph have been met.

5.2 If the total sum to be paid under the Contract is changed by 10% or more after the date the surety bond or other acceptable security is furnished, to the Director or their delegate, such person shall increase or decrease, as the case may be, the amount of the bond or security within 14 days after the change (§7-1-55B NMSA 1978).

5.3 In addition to the above requirements, the Contractor will be subject to all the requirements of §7-1-55 NMSA 1978.

6. CONTRACTOR'S GROSS RECEIPTS TAX REGISTRATION

6.1 §7-10-4 NMSA 1978 provides that any person (as defined in §7-10-3 NMSA 1978) performing services for the State or its political subdivisions, as those terms are used in the Gross Receipts and Compensating Tax Act (§7-10-1 through §7-10-5 NMSA 1978) must be registered and be issued an identification number with the Revenue Division of the Taxation and Revenue Department of the state to pay the gross receipts tax.

6.2 For information in obtaining the identification number contact: Revenue Division, Taxation and Revenue Department, Manuel Lujan Sr. Building, 1200 St. Francis Drive, Santa Fe, New Mexico 87503, or call (505) 988-2290.

6.3 If any person who performs services for the state or its political subdivisions is not registered to pay the gross receipts tax, the Owner shall withhold payment of the amount due until the person has presented evidence of registration with the Revenue Division to pay the gross receipts tax.

7. CONTRACTS WITH NONRESIDENT PERSONS OR PARTNERSHIPS OR UNADMITTED FOREIGN CORPORATIONS, AGENT FOR SERVICE OF PROCESS

7.1 Special attention of Contractors is called to the requirements of §13-4-21 through §13-4-24 NMSA 1978, whereby a Public Works Contract with a nonresident person or partnership or foreign corporation not authorized to do business in the State shall contain a specific provision designating an agent resident within the State, and their address, upon whom process and writs in any action or proceeding against such business may be served in any action arising out of such Contract.

8. SAFETY STANDARDS AND ACCIDENT PREVENTION

8.1 With respect to all work performed under this Contract, the Contractor shall:

A. Comply with the safety standards provisions of applicable laws, building and construction codes and the "Manual of Accident Prevention in Construction" published by the **Associated General Contractors of America**, the requirements of the Occupational Safety and Health Act of 1970 (P.L. 91-596), and the requirements of Title 29 of the Code of Federal Regulations, Section 1518 as published in the "Federal Register", Volume 36, No. 75, Saturday, April 17, 1971.

B. Exercise every precaution at all times for the prevention of accidents and the protection of persons (including employees) and property.

C. Maintain at his/her office or other well-known place at the job site, all articles necessary for giving first aid to the injured, and shall make standing arrangements for the immediate removal to a hospital or a doctor's care of persons (including employees), who may be injured on the job site. In no case shall employees be permitted to work at a job site before the employer has made a standing arrangement for removal of injured persons to a hospital or a doctor's care.

9. PROJECT IDENTIFICATION SIGN

9.1 Refer to General Requirements Section 01 50 00 Temporary Facilities and Controls for applicability

10. EQUAL OPPORTUNITY

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

10.2 The Contractor, all Subcontractors, and all Sub-subcontractors shall, in all solicitation or advertisements for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex, or national origin.

11. DEBARRED OR SUSPENDED CONTRACTORS

11.1 A business (Contractor, Subcontractor, or Supplier) that has either been debarred or suspended pursuant to the requirements of §13-1-177 through §13-1-180, and §13-4-11 through §13-4-17, NMSA 1978, shall not be permitted to do business with the Owner and shall not be considered for award of Contract during the period for which it is debarred or suspended.

12. BUILDER'S RISK INSURANCE

12.1. The Contractor will maintain Builder's Risk Insurance (fire and extended coverage) on a 100% completed value basis on the insurable portions of the project for the

benefit of the Owner, the Contractor, and all Subcontractors, as their interests may appear.

13. STATED ALLOWANCES

13.1 The Contractor has included any and all Utility Service Allowances listed in General Requirements Section 01 21 00 in its Bid

The Contractor has included any and all Cash Allowances in its Bid listed in General Requirements Section 01 21 00 in its Bid:

13.2.1 The Contractor shall purchase the "Allowed Materials" as directed by the Owner through the A/E on the basis of the lowest and best Bid of at least three competitive Bids. If the actual price for purchasing the "Allowed Materials" is more or less than the "Cash Allowance," the Contract Price shall be adjusted accordingly. The adjustment in Contract Price shall be made on the basis of the purchase price without additional charges for overhead, profit, insurance, or any other incidental expenses. The cost of installation of the "Allowed Materials" shall be included in the applicable section of the Specifications covering this work.

14. MINIMUM WAGE RATES

14.1 The Contractor warrants and agrees that he and all Subcontractors shall comply with all applicable provisions of the New Mexico Public Works Minimum Wage Act, §13-4-11 NMSA 1978 (if the project is over $20,000); and other statutes pertaining to public works in New Mexico. The attached Minimum Wage Rate Determinations are declared to be prevailing and apply to the construction.

14.2 Submission of weekly payroll records to the Owner and Labor Commission is mandatory. Include the decision number on Contractor's and Subcontractor's payrolls. The scale of wages shall also be posted in a prominent location at the site.

14.3 In the event it is found by the Labor Commission, that any laborer or mechanic employed by the Contractor or Subcontractor on the site of the project covered by this Contract, has been or is being paid as a result of a willful violation, a rate of wages less than the rate of wages required by the Contract, the Owner may, by written notice to the Contractor and their Subcontractor, if the violation involves a Subcontractor, terminate their right to proceed with the Work or such part of the Work as to which there has been a willful failure to pay the required wages and the Owner may prosecute the Work to completion by Contract or otherwise, and the Contractor shall be liable to the Owner and the State of New Mexico for any excess cost occasioned thereby.

15. OTHER ADDITIONAL CONDITIONS

Wage Rate Decision(s) which follow are applicable to this project.

New Mexico Department of WORKFORCE SOLUTIONS

TYPE "B" – GENERAL BUILDING

Effective January 1, 2022

Trade Classification	Base Rate	Fringe Rate	Apprenticeship
Asbestos Workers/Heat and Frost insulators	34.51	12.06	0.60
Asbestos Workers/Heat and Frost insulators: Los Alamos County	36.94	12.06	0.60
Boilermaker/blacksmith	34.88	32.28	0.60
Boilermaker/blacksmith: San Juan County	35.83	31.88	0.60
Bricklayer/Block layer/Stonemason	24.97	9.50	0.60
Carpenter/Lather	26.48	12.14	0.60
Carpenter: Los Alamos County	29.24	13.94	0.60
Millwright/pile driver	35.08	27.57	0.60
Cement Mason	22.04	10.73	0.60
Electricians-Outside Classifications: Zone 1			
Ground man	24.57	11.74	0.60
Equipment Operator	35.25	16.06	0.60
Lineman/technician	44.32	18.08	0.60
Cable Splicer	48.75	19.19	0.60
Electricians-Outside Classification: Zone 2			
Ground man	24.57	11.74	0.60
Equipment Operator	35.25	16.06	0.60
Lineman/technician	44.32	18.08	0.60

Cable Splicer	48.75	19.19	0.60
Electricians-Outside Classifications: Los Alamos County			
Ground man	25.27	11.76	0.60
Equipment Operator	36.27	16.09	0.60
Lineman/technician	45.47	18.36	0.60
Cable Splicer	49.59	19.50	0.60
Electricians-Inside Classifications: Zone 1			
Wireman/ low voltage technician	35.20	12.21	0.60
Cable Splicer	38.72	12.31	0.60
Electricians-Inside Classification: Zone 2			
Wireman/ low voltage technician	38.37	12.30	0.60
Cable Splicer	41.89	12.41	0.60
Electricians-Inside Classification: Zone 3			
Wireman/ low voltage technician	40.48	12.36	0.60
Cable Splicer	44.00	12.47	0.60
Electricians-Inside Classification: Zone 4			
Wireman/low voltage technician	44.35	12.48	0.60
Cable Splicer	47.87	12.58	0.60
Electricians-Inside Classification: Dona Ana, Hidalgo, Luna and Otero Counties			
Wireman/low voltage technician	31.42	8.87	0.60
Cable splicer	30.77	8.64	0.60
Electricians-Inside Classification: Los Alamos County			
Wireman/low voltage technician	40.48	14.38	0.60
Cable Splicer	44.00	14.67	0.60
Elevator Constructor	46.54	37.49	0.60

Elevator Constructor Helper	37.48	37.49	0.60
Glazier			
Journeyman/ Fabricator	21.00	6.45	0.60
Delivery Driver	11.50	6.45	0.60
Ironworker	27.70	17.89	0.60
Painter	17.75	8.20	0.60
Paper Hanger	17.75	8.20	0.60
Drywall Finisher/Taper - Light Commercial & Residential			
Ames tool operator	26.21	8.00	0.60
Hand finisher/machine texture	25.21	8.00	0.60
Plasterer	23.95	9.59	0.60
Plumber/Pipefitter	33.10	13.10	0.60
Roofer	26.34	9.16	0.60
Sheet metal worker			
Zone 1	34.54	17.92	0.60
Zone 2 – Industrial	35.54	17.92	0.60
Zone 3 – Los Alamos County	36.54	17.92	0.60
Soft Floor Layer	20.75	8.45	0.60
Sprinkler Fitter	32.67	23.46	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	18.75	7.52	0.60
Group II- Skilled	19.75	7.52	0.60
Group III- Specialty	22.00	7.52	0.60
Masonry Laborers			
Group I- Unskilled and Semi-Skilled	19.75	7.75	0.60
Group II- Skilled	21.50	7.75	0.60
Group III- Specialty	22.00	7.75	0.60

Operators			
Group I	22.63	7.67	0.60
Group II	24.79	7.67	0.60
Group III	25.25	7.67	0.60
Group IV	25.69	7.67	0.60
Group V	25.88	7.67	0.60
Group VI	26.09	7.67	0.60
Group VII	26.20	7.67	0.60
Group VIII	29.24	7.67	0.60
Group IX	31.63	7.67	0.60
Group X	35.03	7.67	0.60
Truck Drivers			
Group I-VII	16.65	8.27	0.60
Group VIII	16.71	8.27	0.60
Group IX	18.65	8.27	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.

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

PUBLIC WORKS PROJECT REQUIREMENTS

As a participant in a Public Works project valued at more than $60,000 in the state of New Mexico, the following list addresses many of the responsibilities that are defined by statute or regulation to each project stakeholder.

Contracting Agency

- Ensure that all contractors wishing to bid on a Public Works project when the project is $60,000 or more are actively registered with the Public Works and Apprenticeship Application (PWAA) website: http://www.dws.state.nm.us/pwaa (Contractor Registration) prior to bidding.
- Please submit Notice of Award (NOA) and Subcontractor List(s) to the PWAA website promptly after the project is awarded.
- Please update the Subcontractor List(s) on the PWAA website whenever changes occur.
- All sub-contractors and tiers (excluding professional services) regardless of contract amount must be listed on the Subcontractor List and must adhere to the Public Works Minimum Wage Act.
- Ninety days after project completion please go into the PWAA system and close the project. Only contracting agencies are allowed to close the project. Agents or contractors are not allowed to close projects.

General Contractor

- Provide a complete Subcontractor List and Statements of Intent (SOI) to Pay Prevailing Wages for all contractors, regardless of amount of work, to the contracting agency within 3 (three) days of award.
- Ensure that all subcontractors wishing to bid on a Public Works project have an active Contractor Registration with the Public Works and Apprenticeship Application (PWAA) website: http://www.dws.state.nm.us/pwaa prior to bidding when their bid will exceed $60,000.
- Make certain the Public Works Apprentice and Training Act contributions are paid either to an approved Apprenticeship Program or to the Public Works Apprentice and Training Fund.
- Confirm the Wage Rate poster, provided in PWAA, is displayed at the job site in an easily accessible place.
- When the project has been completed, make sure the Affidavits of Wages Paid (AWP) are sent to the contracting agency.
- All subcontractors and tiers (excluding professional services) regardless of contract amount must pay prevailing wages, be listed on the Subcontractor List, and adhere to the Public Works Minimum Wage Act.

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

Subcontractor

- Ensure that all subcontractors wishing to bid on a Public Works project have an active Contractor Registration with the Public Works and Apprenticeship Application (PWAA) website: http://www.dws.state.nm.us/pwaa prior to bidding when their bid willexceed $60,000.
- Make certain the Public Works Apprentice and Training Act contributions are paid either to an approved Apprenticeship Program or to the Public Works Apprentice and Training Fund.
- All subcontractors and tiers (excluding professional services) regardless of contract amount must pay prevailing wages, be listed on the Subcontractor List, and adhere to the Public Works Minimum Wage Act.

Additional Information

Reference material and forms may be found in the New Mexico Department of Workforce Solutions Public Works web pages at: https://www.dws.state.nm.us/Labor-Relations/Labor-Information/Public-Works.

CONTACT INFORMATION

Contact the Labor Relations Division for any questions relating to Public Works projects by email at public.works@state.nm.us or call (505) 841-4400.

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: Alejandro Ruiz Senior Center Reroof Re-Bid
Requested Date: 08/22/2022
Approved Date: 08/23/2022
Approved Wage Decision Number: ED-22-2101-B

Wage Decision Expiration Date for Bids: 12/21/2022

2) Physical Location of Jobsite for Project:
Job Site Address: Greene Street
Job Site City: Carlsbad
Job Site County: Eddy

3) Contracting Agency Name (Department or Bureau): City of Carlsbad
Contracting Agency Contact's Name: Matt Fletcher
Contracting Agency Contact's Phone: (575) 234-7905 Ext.

4) Estimated Bid Opening Date: 09/21/2022

5) Estimated total project cost: $
a. Are any federal funds involved?: No
b. Does this project involve a building?: Yes - 35,000 sf of roofing to be replaced
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?: New Roof

6) Classifications of Construction:

Classification Type and Cost Total	Description
General Building (B) **Cost: $**	The ALEJANDRO RUIZ SENIOR CENTER has approximately 35,000 sf of Roofing to be replaced. Project consists of: 1. Selective Demolition, Thermoplastic Polyolefin (TPO) Membrane Roofing, Insulation, Sheet Metal Flashing and Trim, Sealants, Painting, Plumbing, Heating, Ventilating and Air Conditioning, and Electrical.

SECTION 01 10 00

SUMMARY

PART 1 GENERAL

1.01 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Format: The Specifications are organized into Divisions and Sections using the 49-division format and CSI/CSC's "MasterFormat 2011" numbering system.

B. Division 01 General Requirements apply to work of all specification sections.
1. Part 1 General of each Specification section contains requirements which pertain only to that Section.

C. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions include:
1. Abbreviated Language: Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
3. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
4. The word "provide" means to furnish and install, complete and ready for use.

1.02 SUMMARY BY REFERENCED

A. Work of the Contract can be summarized by references to the Contract, General Conditions, Supplementary Conditions, Specification Sections, Drawings, Addenda and Modifications to the Contract Documents issued subsequent to the initial printing of this Project Manual and including, but not necessarily limited to, printed material referenced by any of these. It is recognized that work of the Contract is also unavoidably affected or influenced by governing regulations, natural phenomenon, including weather conditions and other forces outside the Contract Documents.

1.03 WORK COVERED BY CONTRACT DOCUMENTS

A. Project will be constructed under a general construction contract.

B. Project Identification: The Alejandro Ruiz Senior Center Reroof project covers the existing approximately 30,000 sf facility.
1. Project Consists Of: Selective Demolition, patching and repair of gypsum roofing substrate, Sheet Metal Flashing and Trim, TPO roofing system, Sealants, Painting.

C. The Work Consists Of:
   1. Base Bid: The Base Bid includes all elements of construction shown for the complete and operational construction of this project.

1.04 CONTRACTOR'S RESPONSIBILITIES

A. The awarded Contractor must have a minimum of 5 years' experience as the General Contractor of Commercial Building Construction projects similar in complexity and size under the present firm or trade name.

B. Except as noted, provide and pay for all labor, materials, and equipment.

C. Pay required sales, gross receipts, and other taxes. Owner will pay Contractor applicable New Mexico gross receipts tax including local option tax and any increase in tax becoming effective after Contract date.

D. Secure and pay for permits, fees, and licenses necessary for execution of Work as applicable at time of receipt of bids or as otherwise required in other sections of the Specifications.

E. Give required notices.

F. Comply with codes, ordinances, regulations, and other legal requirements of public authorities which bear on performance of Work.

G. Request required inspections from public authorities, correct any noted deficiencies, and obtain certifications of satisfactory inspection. Deliver certificates to Owner in accordance with the Closeout Submittals Section.

1.05 USE OF THE PREMISES

A. Owner will occupy site and existing building during entire construction period.
   1. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage.
   2. Perform the Work so as not to interfere with Owner's operations.
   3. Maintain existing building in a weathertight condition throughout construction period. Repair damage caused by construction operations.
   4. Protect building and its occupants during construction period.

B. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated.
   1. Limits: Confine constructions operations to area designated on drawings
   2. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
      a. Schedule deliveries to minimize use of driveways and entrances.
      b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 21 00

ALLOWANCES

PART 1 GENERAL

1.01 DESCRIPTION

A. This Section includes administrative and procedural requirements governing the following:
   1. Quantity Allowances.

B. Related Work: Section 07 54 23 – Thermoplastic Polyolefin (TPO) Membrane Roofing and Appendix A: *NM Building Envelope Architects, LLC, Carlsbad Senior Center Existing Roof Condition Assessment, November 2021*.

1.02 SCHEDULE OF VALUES

A. Include each item in Schedule of Values as a line item, listing amount of Allowances specified in this section.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 ALLOWANCE SCHEDULE

A. Quantity Allowance:
   1. Roof Deck Repair: Allow the quantity of 6,000 sf.
   2. Roof Deck Replacement: Allow the quantity of 6,000 sf.
   3. Payment shall be as specified in Section 01 50 00 – Temporary Facilities and Controls:
      a. At Project Closeout, credit Owner for unused Allowance quantity multiplied by unit cost. Overage quantities at unit cost shall be charged via Change Order.

END OF SECTION

SECTION 01 22 00

UNIT PRICES

PART 1 GENERAL

1.01 SUMMARY

A. Unit Price Items:
   1. Estimated Quantities:
      a. Estimated quantities in Bid Form are approximate and used only for:
         1) Basis for estimating probable cost of Work.
         2) Comparison of Bids submitted for Work.
   2. Unit Quantities: Actual measured and documented quantities provided shall determine payment.

B. Measurement of Quantities:
   1. Measurement by Area: Measured by square dimension using mean length and width or radius.

C. Basis of Payment: Actual amount of Work as determined by multiplying the measured or documented quantity provided by the appropriate Unit Price as Bid.

D. Payment Includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application or installation of item of the Work; overhead and profit.
   1. Format and Data Required:
      a. Bid or payment item (from Schedule of Values).
      b. Unit.
   2. Contract or Scheduled Unit Price:
      a. Quantity.
      b. Total price.
   3. Previously Completed:
      a. Quantity.
      b. Total price.
   4. Completed this Period:
      a. Quantity.
      b. Total price.
   5. Total to Date:
      a. Quantity.
      b. Total price.
   6. Contractor’s standard format can be used if it meets these requirements or is approved by the A/E.

E. Final payment for Work governed by unit prices will be made on basis of actual measurements and quantities accepted by A/E multiplied by unit sum/price for Work incorporated in or made necessary by the Work.

F. Reference Appendix A: *NM Building Envelope Architects, LLC, Carlsbad Senior Center Existing Roof Condition Assessment, November 2021*.

G. Unit Price Schedule:
   1. Item: Roof Deck Repair; Section 07 54 23 – Thermoplastic Polyolefin (TPO) Membrane Roofing; Total Quantity: 6,000 sf.
      a. Provide cost per square foot of roof deck repair.
   2. Item: Roof Deck Replacement; Section 07 54 23 – Thermoplastic Polyolefin (TPO) Membrane Roofing; Total Quantity: 6,000 sf.
      a. Provide cost per square foot of roof deck replacement.
   3. This cost will be treated as an Allowance and total quantity of roofing must be verified before payment / refund is made.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 25 00

SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

A. Substitution Requests:
1. No product is "approved" for Substitution prior to Bid. The Contract is based on material and equipment specified in the Specifications or described in the Drawings without consideration of possible substitute or "or-equal" items.
2. Where indicated that substitute or "or-equal" item of material or equipment may be furnished or used if acceptable to the A/E, application for such acceptance shall not be considered until after the effective date of the Contract.
3. Submit written requests for Product Substitution along with a copy of the Substitution Request Form included in this Section, after award of the Contract for Construction and within 30 days after Notice to Proceed.

1.02 SUBSTITUTION OF MATERIALS AND EQUIPMENT

A. Substitutions, General: Catalog numbers and specific brands or trade names are used in materials, products, equipment and systems required by the Specifications to establish the standards of quality, utility and appearance required. Alternative products which are of equal quality and of required characteristics for the purpose intended may be proposed for use provided the Contractor complies with provisions of Contract General Conditions subject to the following provisions:
1. See Section 01 60 00: Basic Product Requirements for requirements regarding product options.
2. Substitutions will only be authorized by properly executed Change Order or Field Instruction.
3. Substitutions shall be considered when a product becomes unavailable through no fault of Contractor.
4. Owner has no obligation to entertain substitutions.

B. Substitution Provisions:
1. Documentation: Substitutions will not be considered if they are indicated or implied on Shop Drawing, product data or sample submittals. All requests for substitution shall be by separate written request from Contractor. See paragraph below for documentation required in the submission of request for substitution.
2. Cost and Time Considerations: Substitutions will not be considered unless a net reduction in Contract Sum or Contract Time results to Owner's benefit, including redesign costs, life cycle costs, plan check and permit fees, changes in related Work and overall performance of building systems.
3. Design Revision: Substitutions will not be considered if acceptance will require substantial revision of the Contract Documents or will substantially change the

intent of the design, in the opinion of the A/E. The intent of the design shall include functional performance and aesthetic qualities.

4. Data: It shall be the responsibility of the Contractor to provide adequate data demonstrating the merits of the proposed substitution, including cost data and information regarding changes in related Work.
5. Determination by A/E: A/E will determine the acceptability of proposed substitutions and will notify Contractor in writing of acceptance or rejection. The determination by the A/E regarding functional performance and aesthetic quality shall be final.
6. Non-Acceptance: If a proposed substitution is not accepted, Contractor shall immediately provide the specified product.
7. Substitution Limitation: Only one request for substitution will be considered for each product.

C. Request for Substitution Procedures: Comply with provisions of Contract General Conditions and the following.

1. Contractor shall prepare a request for substitution and submit the request to A/E for review and recommendation for acceptance. Acceptance and approval of substitutions shall be by A/E.
    a. Present the request for substitution using form provided by A/E.
    b. Comply with other administrative requirements shall be as directed by Owner's Representative.
2. Substitution requests shall include complete product data, including Drawings and descriptions of products, fabrication details and installation procedures. Include samples where applicable or requested.
3. Substitution requests shall include appropriate product data for the specified product(s) of the specified manufacturer, suitable for use in comparison of characteristics of products.
    a. Include a written, point-by-point comparison of characteristics of the proposed substitute product with those of the specified product.
    b. Include a detailed description, in written or graphic form as appropriate, indicating all necessary changes or modifications needed to other elements of the Work, which will be performed by the Contractor at no additional expense to the Owner, if the proposed substitution is accepted.
4. Substitution requests shall include a statement indicating the substitution's effect on the Construction Schedule. Indicate the effect of the proposed substitution on overall Contract Time and, as applicable, on completion of portions of the Work for use by Owner.
5. Except as otherwise specified, substitution requests shall include detailed cost data, including a proposal for the net change, if any, in the Contract Sum.
6. Substitution requests shall include signed certification that the Contractor has reviewed the proposed substitution and has determined that the substitution, in combination with the cost or time savings, represents an equivalent or superior condition in every respect to product requirements and value indicated or specified in the Contract Documents, and that the substitution is suited for and can perform the purpose or application of the specified product indicated or specified in the Contract Documents.

7. Substitution requests shall include a signed waiver by the Contractor for change in the Contract Time or Contract Sum because of the following:
    a. Substitution failed to perform adequately.
    b. Substitution required changes in on other elements of the Work.
    c. Substitution caused problems in interfacing with other elements of the Work.
    d. Substitution was determined to be unacceptable by authorities having jurisdiction.
8. A request constitutes a representation that Contractor:
    a. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
    b. Will provide same warranty for Substitution as for specified product.
    c. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
9. If, in the opinion of the A/E, the substitution request is incomplete or has insufficient data to enable a full and thorough review of the intended substitution, the substitution may be summarily refused and determined to be unacceptable.

D. Contract Document Revisions:
1. Should a Contractor-proposed substitution or alternative sequence or method of construction require revision of the Contract Drawings or Specifications, including revisions for the purposes of determining feasibility, scope or cost, or revisions for the purpose of obtaining review and approval by authorities having jurisdiction, A/E will make revisions as approved in writing in advance by Owner.
2. Contractor shall pay for services of A/E for researching and reporting on proposed substitutions or alternative sequence and method of construction when such activities are considered additional services to the design services contracts of A/E.
3. Contractor shall pay for costs of expenses incurred by A/E. These costs may include travel, reproduction, long distance telephone and shipping costs reimbursable at cost plus usual and customary mark-up for handling and billing.
4. Contractor shall pay such fees whether or not the proposed substitution or alternative sequence or method of construction is ultimately accepted by Owner and a Change Order executed.

PART 2 PRODUCTS (NOT APPLICABLE TO THIS SECTION).

PART 3 EXECUTION (NOT APPLICABLE TO THIS SECTION).

SUBSTITUTION REQUEST - After Award of Contract			
Project:			**Substitution Request Number:**
Re:			**Date:**
From:			**A/E Project Number:**
To:			
Specification Title:			**Description:**
Section:	**Page:**		**Article/Paragraph:**
Proposed Substitution:			
Manufacturer:		Address:	Phone:
Trade Name:			Model No.:
Installer:		Address:	Phone:
History: ☐ New product ☐ 1-4 years old ☐ 5-10 years old ☐ More than 10 years old			
Differences between proposed substitution and specified:			
☐ Point-by-point comparative data attached — **REQUIRED BY A/E**			
Reason for not providing specified item:			
Similar Installation:			
Project:		Architect:	
Address:		Owner:	
		Date Installed:	
Proposed substitution affects other parts of Work: ☐ No ☐ Yes			
Explain			
Savings to Owner for accepting substitution: _____($_____)			
Proposed substitution changes Contract Time: ☐ No ☐ Yes [Add] [Deduct] _____days			
Supporting Data Attached: ☐ Drawings ☐ Product ☐ Data ☐ Samples ☐ Tests ☐ Reports			

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END OF SECTION

SECTION 01 26 00

CONTRACT MODIFICATION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Section includes:
1. Change Procedures.
2. Proposal Requests.
3. Effect of Change on Schedule.
4. Correlation of Contractor Submittals.

1.02 CHANGE PROCEDURES

A. Minor Changes in the Work:
1. AIA Form G710.
2. The A/E issues Supplemental Instructions to the Contractor for minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time.

B. Construction Change Directive:
1. AIA Form G714.
2. A/E issues Construction Change Directive which describes changes in the Work and designates methods for determining changes in Contract Sum or Contract Time.
3. Contractor proceeds with changes in the Work for subsequent inclusion in a Change Order.
4. Documentation:
   a. Document each quotation for change in cost or time with sufficient data to allow evaluation of quotation.
   b. Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
   c. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

C. Change Orders:
1. AIA Form G701.
2. Execution: A/E will issue Change Orders for signatures of parties as provided in Conditions of the Contract.
3. Reservation of Rights: An executed change order represents full and final settlement of all claims arising out of a modification including all claims for delays and disruptions resulting from, caused by, or incident to such modifications.

D. Provide A/E with name of individual authorized to receive change documents, and responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

1.03 PROPOSAL REQUESTS

A. The A/E may issue a Proposal Request including a detailed description of proposed change with supplementary or revised Drawings and specifications for executing the change.

B. The Contractor may propose changes by submitting a request for change to A/E, describing proposed change and its full effect on the Work.
   1. Include a statement describing reason for the change, and effect on Contract Sum/Price and Contract Time with full documentation and a statement describing effect on Work by separate or other Contractors as described in previous paragraph.
   2. Document requested substitutions in accordance with Section 01 25 00 – Product Requirements.

C. Proposal Format:
   1. Within 10 days, Contractor will prepare and submit a Proposal Worksheet using Work Breakdown Detail and Summary forms following this Section.
      a. For each Element of Work, calculate additions showing:
         1) Description and quantity.
         2) Material cost including delivery charges.
         3) Labor cost directly attributable to the change.
         4) Equipment rental cost.
         5) Subtotal.
      b. For each Element of Work, calculate deductions showing:
         1) Description and quantity.
         2) Material cost including delivery charges.
         3) Labor cost directly attributable to the change.
         4) Equipment rental cost.
         5) Subtotal.
      c. Subcontractor's net change in cost.
      d. Subcontractor's OH&P at percentage stipulated in Conditions of the Contract.
      e. Subcontractor's Bond.
      f. Subcontractor's Total.
      g. Contractor's OH&P at percentage stipulated in Conditions of the Contract.
      h. Contractor's Bond.
      i. Contractor's Insurance.
      j. Applicable Tax.
      k. Contractor's Total.

1.04 EFFECT OF CHANGE ON SCHEDULE

A. With proposal, include an updated Contractor's Construction Schedule that indicates the effect of the change, including but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. No change order request may include additional time required to perform the work, or additional supervision costs unless the additional work is shown to affect the critical path of the project.

1.05 CORRELATION OF CONTRACTOR SUBMITTALS

A. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.

B. Promptly revise progress schedules to reflect change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.

C. Promptly enter changes in Project Record Documents.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

CHANGE ORDER REQUEST (PROPOSAL)

Project:	**From:**
Date:	**Re**:
Change Order Request Number	**Project Number:**

This Change Order Request (C.O.R.) contains an itemized quotation for changes in the Contract Sum or Contract Time in response to proposed modifications to the Contract Documents based on Proposal Request No. _____ .

Description of Proposed Change:

Attached supporting information from: ☐ Subcontractor ☐ Supplier _____ ☐ _____

Reason for Change:

Does Proposed Change involve a change in Contract Sum? ☐ No ☐ Yes [Increase] [Decrease_____

Does Proposed Change involve a change in Contract Time? ☐ No ☐ Yes [Increase] [Decrease] _____days

Attached pages: ☐ Proposal Worksheet Summary:
☐ Proposal Worksheet Detail(s):

Signed by: **Date**:

Copies: ☐ Owner ☐ Consultants ☐ _____ ☐ _____ ☐ _____ ☐ File

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CHANGE ORDER PROPOSAL WORKSHEET DETAIL

Project:	**From:**
Date:	**Re**:
Change Order Request Number	**Project Number:**
Worksheet No	

Complete this Worksheet for each element of Work

ADDITIONS

Item	Description	Qty	Unit Prices		Subtotals		Total
			Materials	Labor	Materials	Labor	
1							
2							
3							
4							
5							
	Subtotal (Enter this number on Worksheet Summary)						

DEDUCTIONS

Item	Description	Qty	Unit Prices		Subtotals		Total
			Materials	Labor	Materials	Labor	
1							
2							
3							
4							
5							
	Subtotal (Enter this number on Worksheet Summary)						

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2701 Miles Rd. SE, Albuquerque, New Mexico 87106

CHANGE ORDER PROPOSAL WORKSHEET SUMMARY

Project:	**From:**
Date:	**Re**:
Change Order Request Number	**Project Number:**

Enter Worksheet Detail Information below

ADDITIONS

Item	Sheet	Description	Material	Labor	Equipment	Subtotal
1						
2						
3						
4						
5						
		Subtotal				

DEDUCTIONS

Item	Sheet	Description	Material	Labor	Equipment	Subtotal
1						
2						
3						
4						
5						
		Subtotal				

Subcontractor's Net:	
Subcontractor's OH&P and Bond:	
Subcontractor's Total:	**$**
Contractor's OH&P and Bond:	
Insurance:	
Contractor's Subtotal:	**$**
New Mexico Gross Receipts Tax:	
WORKSHEET TOTAL	**$**

END OF SECTION

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2701 Miles Rd. SE, Albuquerque, New Mexico 87106

SECTION 01 29 00

PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Schedule of Values.

B. Applications for payment.

C. Defect Assessment.

1.02 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule:
   1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including Submittals Schedule and Application for Payment forms with Continuation Sheets.
   2. Submit the Schedule of Values to A/E at earliest possible date but no later than seven (7) days before the date scheduled for submittal of initial Applications for Payment.

B. Submit printed schedule on AIA Form G703 - Continuation Sheet for G702.

C. Format: Utilize Table of Contents of this Project Manual. Identify each line item with number and title of major specification Section. Identify site mobilization, bonds, and insurance.

D. Include in each line item, amount of Allowances specified in this section.

E. Include in each line item, amount of Alternates specified in this section.

F. Include separately from each line item, direct proportional amount of Close-out.

G. Revise schedule to list approved Change Orders with each Application for Payment.

1.03 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by A/E and paid for by Owner.
   1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Submit five (5) signed and notarized copies of each application on AIA Form G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet for G702.
   1. One (1) copy shall include waivers of lien and similar attachments if required.

C. Content and Format:
   1. Utilize Schedule of Values for listing items in Application for Payment.
   2. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor.
   3. A/E will return incomplete applications without action.

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

E. Payment Period: Submit at intervals stipulated in the Agreement.

F. Submit with transmittal letter as specified for Submittals in Section 01 33 00 - Submittal Procedures.

G. Substantiating Data: When A/E requires substantiating information, submit data justifying dollar amounts in question. Include the following with Application for Payment:
   1. Current construction photographs.
   2. Record documents for review by Owner which will be returned to Contractor.
   3. Affidavits attesting to off-site stored products.
   4. Construction progress schedules, revised and current.

H. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

I. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
   1. List of subcontractors.
   2. Schedule of Values.
   3. Contractor’s Construction Schedule (preliminary if not final).
   4. Submittals Schedule (preliminary if not final).
   5. List of Contractor’s staff assignments.
   6. Certificates of insurance and insurance policies.
   7. Performance and payment bonds.

J. Application for Payment at Substantial Completion:
   1. Submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
   2. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
   3. Reflect Certificates of Partial Substantial Completion issued in Application for Payment.

K. Final Payment Application:
   1. Submit final Application for Payment with releases and remainder of supporting documentation , including, but not limited, to the following:
      a. Proof that taxes, fees, and similar obligations were paid.
      b. Updated final statement, accounting for final changes to the Contract Sum.
      c. Final waivers from every entity involved with performance of the Work who is lawfully entitled to a lien. Evidence that claims have been settled.
      d. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims", two copies.
      e. AIA Document G706A, "Contractor's Affidavit of Release of Liens", two copies.
      f. AIA Document G707, "Consent of Surety to Final Payment", two copies
   2. Refer to Section 01 77 00 Closeout Procedures, for final completion requirements.

1.04 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements.

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

C. At the discretion of the A/E:
   1. The defective Work may remain, but unit sum/price will be adjusted to new sum/price or,
   2. Defective Work will be partially repaired to instructions of A/E and unit sum/price will be adjusted to new sum/price.

D. Authority of A/E to assess defects and identify payment adjustments is final.

E. Non-Payment For Rejected Products: Payment will not be made for rejected products for any of the following:
   1. Products wasted or disposed of in a manner that is not acceptable.
   2. Products determined as unacceptable before or after placement.
   3. Loading, hauling, and disposing of rejected products.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project Coordination.

B. Preconstruction meeting.

C. Progress meetings.

D. Pre-installation meetings.

E. Requests for Interpretation (RFIs).

1.02 PROJECT COORDINATION

A. Coordinate scheduling, submittals, and Work of various sections of Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later where indicated on the Drawings.

B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, operating equipment.

C. Coordinate space requirements, supports, and installation of mechanical and electrical Work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

D. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within construction. Consider finish elements when locating fixtures and outlets to minimize disruption to finish elements. Verify locations with Architect before installation.

E. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion and for portions of Work designated for Owner’s partial and full occupancy.

F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner’s activities.

1.03 PRECONSTRUCTION MEETING

A. A/E will schedule meeting after Notice of Award.

B. Attendance Required: Owner, A/E, Contractor, and major subcontractors.

C. Agenda:
1. Execution of Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of Schedule of Values and Submittals Schedule.
5. Designation of personnel representing parties in Contract and A/E.
6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
7. Scheduling.
8. Testing, Inspecting and Laboratory Services.
9. Use of premises by Owner and Contractor.
10. Owner's requirements and partial occupancy.
11. Construction facilities and controls.
12. Temporary utilities.
13. Security and housekeeping procedures.
14. Procedures for maintaining record documents.

D. Minutes shall be distributed within one week after meeting to participants.

1.04 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at maximum bi-monthly intervals.

B. Make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.

C. Attendance Required: Job superintendent, major subcontractors and suppliers, A/E, and others as appropriate to agenda topics for each meeting.

D. Agenda:
1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems and Requests for information impeding planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.

10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule and coordination.
13. Other business relating to Work.

E. Record minutes and distribute copies within one week after meeting to participants, with copies to A/E, Owner, and those affected by decisions made.

1.05 PRE-INSTALLATION MEETINGS

A. Coordination meeting required for complex items requiring coordination and understanding among several participants.
1. Hold meetings when required in individual specification sections or the Contractor deems necessary. Meetings shall focus on specific concerns and do not relieve the Contractor of the responsibility to coordinate the Work when a pre-installation meeting is not required by a Section.
2. Hold meetings in which all trades responsible for the various assemblies of a component of the Work meet before the work begins, to discuss how each aspect is to be coordinated with other adjacent construction so that the responsibilities for installation of various components and progression of the work is clearly understood.
3. Convene pre-installation meetings at Project site prior to commencing work of specific section.

B. Require attendance of parties directly affecting, or affected by Work of specific section.

C. Notify A/E in advance of meeting date.

D. Prepare agenda and preside at meeting:
1. Review conditions of installation, preparation and installation procedures.
2. Review coordination with related work.

E. Record minutes and distribute copies within one week after meeting to participants, with copies to A/E, Owner, and those affected by decisions made.

1.06 REQUESTS FOR INTERPRETATIONS

A. Definition: Request from Contractor seeking interpretation or clarification of the contract Documents.

B. Procedure: Immediately on discovery of the need for interpretation of the contract Documents, and if not possible to request interpretation at the Progress meeting. Prepare and submit an RFI in the form specified.
1. RFIs shall originate with the Contractor. RFIs submitted by entities other than the Contractor will be returned to the Contractor with no response.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

C. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
   1. Project name.
   2. Date.
   3. Name and trade of entity seeking interpretation.
   4. RFI number, numbered sequentially.
   5. Specification Section number and title and related paragraphs as appropriate.
   6. Drawing number and detail references, as appropriate.
   7. Field dimensions and conditions, as appropriate.
   8. Contractor's suggested solution(s). If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI
   9. Attachments: include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
      a. Supplementary drawings prepared by the Contractor shall include dimensions, thicknesses, and details of affected materials, assemblies and attachments.

D. RFI Form: Software generated form provided by the A/E or Contractor's approved form.
   1. Attachments shall be electronic files in Adobe Acrobat PDF format.

E. A/E's action may include a request for additional information.

F. A/E's action which may result in a change to the Contact Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Contract Modifications Procedures Section.
   1. If so, notify A/E in writing within 10 days of receipt of RFI response.

G. On receipt of A/E's action, update RFI log and immediately distribute the RFI response to affected parties. Review response and notify A/E within 7 days if Contractor disagrees with response.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

END OF SECTION

SECTION 01 32 00

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
   1. Construction Progress Schedule.
   2. Submittals Schedule.
   3. Construction Progress Reporting.

1.02 CONTRACTOR'S PROGRESS SCHEDULE

A. Format: Horizontal bar chart:
   1. Approximate sheet size: 17 by 28 inches.
   2. Provide separate bar for each major item of Work. Arrange in sequence and identify bars with specification section numbers and titles from Project Manual Table of Contents.
   3. Horizontal scale: Time with first work day of each month identified. Adjust scale to show entire construction period plus extensions.
   4. Vertical spacing: Allow space for notations and revisions.

B. Show complete sequence of construction by activity. Indicate:
   1. Dates for beginning and completion of each construction item.
   2. Projected percentage of completion for each item as of first work day of each month and mid-month (each 15 days).
   3. Projected percentage of completion for total Work as of first day of each month.
   4. Work of separate construction phases.
   5. Required delivery dates for Owner furnished products and required completion dates for work by others.
   6. Required dates for return of specific submittals and for selection of finishes.

C. Procedures:
   1. Submit for review by A/E three (3) copies of preliminary Progress Schedule within 20 days of date of Agreement between Owner and Contractor but no later than submission of first payment application.
   2. Revise to address review comments and resubmit.
   3. Update Progress Schedule and submit three (3) copies with each Application for Payment.
      a. Identify progress of each activity to date of submittal and projected completion date.
      b. Show activities modified since last submittal and other identifiable changes.

c. Provide narrative report as needed to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken or proposed and its effect.

D. Use: The Contractor shall endeavor to manage the work in accordance with the scheduling indicated by the first approved Progress Schedule. The intent is to promote good job management, not rigidly bind the Contractor to a planned procedure. For this reason, finish activities such as painting or laying of carpet must not be scheduled concurrently with finish plastering or door installation. The Contractor shall use special care to coordinate efforts of various subcontractors, especially mechanical and electrical, to assure proper completion of their work ahead of general finish operations.

E. Coordinate Contractor's Progress Schedule with the Schedule of Values, Submittals Schedule, payment requests, and other required schedules and reports.

F. No contract work shall be done without an A/E approved progress schedule. The items in the activities for the denoted critical path will determine the controlling operations of the work.

G. During the life of the project, the Contractor shall review the progress schedule with the A/E at the regularly scheduled Progress Meetings unless otherwise specified. The Contractor shall submit a revised progress schedule within 5 working days of the review meeting if the Contractor is behind schedule or if the schedule has been modified. Revised progress schedules must be submitted to and approved by the A/E.

H. If the Contractor deviates from the currently approved progress schedule by not following the logical sequence of the critical path, payment will be withheld for the pay items for the affected activities until the Contractor submits a revised progress schedule and this schedule is approved by the A/E.

I. Reporting: Each month with the Request of Payment, submit a copy of the current Progress Schedule marked to show actual percentage of completion for each category of work, as well as the aggregate percentage of completion.

J. Behind Schedule Progress: If the actual progress curve at any time falls more than 10% behind the proposed curve, the Contractor shall promptly take the steps necessary to get the work back on schedule. It is emphasized that the purpose of this scheduling is to assure orderly management of the project and the pushing of finish activities into areas where rough activities are not completed shall not be tolerated. Neither shall last minute rush scheduling be permitted to enable the Contractor to finish on time if it involves poor construction procedures.

1.03 SUBMITTALS SCHEDULE

A. The Contractor shall prepare and keep current, for the A/E's review, a schedule of submittals which is coordinated with the Contractor's construction schedule and allows the A/E reasonable time to review submittals.

B. Submit three (3) copies of schedule arranged in chronological order by dates required to maintain progress schedule. List the following information in a tabular format and include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates:
   1. Scheduled date for first submittal.
   2. Specification Section number and title.
   3. Name of subcontractor.
   4. Description of the Work covered.

1.04 CONSTRUCTION PROGRESS REPORTING

A. Submit three (3) copies at time of discovery of Conditions affecting Construction Progress.
   1. Immediately on discovery of a difference between field conditions and the Contract Documents, prepare a detailed report.
   2. Submit report with a request for information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Construction Submittals.

B. Related Sections requiring submittals:
1. Section 01 25 00 – Substitution Procedures.
2. Section 01 29 00 – Payment Procedures.
3. Section 01 32 00 – Construction Progress Documentation.
4. Section 01 43 00 – Quality Assurance.
5. Section 01 45 00 – Quality Control.
6. Section 01 60 00 – Product Requirements.
7. Section 01 70 00 – Execution Requirements.
8. Section 01 77 00 – Closeout Procedures.
9. Section 01 78 00 – Closeout Submittals.

1.02 SUBMITTAL TYPES NOT INCLUDED IN THIS SECTION

A. Preconstruction Submittals:
1. Certificates of insurance.
2. Payment and performance bonds.
3. Proposed subcontractor and product lists.
4. Preliminary construction progress schedule.
5. Proposed use of the site and site logistics, including signage.

B. Closeout Submittals:
1. Written notices of substantial and final completion.
2. Final application for payment.
3. Record documents: Record drawings and specifications, addenda, change orders, field orders.
4. O&M data.
5. Spare parts and maintenance materials.
6. Certificates of payment.
7. Release of liens and waiver of debts and claims.
8. Consent of surety to final payment.
9. Executed Warranties.
10. Keying.
11. Materials, Extra Stock and Tools.

1.03 CONSTRUCTION SUBMITTALS

A. Work-related Action and Informational submittals of this section are categorized as follows:
   1. Shop drawings include specially-prepared technical data for this project, including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form for general application to a range of similar projects.
   2. Product data include standard printed information on materials, products and systems; not specially-prepared for this project, other than the designation of selections from among available choices printed therein.
   3. Samples include both fabricated and unfabricated physical examples of materials, products and units of work; both as complete units and as smaller portions of units of work; either from limited visual inspection or (where indicated) for more detailed testing and analysis.
      a. Samples shall be supplied for use by the A/E, and unless specifically requested on the Contractor's cover sheet, will not be returned to the Contractor.
      b. Mock-ups are a special form of samples, which are too large or otherwise inconvenient for handling in specified manner for transmittal of sample submittals.
   4. Design Data Design calculations, mix designs, analyses or other data pertaining to a part of work.
   5. Certificates and Letters of Certification:
      a. Statements printed on the manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Must be dated after award of project contract and clearly name the project.
      b. Document required of Contractor, or of a manufacturer, supplier, installer or Subcontractor through Contractor, the purpose of which is to further quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel qualifications.
   6. Sample Warranties.
   7. Manufacturer's Installation Instructions include preprinted material describing installation of a product, system or material, including special notices and concerning impedances, hazards and safety precautions.

B. QA/ QC and Informational Submittals are categorized as follows and may be delivered in electronic format if desired.
   1. Test reports.
   2. Manufacturer's field reports:
      a. Documentation of the testing and verification actions taken by manufacturer's representative at the job site, in the vicinity of the job site, or on a sample taken from the job site, on a portion of the work, during or after installation, to confirm compliance with manufacturer's standards or instructions.

b. The documentation must be signed by an authorized official of a testing laboratory or agency and must state the test results; and indicate whether the material, product, or system has passed or failed the test.

3. Construction photographs.
4. Draft Applications for Payment.
5. Schedule of values.
6. Construction progress schedules.

C. Individual submittal requirements are specified in applicable sections for each unit of work.

1.04 SUBMITTAL GENERAL REQUIREMENTS

A. Submittals Schedule: Comply with requirements of Division 1 Section "Progress Schedule" for list of submittals and time requirements for scheduled performance of related construction activities.

B. Coordination and Sequencing: Coordinate preparation and processing of submittals with performance of the work so that work will not be delayed by submittals. Coordinate and sequence different categories of submittals for same work, and for interfacing units of work, so that one will not be delayed for coordination of A/E's review with another.

C. Processing Time: Allow enough time for submittal review including time for resubmittals. Time for review shall commence on A/E's receipt of submittal.

D. Submittal Log: The Contractor shall generate and maintain a submittal log which shall include:
1. Every section requiring submittals.
2. Category of submittal required for each section.
3. Status of each category.

1.05 PREPARATION OF SUBMITTALS

A. Shop Drawings:
1. Provide newly-prepared information, on reproducible sheets, with graphic information at accurate scale (except as otherwise indicated), with name of preparer indicated (firm name).
2. Show dimensions and note which are based on field measurement.
3. Identify materials and products in the work shown.
4. Indicate compliance with standards, and special coordination requirements.
5. Do not allow shop drawing copies without appropriate final "Action" markings by A/E to be used in connection with the work.
6. Submit six copies to the A/E of which three will be returned to the Contractor.

B. Product Data:
1. Collect required data into one submittal for each unit of work or system; and mark each copy to show which choices and options are applicable to project.

2. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked, and special coordination requirements.
3. Maintain one set of product data (for each submittal) at project site, available for reference by A/E and others.
4. Do not submit product data, or allow its use on the project, until submittal has been returned with the A/E's final review.
5. Submit six copies to the A/E of which three will be returned to the Contractor.
6. Installer's Copy: Do not proceed with installation of materials, products or systems until final copy of applicable product data is in possession of Installer.

C. Samples:
1. Provide samples for A/E's use. Submit samples where required by a section, for selection or review and confirmation of color, pattern, texture, and "kind". Samples requested for color boards will not be returned to the Contractor.
2. Provide units identical with final condition of proposed materials or products for the work. Include "range" samples (not less than 3 units) where unavoidable variations must be expected, and describe or identify variations between units of each set.
3. Provide full set of optional samples where A/E's selection is required. Prepare samples to match A/E's sample where so indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations, and compliance with standards.
4. A/E will not "test" samples (except as otherwise indicated) for compliance with other requirements, which are therefore the exclusive responsibility of Contractor.

D. Mock-Ups: Mock-ups and similar samples specified in individual work sections are recognized as a special type of sample. Comply with requirements for "samples" to greatest extent possible, and process transmittal forms to provide a record of activity.

1.06 CONTRACTOR'S REVIEW

A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to A/E.

B. At time of submission, note in writing, highlight, circle or otherwise identify any deviations in submittal from Contract Documents. The Contractor must submit in writing, any request for modification to the plans and specifications.
1. Shop drawings and submittals that are submitted to the A/E for review do not constitute "in writing" unless proposed modification has been described on the submittal form, brought to the attention of the A/E, and reason for modification is stated.
2. In any event, the responsibility for proposing changes to the plans and specifications by means of shop drawings or submittals, and receiving approval for such changes, resides with the Contractor. No additional costs for

replacement of unapproved modifications with the original specified materials will be paid to the Contractor.

C. Do not combine items from different specification sections in submittal, unless called for in specifications.

D. Approval Stamp: Stamp each submittal with a uniform, approval stamp.

E. Execute and attach to each submittal, "CONTRACTOR SUBMITTAL FORM" (sample follows this Section), to identify project, date, Contractor, subcontractor, submittal name and number.

F. General Distribution: Provide additional distribution of submittals to subcontractors, suppliers, fabricators, installers, governing authorities and others as necessary for proper performance of the work. Include such additional copies in transmittal to A/E where required to receive "Action" marking before final distribution. Record distributions on transmittal forms.

G. Begin no fabrication or work that requires submittals until return of submittals with A/E's final review.

H. Submittals which are received from sources other than through Contractor's office will be returned by A/E "without action."

1.07 A/E'S REVIEW

A. General: A/E will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. A/E will review submittals and where possible return within 2 weeks of receipt. Where submittal must be held for coordination, Contractor will be so advised by A/E.

C. Submittals requiring a color selection will be held until all Color samples and charts for the project have been received.
1. At that time, Color Boards will be prepared and submitted to the Owner for approval.
2. After final selections have been made by the Owner, those submittals will be processed by the A/E and returned to the Contractor.

D. A/E will affix stamp and initials or signature, and indicate requirements for resubmittal or review of submittal.

E. A/E will return submittals to Contractor for distribution or for resubmission.

F. Submittal Review Stamps:
1. "No Exception Taken": Reviewed for general conformity to the requirements of Drawings and Specifications. Quantities shown not verified. Contractor's full responsibility is in no way relieved by this action.

2. "Make Corrections Noted": Reviewed and noted for general conformity to requirements of Drawings and Specifications. Quantities shown not verified. Contractor's full responsibility is in no way relieved by this action.
3. "Revise & Resubmit": Reviewed and noted for general conformity to requirements of Drawings and Specifications. Provide missing information, make corrections, and resubmit as noted.
4. "Rejected/Resubmit": Reviewed and not accepted. Provide product data, shop drawings, certifications, warranties, etc which meet or exceed the requirements of the Drawings and Specifications and resubmit.
5. "Receipt Acknowledged": Submittal for Section is not required or submittal is being held by A/E for coordination of work with that of another Section.

G. A/E review does not constitute acceptance or responsibility for accuracy or dimensions, nor shall it relieve the Contractor from meeting any requirements of the Contract Documents, nor shall it constitute approval for any modification from the Contract Documents unless such modifications are specifically stated as such on the submittal and specifically allowed by the Engineer.

H. A/E to return submittals with only cursory review when it becomes apparent the submittals are not acceptable, and/or incomplete.

I. Payment and Time for Review of Excessive Submittals After First Resubmittal:
1. Include Contractor's statement to A/E that all costs shall be paid by the Contractor and executed by Change Order for all A/E's review time and costs at A/E's standard billing rates.
2. Submittals will be reviewed by A/E at convenience of the A/E.
3. Delays caused by the need for resubmittal shall not constitute basis for claim.

1.08 NOT ACCEPTED AND REJECTED SUBMITTALS

A. Contractor shall make corrections required by the A/E. If the Contractor considers any correction or notation on the returned submittals to constitute a change to the contract drawings or specifications; notice as required under the clause entitled, "Changes," is to be given to the A/E.

B. Contractor is responsible for the dimensions and design of connection details and construction of work. Failure to point out deviations may result in the Owner requiring rejection and removal of such work at the Contractor's expense.

C. If changes are necessary to submittals, the Contractor shall make such revisions and submission of the submittals in accordance with the procedures above. No item of work requiring a submittal change is to be accomplished until the changed submittals are approved.

1.09 REVIEWED AND REVIEWED AND NOTED SUBMITTALS

A. The A/E's review or acceptance of submittals is not to be construed as a complete check, and indicates only that the general method of construction, materials, detailing and other information are satisfactory.

B. Review will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the General Conditions of the Contract is responsible for dimensions, and the satisfactory construction of all work.

C. After submittals have been reviewed by the A/E, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

#	CONTRACTOR SUBMITTAL FORM	
Specification No. Title/Description:	Project: **Alejandro Ruiz Senior Center Reroof**	Contractor's Submittal No.: Date: Product Description:
	CONTRACTOR:	Dates of any previous submissions:
	Subcontractor / Supplier:	Manufacturer:
	Specification No.:	Drawing Nos.:
	Are there any deviations to the Contract Documents? ☐ No ☐ Yes (Explain and Identify:) _____ *Undisclosed deviations/modifications do not relieve the Contractor from the obligation to provide the specified product and detail of installation, and may be cause for rejection of the Work. Deviations and modifications must be listed here or in a separate Request for Substitution.*	

CONTRACTOR'S CERTIFICATION: This submittal has been reviewed by the Contractor in compliance with Submittal Procedures of the CONTRACT DOCUMENTS' SPECIFICATIONS. Any deviations or substitutions to the CONTRACT DOCUMENTS have been identified above and submitted in compliance with the CONTRACT DOCUMENTS.

If this is a re-submittal, identify on a sheet(s) attached to this form all responses to comments on the previous submittal and all changes other than those specifically requested by the A/E on the previous submittal.

Signed _____ Date:

A/E'S REVIEW RESPONSE

(*Refer to Submittal Specification for explanation of categories.*)

Date Received:	No. Copies Received:
☐ **NO EXCEPTION TAKEN**	
☐ ☐ **MAKE CORRECTIONS NOTED**	
☐ ☐ **REVISE & RESUBMIT**	
☐ ☐ **REJECTED/RESUBMIT**	
☐ ☐ **RECEIPT ACKNOWLEDGED**	
By:	Date:
Date Returned:	No. Copies Returned:
A/E'S COMMENTS, IF ANY:	
A/E'S ATTACHMENTS, IF ANY:	

Note: DO NOT combine items from different specification sections into one submittal unless called for in the Section. If provisions in the "General Conditions" conflict with this form, the provisions as stated in the "General Conditions" shall prevail.

MOLZENCORBIN
ENGINEERS | ARCHITECTS | PLANNERS
2701 Miles Road SE, Albuquerque, NM 87106

END OF SECTION

SECTION 01 42 00

REFERENCE STANDARDS

PART 1 GENERAL

1.01 SUMMARY

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. Back-Up: "Back-up" as relating to any item, product, or documents within the scope of this Contract, shall mean the total supporting and substantiating data which forms the basis of the summary as it relates to products, means, methods, costs, certificates, and similar items. Back-up shall include pertinent data required to support the summary including, but not necessarily limited to, the following:
1. Technical data, reports, and certifications.
2. Costs, both materials and labor, direct and indirect.
3. Manufacturer's recommendations.
4. Means and methods.
5. History.
6. Samples.
7. Comparative analysis.
8. Testing laboratory reports, tests, and recommendations.
9. Code authority approvals and authorizations.
10. Justification.

1.02 DEFINITIONS

A. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

B. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

C. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

D. "Provide": Furnish and install, complete and ready for the intended use.

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

1.03 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.

C. Conflicting Requirements: 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. Refer uncertainties and requirements that are different, but apparently equal, to A/E for a decision before proceeding.

D. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to A/E for a decision before proceeding.

E. Copies of Standards: Each entity engaged in construction on Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1.04 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list:

AA	Aluminum Association
AAMA	American Architectural Manufacturing Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ADAAG	Americans with Disabilities Accessibility Act Guidelines
ADC	Air Diffusion Council
AHA	American Hardboard Association

AHC	Architectural Hardware Consultant
AHJ	Authority Having Jurisdication
AI	Asphalt Institute
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
AOC	Architectural Openings Consultants
APA	American Plywood Association
APWA	American Public Works Association
ASAE	American Society of Agricultural Engineers
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWI	Architectural Woodwork Institute
AWWA	American Water Works Association
AWS	American Welding Society
CBM	Certified Ballast Manufacturers
CDC	Certified Door Consultants
CFR	Code of Federal Regulations
CID	Construction Industries Division
CPSC	Consumer products Safety Commission

CRSI	Concrete Reinforcing Steel Institute
CSA	Canadian Standards Association
DHI	Door and Hardware Institute
EEI	Edison Electric Institute
EHC	Electrified Hardware Consultant
ETL	Electrical Testing Laboratories
FM	Factory Mutual
FS	Federal Specification General Services Administration Specifications and Consumer Information Distribution Section (WFSIS)
GA	Gypsum Association
GANA	Glass Association of North America
HMMA	Hollow Metal Manufacturers Association
HPVA	Hardwood Plywood and Veneer Association
IBC	International Building Code
ICEA	Insulated Cable Engineers Association
IEBC	International Existing Building Code
IECC	International Energy Conservation Code
IEEE	Institute of Electrical and Electronics Engineers
IFC	International Fire Code
ISA	Instrument Society of America
LEED	Leadership in Energy and Environmental Design
MIL	Military Specification Naval Publications and Forms Center

MPI	Master Painters Institiute
NAAMM	National Association of Architectural Metal Manufacturers
NACE	National Association of Corrosion Engineers
NEC	National Electric Code
NEMA	National Electrical Manufacturers' Association
NESC	National Electric Safety Code
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NMCBC	New Mexico Commercial Building Code Code Regulations Licensing Department Construction Industries Divisions
NMDWS	New Mexico Department of Workforce Solutions
NRCA	National Roofing Contractors Association
NWWDA	National Wood Window and Door Association
OSHA	Occupational Safety & Health Administration
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
PS	Product Standard US Department of Commerce
SDI	Steel Door Institute
SEFA	Scientific Equipment and Furniture Association
SIGMA	Sealed Insulating Glass Manufacturer's Association
SJI	Steel Joist Institute
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association, Inc.
SSPC	Steel Structure Painting Council

TMS	The Masonry Society
UL	Underwriters' Laboratories, Inc.
UMC	Uniform Mechanical Code
UPC	Uniform Plumbing Code International Association of Plumbing/Mechanical Officials
WWPA	Western Wood Products Association

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 43 00

QUALITY ASSURANCE

PART 1 GENERAL

1.01 SUMMARY

A. Provisions for quality assurance apply to workmanship and craftsmanship applied to work executed in the performance of the Contract.
   1. Perform work with suitable qualified personnel to produce work of specified quality.
   2. Refer to applicable Standards and Codes.
   3. Refer to Workmanship requirements of trade associations.
   4. Test materials in accordance with applicable standards.
   5. Provide field samples and mock-ups to establish acceptable level of quality and a basis for judging work.
   6. Follow inspection requirements.

B. Related Work Described Elsewhere: Provisions of trade associations, manufacturer's printed instructions, recommendations, methods, and criteria for application and installation of systems and assemblies, various technical sections of these specifications, the Drawings, and References Section.
   1. Provisions of work furnished under this Contract and installed under this Contract.
   2. Provisions of work installed under this Contract furnished by others.

1.02 QUALIFICATIONS

A. Project Superintendent:
   1. The superintendence of the General Contractor for the total overall Work shall be administered by one qualified person who is thoroughly trained and experienced in the duties of a Project Superintendent.
   2. Project Superintendent shall have a minimum of 10 years of construction experience, with a minimum of 5 years being in commercial construction.
   3. Project Superintendent shall demonstrate successful completion of a minimum of five projects of similar scope and budget through a resume and letters of recommendation.
   4. The Project Superintendent shall exercise general supervision over the Work, have the decision-making authority of the Contractor, and be familiar with the specified requirements and methods to be used in the scheduling, supervision, performance, and execution of the Work.
   5. Project Superintendent's qualifications are subject to review and approval by the Owner and A/E and shall not be reassigned until final acceptance of the Work, unless permitted in writing by the Owner.

B. Subcontractors: The superintendence of trades involved in work of this project shall be administered, supervised, and directed by at least one qualified journeyman foreman who is thoroughly trained and skilled in the arts generic to his trade and such qualifications may be subject to review and approval by the A/E.

C. Workmen: Workmen engaged in the performance of work comprising a part of the total Work of this Contract shall be adequate in number, thoroughly trained and experienced in the installation of the specified and selected products and who are completely familiar with the requirements of their respective work and this Work.

D. Apprentice: Apprentice personnel shall, in the performance of their respective Work, be supervised and directed in their duties under the competent supervision and direction of experienced journeymen experienced and skilled in their trade.

E. Manufacturers: Products used in the work of this project shall be produced by recognized manufacturers regularly engaged in the manufacturing of such and similar products with a history of successful production of products specified in the various sections of these specifications and as otherwise approved by the A/E.

1. In the use of equal or similar manufactured products proposed for inclusion into the Work, comply with the provisions of Submittal Section.

F. Fabricators, Suppliers, and Personnel: Fabricators, erectors, suppliers, installers, and applicators shall have not less than five years continuous experience in the execution of their respective duties and their qualifications may be subject for review and approval by the A/E.

G. Licensed Applicators: Applicators of specific systems, licensed by a manufacturer or company of such products, shall be qualified in every respect required by the manufacturer or company to the extent permitting the issuance of all required guarantees, warranties, and certificates of compliance to the approval of the A/E.

1.03 SUBMITTALS

A. Within 10 days following the execution of the Contract, submit the personal work history of the Project Superintendent proposed to be assigned to the project to its final conclusion.

B. Submittal may be in the form of a letter or standard employment “Job Application” covering the person’s last 5 years work history and contact source, names, and telephone numbers for use in verification of qualifications and recommendations.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 GENERAL

A. General: Prior to any work being performed in the execution of the Contract, personnel who supervise, or otherwise direct the scope of their respective work, shall become thoroughly familiar with surface conditions affecting their work, the interface requirements of all other trades whose work affects their work, and become completely knowledgeable with the specified materials and methods needed for the proper coordination and execution of the work.

END OF SECTION

SECTION 01 45 00

QUALITY CONTROL

PART 1 GENERAL

1.01 WORK INCLUDED

A. Quality Control and Control of Installation.

B. Tolerances.

C. Testing and Laboratory Services:
1. Provisions of cooperation with the selected testing laboratory and all others responsible for testing and inspection of the Work.
2. Requirements for testing may be described in various other sections of these specifications.
3. Where no testing requirements are described, but the Owner decides that testing is required, the Owner may direct that such testing be performed under current standards for testing. Payment for such testing will be made as described in this section.
4. Contractor shall select a testing laboratory subject to the approval of the Owner.

D. Special Inspection Services: In addition to the inspections provided by CID, the New Mexico Building Code mandates that the Owner or the Engineer or Architect acting on behalf of the owner employ one or more special inspectors who shall provide inspections during construction on elements that are critical to the safety of the structure. It is important to note that these special inspectors are not on the project in lieu of the regular CID building inspector, but rather they are on the project in addition to the regular CID building inspector.
1. Where the New Mexico Building Code mandates that the Owner employ Special Inspectors, Special Inspection Agency shall be paid by the Contractor.
2. For special inspection type and frequency refer to Structural Drawings Quality Insurance Plan for Schedule.
3. The Special Inspection Agency shall be an agency approved by the Owner as being qualified by knowledge and experience to perform the Special Inspection for the category of work being constructed.
4. More than one Special Inspector may be required to provide the varied knowledge and experience necessary to adequately inspect all of the categories of work requiring Special Inspection.
5. Requirements for inspections may be described in various sections of these specifications.

E. Manufacturers' Field Services: Requirements for manufacturers' field services may be described in various other sections of these specifications.

1.02 QUALITY CONTROL AND CONTROL OF INSTALLATION

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

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

C. When manufacturers' instructions conflict with Contract Documents, request clarification from A/E before proceeding.

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

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

F. Verify field measurements are as indicated on Shop Drawings or as instructed by manufacturer.

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

1.03 TOLERANCES

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

B. Comply with manufacturers' tolerances. When manufacturers' tolerances conflict with Contract Documents, request clarification from A/E before proceeding.

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

1.04 TESTING AND INSPECTION SERVICES

A. Codes and Standards:
   1. Testing, when required, will be in accordance with pertinent codes and regulations and with selected standards of the American Society for Testing and Materials.
   2. Inspections will be conducted at intervals required by current building codes and regulations and include:
      a. Regulatory Inspections.
      b. Special Inspections:
         1) In addition to the inspections provided by the Code Authority having Jurisdiction, the New Mexico Building Code mandates that the Owner or the Engineer or Architect acting on behalf of the Owner employ one or more Special Inspectors who shall provide inspections during construction on elements that are critical to the safety of the structure. It is important to note that these Special Inspectors are not on the project in lieu of the regular AHJ building

inspector, but rather they are on the project in addition to the regular building inspector.

c. Seismic Inspections.
d. Structural Observations.

B. Qualifications of testing agency or laboratory: The testing agency or laboratory will be qualified to the Owner's approval in accordance with ASTM E329.

C. Agency Responsibilities:
1. Cooperate with A/E and Contractor in performance of duties.
2. Provide qualified personnel to perform required tests and inspections.
3. Notify A/E and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
4. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
5. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
6. Do not release, revoke, alter, or increase requirements of the Contract. Documents or approve or accept any portion of the Work.
7. Do not perform any duties of Contractor.

D. Agency Reports:
1. Prepare and submit certified written reports that include the following:
   a. Date of issue.
   b. Project title and number.
   c. Name, address, and telephone number of testing agency.
   d. Dates and locations of samples and tests or inspections.
   e. Names of individuals making tests and inspections.
   f. Description of the Work and test and inspection method.
   g. Identification of product and Specification Section.
   h. Complete test or inspection data.
   i. Test and inspection results and an interpretation of test results.
   j. Ambient conditions at time of sample taking and testing and inspecting.
   k. Name and signature of laboratory inspector.
   l. Recommendations on retesting and reinspecting.
2. Promptly process and distribute required copies of reports and related instructions to ensure necessary retesting and replacement of materials with the least possible delay in progress of the Work.

E. Special Inspection Reports:
1. Provide Special Inspection Reports listing all construction special inspections or reviews of testing performed during that month, noting all uncorrected deficiencies, and describing the corrections made both to these deficiencies and to previously reported deficiencies.
2. Each report shall be signed by the special inspector who performed the special inspection or reviewed the testing, regardless of whether they reported any deficiencies.
3. Each report shall be signed by the Contractor and submitted to the Engineer of Record.

F. Limits on Testing Authority:
   1. Agency or laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.
   2. Agency or laboratory may not approve or accept any portion of the Work.
   3. Agency or laboratory may not assume duties of Contractor.
   4. Agency or laboratory has no authority to stop the Work.

G. Contractor Responsibilities: Cooperate with agencies performing required tests, inspections, and similar quality-control services. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
   1. Access to the Work.
   2. Incidental labor necessary to facilitate tests and inspections.
   3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
   4. Preliminary design mix proposed for use for material mixes that require control by testing agency.

1.05 PAYMENT FOR TESTING

A. The Contractor will pay for initial testing and inspections services required by these specifications, the Quality Assurance Plans shown on the drawings and building code or regulatory agencies. Where the New Mexico Building Code mandates that the Owner employ Special Inspectors, Special Inspectors shall be selected by the Owner and paid by the Contractor.

B. When there is work which the Owner requires tested and inspected in addition to specified and required tests, the Contractor will pay for the tests if the work does not comply with required standard and specifications. The Owner will pay for the tests if the work does comply with the required standards and specifications.

C. Retesting and Re-inspecting: When initial reports indicate non-compliance with the Contract Documents, all subsequent retesting and re-inspecting occasioned by the non-compliance shall be performed by the same agency and costs thereof will be paid by the Contractor at no additional cost to the Owner.

1.06 CODE COMPLIANCE TESTING AND INSPECTING

A. Inspections and tests required by codes, ordinances, or by a plan approval authority, and which are made by a legally constituted authority, shall be the responsibility of and shall be paid for by the Contractor, unless otherwise provided in the Contract Documents.

1.07 CONTRACTOR'S CONVENIENCE TESTING AND INSPECTING

A. Inspecting and testing performed exclusively for the Contractor’s convenience shall be the sole responsibility of the Contractor.

1.08 INSPECTION BY OWNER'S PERSONNEL

A. From time to time, personnel in the employ of the Owner may inspect the Work where the work is in progress, but shall have no authority to direct the Contractor or request changes in the Work except through the A/E.

1.09 MANUFACTURERS' FIELD SERVICES

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

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 TAKING SPECIMENS

A. Specimens for testing and samples, unless otherwise provided in the Contract documents, will be taken by the testing personnel. Sampling equipment and personnel will be provided by the testing laboratory. Deliveries of specimens and samples to the testing laboratory will be performed by the testing laboratory.

3.02 SCHEDULES FOR TESTING AND INSPECTING

A. By advance discussion with the selected agency, determine the time required for the agency to perform its tests and inspection and to issue each of its findings.

B. Provide required time within the construction schedule.

C. When changes of construction schedule are necessary during construction, coordinate such changes of schedule with the agency as required.

D. When the agency is ready to test or inspect according to the established schedule, but is prevented from performing its duties due to incompleteness of the Work, all extra charges attributable to the delay shall be back-charged to the Contractor and shall not be borne by the Owner.

3.03 ALTERNATIVE INSPECTION PROCEDURE

A. The A/E shall have the right to require alternative inspection procedures other than as specified when, in the A/E's judgment, other inspections are required to demonstrate compliance with the contract requirements. Costs of such alternative inspections will be borne by the Owner if products are found to comply; otherwise, costs shall be borne by the Contractor.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SUMMARY

A. Types of temporary facilities and controls may include, but not be limited to:
   1. Temporary Utilities.
   2. Construction Facilities.
   3. Temporary Construction.
   4. Construction Aids.
   5. Vehicular Access.
   6. Temporary Barriers.
   7. Temporary Controls.
   8. Project Identification.
   9. Removal of Utilities, Facilities, and Controls.

1.02 CONDITIONS OF USE

A. The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
   1. Keep temporary services and facilities clean and neat.
   2. Minimize waste and abuse; limit availability of temporary facilities to essential and intended uses.
   3. Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.
   4. Relocate temporary services and facilities as required by progress of the Work.

B. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

C. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

1.03 TEMPORARY UTILITIES

A. Types of temporary services required may include, but not be limited to water service, sewer and drainage, sanitary facilities, heating and cooling, ventilation and humidity control, electrical power, electrical distribution, lighting, surface drainage, and telephones.
   1. Standards: Comply with ANSI A10.6, NEC's "Temporary Electrical Facilities," and NFPA 241.

B. Water Service: Provide rubber hoses as necessary to serve Project site. Where non-potable water is used, mark each outlet with adequate health-hazard warning signs.

C. Sewers and Drainage:
1. If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully. Connect temporary sewers to system as directed by sewer department officials.
2. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds, and similar facilities.
3. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off-site in a lawful manner.
4. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. After heavy use, restore normal conditions promptly.
5. Filter out excessive soil, construction debris, chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.
6. Provide temporary filter beds, settlement tanks, separators, and similar devices to purify effluent to levels acceptable to authorities having jurisdiction.

D. Dewatering Equipment and Drains: Comply with requirements in applicable Division 32 Sections for temporary drainage and dewatering facilities, and operations not directly associated with construction activities included in individual Sections. Where feasible, use same facilities. Maintain Project site, excavations, and construction free of water.

E. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
1. Provide portable, UL rated-fire extinguishers, installed on walls on mounting brackets, visible and accessible from space being served, with sign mounted above.
2. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.
3. Store combustible materials in containers in fire-safe locations.
4. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for firefighting.
5. Prohibit smoking in occupied buildings and hazardous fire-exposure areas.
6. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition.

F. Heating and Cooling:
1. Heating Units: Listed and labeled, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use for type of fuel being consumed.

2. Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity.
3. Select equipment from that specified that will not have a harmful effect on completed installations or elements being installed.

G. Ventilation and Humidity Control:
1. Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity.
2. Select equipment from that specified that will not have a harmful effect on completed installations or elements being installed.
3. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

H. Electrical Power and Distribution System:
1. General: Where possible, engage appropriate local utility company to install temporary service or connect to existing service. Where utility company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with utility company recommendations. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services. Provide adequate capacity at each stage of construction. Before temporary utility is available, provide trucked-in services. Obtain easements to bring temporary utilities to Project site where Owner's easements cannot be used for that purpose.
2. Electric Power and Distribution Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnecting means, automatic ground-fault interrupters, and main distribution switchgear.
   a. Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may be nonmetallic sheathed cable.
   b. Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
   c. Receptacles: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light and adequate for connection of power tools and equipment.
   d. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
3. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions.
   a. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

b. Provide one 100-W incandescent lamp per 500 sq. ft., uniformly distributed, for general lighting, or equivalent illumination.
c. Provide one 100-W incandescent lamp every 50 feet in traffic areas.
d. Provide one 100-W incandescent lamp per story in stairways and ladder runs, located to illuminate each landing and flight.
e. Install exterior-yard site lighting that will provide adequate illumination for construction operations, traffic conditions, and signage visibility when the Work is being performed.

I. Use Charges:
1. Water Service: Use water from Owner's existing water system without metering and without payment of use charges.
2. Electric Power Service: Use electric power from Owner's existing system without metering and without payment of use charges.

1.04 CONSTRUCTION FACILITIES

A. Locate field offices, storage sheds, sanitary facilities, and other facilities for easy access. Coordinate location with Owner.

B. Maintain support facilities until Substantial Completion. Remove immediately after Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

C. Sanitary Facilities: Provide temporary toilets, wash facilities. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.
1. Single-occupant self-contained toilet units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material, including hand-sanitizing capability.
2. Shield toilets to ensure privacy.
3. When toilets for public use are included in the Work, provide accessible unit located on an accessible route and provide separate facilities for males and females.
4. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.

D. Drinking Water: Provide drinking-water fountains or containerized bottled drinking water, or tap supply including paper cups.

E. Field Offices: With lockable entrances, operable windows, and serviceable finishes; heated and air conditioned; on foundations adequate for normal loading. Provide space for Project meetings, with table and chairs.

F. Storage Areas and Sheds: Size to storage requirements for products of individual Sections, allowing for access and orderly provision for maintenance and for inspection of products to requirements of Section.

1.05 TEMPORARY CONSTRUCTION

A. Provide access, ramps, stairs, ladders and similar temporary access elements as required to perform the work and facilitate its inspection during installation.

B. Comply with inspection requests from Authorities having Jurisdiction.

C. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.
   1. Cover finished permanent stairs with protective covering of plywood or similar material so finishes will be undamaged at time of acceptance.
   2. Existing Stair Usage: Use of Owner's existing stairs will be permitted, as long as stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
   3. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If, despite such protection, stairs become damaged, restore damaged areas so no evidence remains of correction work.

D. When permanent stairs are available for access during construction, finishes shall be covered and protected from damage. Damage to existing conditions will be repaired to the owner's satisfaction, prior to Project Completion.

E. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.
   1. Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved in writing by A/E and Owner. Provide materials suitable for use intended.
   2. Provide temporary weathertight enclosure for building exterior to accommodate acceptable working conditions and protection for products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons.
      a. Provide access doors with self-closing hardware and locks.
      b. Gypsum Board: 5/8" thick Type X for fire-rated areas.
   3. Provide temporary exitways as required by the Fire Marshall or Authority having jurisdiction.
   4. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures.
   5. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
   6. Close vertical openings of 25 sq.ft. or less with plywood or similar materials. Close horizontal openings in floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction. Lumber and Plywood: Comply with requirements in Division 06 Section.

1.06 CONSTRUCTION AIDS

A. Lifts and Hoists: Provide facilities for hoisting materials and personnel. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

1.07 VEHICULAR ACCESS

A. Temporary Roads: Construct and maintain temporary trafficways adequate to support loads and to withstand exposure to traffic during construction period.
   1. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.

1.08 TEMPORARY BARRIERS

A. Site Enclosure Fence: Before construction operations begin install enclosure fence with lockable entrance gates. Locate where indicated, or enclose entire Project site or portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering site except by entrance gates.
   1. Chain-Link Fencing: Minimum 2-inch, 0.148-inch thick, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch OD line posts and 2-7/8-inch OD corner and pull posts.

B. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

C. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.

D. Temporary Partitions: Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.
   1. Dust Control:
      a. Execute Work by methods to minimize raising dust from construction operations.
      b. Provide positive means to prevent air-borne dust from dispersing into atmosphere.
   2. Noise Control:
      a. Provide methods, means, and facilities to minimize noise produced by construction operations.
      b. Avoid using tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near Project site.

1.09 TEMPORARY CONTROLS

A. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

C. Erosion and Sediment Control: Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation. Minimize surface area of bare soil exposed at one time. Provide temporary measures including berms, dikes, and drains, and other devices to prevent water flow. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

D. Stormwater Control:
1. Stormwater pollution prevention plan: In order to discharge stormwater from a construction site, construction projects that disturb 1 acre or more of land must seek coverage under a National Pollutant Discharge Elimination System (NPDES) general construction permit. Disturbance includes, but is not limited to, soil disturbance, clearing, grading, and excavation.
   a. EPA is the Permitting Authority, Permit Number: NMR150000.
   b. Additionally, see Part 10 of the (CGP) - NPDES Construction General Permit for Stormwater Discharges from Construction Activities.
2. Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of stormwater from heavy rains.
3. Compliance with Storm Drainage Discharge Requirements:
   a. Contractor shall meet all requirements of the most current version of the NPDES General Permit for Discharge from Construction Activities (CGP).
   b. Contractor shall file a Notice of Intent (NOI) at least 14 days prior to commencing earth-disturbing activities and is required to use EPA's electronic NOI system or "eNOIsystem" to prepare andsubmit the NOI.
      1) In addition to submitting the Contractor's NOI, the Contractor shall assist the Owner in a timely fashion with the preparation and submittal of the NOI that is required to be submitted by the Owner.
   c. Contractor shall file a Notice of Termination (NOT) and is required to use EPA's electronic NOI system or "eNOIsystem" to prepare and submit the NOT.
      1) In addition to submitting the Contractor's NOT, the Contractor shall assist the Owner with the preparation and submittal of the NOT that is required to be submitted by the Owner.

E. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with pollution and environmental control requirements of authorities having jurisdiction.

F. Pest and Rodent Control: Before deep foundation work has been completed, retain a local exterminator or pest-control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Engage this pest-control service to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Obtain extended warranty for Owner. Perform control operations lawfully, using environmentally safe materials.

G. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from construction damage. Protect tree root systems from damage, flooding, and erosion.

1.10 PROJECT IDENTIFICATION

A. Project Identification and Temporary Signs:
   1. Project identification sign:
      a. Engage an experienced sign painter to apply graphics.
      b. Sign size: 4’ x 8”
      c. Sign material: 0.75 inch thick exterior grade plywood.
      d. Supports: Two, 4” x 4” x 8’ supports, sign bolted to supports.
      e. Artwork: Graphic file will be supplied by Owner.
   2. Prepare temporary signs to provide directional information to construction personnel and visitors.
   3. Install where directed to inform public and persons seeking entrance to Project.
   4. Do not permit installation of unauthorized signs.
   5. Maintain signs and supports in a neat, clean condition; repair damages to structure, framing, or sign.

1.11 BULLETIN BOARD

A. Furnish and maintain bulletin board adjacent to field office. Display the following throughout construction period:
   1. Wage rates.
   2. Safety requirements.
   3. Official notices and announcements.

1.12 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. At earliest feasible time, when acceptable to Owner, change over from use of temporary utility to use of permanent service.

B. Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 1 Section "Closeout Procedures."

C. Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for selecting products for use in Project
   1. Product Delivery, Storage, and Handling.
   2. Product Warranties.
   3. Product Options.
   4. Reuse of Existing Materials.

B. See individual specification sections for specific requirements .

1.02 DEFINITIONS

A. For the purposes of this Specification Section, the terms “material and equipment” and “products” have the same meaning and are used interchangeably.
   1. Named Products: Items identified by manufacturer’s product name, including make or model number or other designation, shown or listed in manufacturer’s published product literature that is current as of date of the Contract Documents.
   2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
   3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Manufacturer’s Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

1.03 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on project, product selected shall be compatible with other products incorporated into the Project, even if other products were also options.

B. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.

1.04 PRODUCT DELIVERY REQUIREMENTS

A. Transport and handle products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.05 PRODUCT STORAGE AND HANDLING REQUIREMENTS

A. Store and protect products in accordance with manufacturers' instructions.

B. Store with seals and labels intact and legible.

C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

D. For exterior storage of fabricated products, place on sloped supports above ground

1.06 PROTECTION AFTER INSTALLATION

A. Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove coverings when no longer needed.

1.07 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer’s disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

B. Submittal Time: Comply with requirements in Division 01.

1.08 PRODUCT OPTIONS

A. General Product Requirements:
   1. Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
   2. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
   3. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
   4. Limit selection to products with warranties not in conflict with requirements of the Contract Documents.

5. Where products are accompanied by the term "as selected," A/E will make selection.
    a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, A/E will select color, pattern, or texture from manufacturer's product line that does not include premium items.
    b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, A/E will select color, pattern, or texture from manufacturer's product line that includes both standard and premium items.
6. Where products are accompanied by the term "match sample," sample to be matched is sample provided by A/E.
7. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
8. Comply with size, make, type and quality specified, or as specifically approved in writing by the A/E.

B. Manufactured and Fabricated Products:
1. Design, fabricate and assemble in accordance with the referenced engineering and shop practices.
2. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.
3. Two or more items of the same kind shall be identical, by the same manufacturer.
4. Products shall be suitable for service conditions.
5. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically requested by the Contractor and favorably reviewed by the A/E.
6. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

C. Selection Criteria:
1. Products Specified Only By Reference Standard: select any product meeting that standard.
2. Products Specified By Naming Several Products Or Manufacturers: select any one of the products or manufacturers named, which complies with the specifications; no options or substitutions.
3. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit request for substitution for any manufacturer not named in accordance with the following article.
    a. Other manufacturers' products may be accepted, provided sufficient information is submitted to allow the A/E to determine that products proposed as substitutions are equivalent to those named.
    b. Contractor must submit written request for substitutions for any product or manufacturer not specifically named.
    c. Proof of product equivalency is the Contractor's responsibility.
    d. A/E and the named manufacturer (when manufacturer desires) shall be the judge of the acceptability of the proposed product substitution

4. Products specified by naming only one product or manufacturer shall be considered to be the "Basis of Design." The use of a Brand Name or Manufacturer within these specifications is for the purpose of describing the standard of quality, performance and characteristics desired and is not intended to limit or restrict competition.
5. "Basis of Design" provides the performance and operational requirements of the system
    a. Term indicates specific product or system used as basis for design
    b. Manufacturers may submit their equivalent product, but only if product complies with or is superior to specified requirements, functional design and warranty. Product must also meet aesthetic characteristics of specified product wherever appearance is critical in the opinion of the Architect. .
    c. Products that obviously differ in appearance and quality from "Basis of Design Product" will be rejected.

1.09 REUSE OF EXISTING MATERIAL

A. Except as specifically indicated or specified, materials and equipment removed from an existing structure shall not be used in the completed Work.

B. For material and equipment specifically indicated or specified to be reused in the Work:
1. Use special care in removal, handling, storage, and reinstallation to assure proper function in the completed Work.
2. Arrange for transportation, storage, and handling of products which require off-site storage, restoration or renovation. Include all costs for such work in the Bid.

1.10 MANUFACTURER'S INSTRUCTIONS

A. When Contract Documents require installation of work to comply with manufacturer's instructions, such instructions must be included with:
1. Shop Drawing and/or product data submitted if an operation and maintenance manual is not required.
2. Operation and maintenance data if required.

B. Handle, install, connect, clean, condition, and adjust products in strict accordance with such instructions and in conformity with specified requirements.
1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with A/E for further instructions.
2. Do not proceed with work without clear instructions.

C. Perform work in accordance with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 70 00

EXECUTION REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for Execution of the Work, including, but not limited to, the following:
   1. Installation.
   2. Field Engineering.
   3. Cutting and patching.
   4. Protecting installed construction.
   5. Progress cleaning.

1.02 INSTALLATION

A. Utility Requirements:
   1. The Contractor shall arrange for all spotting of lines by utility companies in advance of any excavation work.
   2. Verify utility requirements and characteristics of equipment are compatible with facility utilities. Coordinate work of various specification sections having interdependent requirements for installing, connecting to, and placing in service such equipment.

B. Space Requirements:
   1. Coordinate space requirements and installation of mechanical, electrical, and other work shown diagrammatically on Drawings. Follow routing shown for pipes, ducts, and wireways as closely as practicable. Utilize spaces efficiently to maximize accessibility for other installations, maintenance, and repairs.
   2. Where space is limited, coordinate installation of components to ensure maximum access for maintenance. Ensure space provided around equipment and fixtures complies with applicable codes.

C. Concealment: In finished areas, conceal pipes, ducts, and wire ways within construction except as otherwise indicated. Where practical, conceal supports, fasteners, and other attachment devices.

D. Arrangement:
   1. Unless otherwise indicated, installations shall be aligned vertically and horizontally. Place piping, conduit, wire ways, and other linear items parallel with lines of building.
   2. Coordinate mounting heights and spacing of components so that finished work is neat and orderly with organized appearance.
   3. Repetitive items such as hangers and fasteners shall be equally spaced unless indicated otherwise.

E. Blocking, anchors, and supports: Determine and coordinate requirements for blocking, anchors, and supports needed for proper installation of products. Provide necessary components whether or not indicated on Drawings or specified.

F. Finished surfaces: Coordinate locations of fixtures, boxes, and other recessed or surface mounted items with finish elements and grades to ensure proper installation and neat appearance.

G. Openings made in installed exterior surfaces shall be closed to protect construction from weather and extremes of temperature and humidity.

1.03 FIELD ENGINEERING

A. Employ Registered Land Surveyor acceptable to Owner.

B. Locate and protect survey control and reference points. Promptly notify A/E of discrepancies discovered.

C. Control datum for survey is that shown on Drawings.

D. Verify set-backs and easements; confirm drawing dimensions and elevations.

E. Provide field engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.

F. Maintain complete and accurate log of control and survey work as Work progresses.

1.04 CUTTING AND PATCHING

A. Employ skilled and experienced installer to perform cutting and patching.

B. Submit written request in advance of cutting or altering elements affecting:
1. Structural integrity of element.
2. Integrity of weather-exposed or moisture-resistant elements.
3. Efficiency, maintenance, or safety of element.
4. Visual qualities of sight exposed elements.

C. Execute cutting, fitting, and patching including excavation and fill, to complete Work, and to:
1. Fit the several parts together, to integrate with other Work.
2. Uncover Work to install or correct ill-timed Work.
3. Remove and replace defective and non-conforming Work.
4. Remove samples of installed Work for testing.
5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.

D. Execute work by methods to avoid damage to other Work, and to provide proper surfaces to receive patching and finishing.

E. Identify hazardous substances or conditions exposed during the Work to A/E for decision or remedy.

F. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.

G. Remove unsuitable material not marked for salvage, including rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work. Remove debris and abandoned items from area and from concealed spaces.

H. Cut masonry and concrete materials using masonry saw or core drill.

I. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

J. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.

K. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 84 00, to full thickness of penetrated element.

L. Remove, cut, and patch Work in manner to minimize damage and to permit restoring products and finishes to original or specified condition. Restore Work with new products in accordance with requirements of Contract Documents.
   1. Materials: As specified in product sections; match existing with new products and salvaged products for patching and extending work.
   2. Refinish existing visible surfaces to remain in renovated rooms and spaces, to specified condition for each material, with neat transition to adjacent finishes.
   3. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.
   4. Prepare surface and remove surface finishes to permit installation of new work and finishes.
   5. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for assembly, refinish entire unit.
   6. Where new Work abuts or aligns with existing, provide smooth and even transition.
      a. When finished surfaces are cut so that smooth transition with new Work is not possible, terminate existing surface along straight line at natural line of division and submit recommendation to A/E for review.
      b. Where change of plane of 1/4-inch or more occurs, submit recommendation for providing smooth transition; to A/E for review.
   7. Patch Work to match existing adjacent Work in texture and appearance.
   8. Trim existing doors to clear new floor finish. Refinish trim to specified condition.

M. Asphalt Pavement:
   1. Where existing or new pavement is damaged from construction operations, cut to install new underground utilities and where existing items are removed from paved areas:
      a. Cut pavement with saw or other means to provide neat, straight joints.
      b. Where existing pavement is damaged by removals, remove additional pavement to allow clean cuts.
      c. Backfill and sufficiently compact removal area prior to placement of pavement.
      d. Place pavement to match existing materials and thickness.
      e. Immediately after placement.

N. Special Roof Penetrations:
   1. New roofing:
      a. Coordinate, locate and schedule roof penetrations prior to installation of new roof system.
      b. Coordinate roof penetrations such that installation does not void roof warranty.
   2. Existing roofing:
      a. Prior to penetrating, cutting, and patching existing roofing, verify with Owner if roof is under warranty. If warranted, employ roof contractor certified by manufacturer of roof system, make required inspections and notifications, and perform cutting and patching as required to ensure warranty is not violated.
      b. Protect building interior during operations and return roof to weather tight condition after the work is performed.

1.05 PROTECTING INSTALLED CONSTRUCTION

A. Protect installed Work and provide special protection where specified in individual specification sections.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

F. Prohibit traffic from landscaped areas.

1.06 PROGRESS CLEANING

A. Conduct cleaning and disposal operations to comply with codes, ordinances, regulations, and anti-pollution laws.

B. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.

C. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.

D. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

E. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

F. Remove waste materials, debris, and rubbish from site weekly and legally dispose of off-site.

G. Remove debris and rubbish from pipe chases, plenums, crawl spaces, above suspended ceilings, and other closed and remote spaces prior to enclosing space.

H. Prior to surface finishing, broom and vacuum clean interior areas to eliminate dust.

I. Washing of concrete trucks and dumping of excess cementitious material on site is not allowed. All such materials and contaminated soil shall be removed.

J. Soils and other site material contaminated by paint residues, oils, fuels, and other construction products shall be removed and replaced with equivalent soil or material.

K. Existing lawns, landscaped areas, and areas for future landscaping affected by construction operations shall be raked to remove stones, mortars, aggregates, and other construction debris in excess of 3/4 inch diameter.

L. Clean mud and sediment resulting from Contractor's operations or traffic from all sidewalks, public streets and parking areas.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 75 00

STARTING AND ADJUSTING

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for:
   1. Starting of systems.
   2. Testing, adjusting, and balancing.

1.02 STARTING OF SYSTEMS

A. Coordinate schedule for start-up of various equipment and systems.

B. Notify Owner seven days prior to start-up of each item.

C. Prior to startup, inspect items of equipment and systems to ensure that:
   1. Installation is in accordance with manufacturer's instructions.
   2. No defective items have been installed and there are no loose connections.
   3. Power supplies are correct voltage, phasing, and frequency.
   4. Grounding and transient protection systems are properly installed.
   5. Items have been properly lubricated, belts tensioned, and control sequence and other conditions which may cause damage have been addressed.
   6. Verify tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.
   7. Verify wiring and support components for equipment are complete and tested.
   8. Verify that provisions have been made for safety of personnel.

D. Execute start-up under supervision in accordance with manufacturers' instructions.
   1. When specified in individual sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment and system installation prior to startup and to supervise placing equipment and system in operation.
   2. Adjustment: Monitor systems and verify performance. Correct deficiencies. Replace defective components and equipment. Adjust equipment and systems for smooth and proper installation.
   3. Submit written report in accordance with Submittal Procedures that equipment and systems have been properly installed and are functioning correctly

1.03 TESTING, ADJUSTING AND BALANCING

A. Independent firm will perform testing, balancing and adjusting services specified in other sections.

B. Reports will be submitted by independent firm to A/E indicating observations and results of tests and indicating compliance or non-compliance with requirements of Contract Documents.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 77 00

CLOSEOUT PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
   1. Closeout procedures.
   2. Final cleaning.
   3. Final Completion and inspection.
   4. Maintenance service.
   5. Correction period inspection.

1.02 CLOSEOUT PROCEDURES

A. Substantial Completion:
   1. Preliminary Procedures: Prior to requesting A/E's inspection for certification of substantial completion (for either entire work or portions thereof), complete the following and list known exceptions in request:
      a. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
      b. Advise Owner of pending insurance change-over requirements.
      c. Submit specific warranties, workmanship/maintenance bonds, maintenance agreements, final certifications and similar documents.
      d. Obtain and submit releases enabling Owner's full and unrestricted use of the work and access to services and utilities, including occupancy permits, operating certificates, and similar releases.
      e. Prepare and submit Project Record Documents, operation and maintenance manuals, and similar final record information.
      f. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
      g. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
      h. Complete startup testing of systems.
      i. Submit test/adjust/balance records.
      j. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
      k. Advise Owner of changeover in heat and other utilities.
      l. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
      m. Complete final cleaning requirements, including touchup painting.
      n. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

2. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, A/E will either proceed with inspection or notify Contractor of unfulfilled requirements. A/E will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor' list or additional items identified by A/E, that must be completed or corrected before certificate will be issued.
    a. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
    b. Results of completed inspection will form the basis of requirements for Final Completion.

B. List of Incomplete Items (Punch List):
1. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction:
    a. Organize list of spaces in sequential order, starting with exterior areas first then proceeding from lowest to highest room number.
    b. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.

1.03 FINAL CLEANING

A. Employ experienced workers or professional cleaners for final cleaning.
1. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program.
2. Comply with manufacturer's written instructions.

B. Clean equipment and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

C. Replace filters of operating equipment.

D. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
1. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
2. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
3. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
4. Remove tools, construction equipment, machinery, and surplus material from Project site.
5. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid

disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

6. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
7. Sweep concrete floors broom-clean in unoccupied spaces.
8. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
9. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
10. Remove labels that are not permanent.
11. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
    a. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
    b. Wipe surfaces of mechanical and electrical equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
    c. Replace parts subject to unusual operating conditions.
    d. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
    e. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
    f. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
    g. Leave Project clean and ready for occupancy.

E. Comply with Safety Standards for Cleaning:
1. Do not burn waste materials.
2. Do not bury debris or excess materials on Owner's property.
3. Do not discharge volatile, harmful, or dangerous materials into drainage systems.
4. Remove waste materials from Project site and dispose of lawfully.

F. Removal of Protection: Except as otherwise indicated or requested by A/E/Engineer, remove temporary protection devices and facilities which were installed during course of the work.

G. Compliances: Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at site, or bury debris or excess materials on Owner's property, or discharge volatile or other harmful or dangerous materials into drainage systems. Remove waste materials from site and dispose of in a lawful manner.

H. Where extra materials of value remaining after completion of associated work have become Owner's property, dispose of these to Owner's best advantage as directed.

1.04 FINAL COMPLETION

A. Preliminary Procedures:
1. Submit a final Application for Payment according to Section 01 29 00 Payment Procedures. Submit with final releases, waivers and consents.
2. Submit certified copy of A/E's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by A/E. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
4. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
5. Notify Owner and request change over in insurance, utilities, and security; send copy of notice to A/E.
6. Submit insurance certificates for products and completed operations as required by Specification Sections.
7. Submit complete close-out package per Section 01 78 00 Closeout Submittals.
8. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems per Section 01 79 00 Demonstration and Training.

1.05 FINAL INSPECTION

A. Submit a written request for final inspection for acceptance. On receipt of request, A/E will either proceed with inspection or notify Contractor of unfulfilled requirements. A/E will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

B. Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.06 MAINTENANCE SERVICE

A. Furnish service and maintenance of components indicated in specification sections for specified period from date of Substantial Completion.

B. Examine system components at frequency consistent with reliable operation. Clean, adjust, and lubricate as required.

C. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by manufacturer of original component.

D. Do not assign or transfer maintenance service to agent or Subcontractor without prior written consent of Owner.

1.07 CORRECTION PERIOD INSPECTION

A. 30 days prior to end of one year correction period, schedule and attend a one year correction period inspection. Appropriate subcontractors shall attend.

B. Coordinate time of inspection with A/E.

C. Representatives of Owner, A/E, and appropriate consultants will attend.

D. Correct deficiencies shall be noted and addressed.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 78 00

CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes the following Closeout Submittals:
   1. Project Record Documents.
   2. Operation and Maintenance Manuals.
   3. Tools, spare parts, maintenance and extra stock products.
   4. Warranties.
   5. Certificates of Inspection and Compliance.

1.02 PROJECT RECORD DOCUMENTS

A. General:
   1. Do not use Project Record Documents for construction purposes. Store Record Documents and Samples in the field office apart from the Contract Documents used for construction.
   2. Protect Project Record Documents from deterioration and loss.
   3. Provide access to Project Record Documents for A/E reference during normal working hours.
   4. Maintain one (1) copy of each document type during construction period for Project Record Document purposes.
   5. Post changes and modifications to Project Record Documents on a weekly basis.

B. Record Drawings: Maintain and submit one (1) set of blue- or black-line white prints of Contract Drawings and Shop Drawings.
   1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
      a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
      b. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
      c. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
         1) Clearly describe the change by note and by graphic line, as required.
         2) Date all entries.
         3) Call attention to the entry by a “cloud” around the area or areas affected.
         4) In the event of overlapping changes, different colors may be used for each of the changes.

d. Where changes are caused by Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification, clearly indicate the change by note in ink, colored pencil, or rubber stamp.
e. Where changes are caused by Contractor-originated proposals approved by the A/E, including inadvertent errors by the Contractor which have been accepted by the A/E, clearly indicate the change by note in erasable colored pencil.
f. Because design of future modifications to the facility may require accurate information as to the final physical arrangement of items which were originally drawn schematically on the Drawings convert schematic layouts to show its final physical arrangement.
g. Show on the job set of Record Drawings, by dimension accurate to within 1 inch, the centerline of each run of items described in the preceding paragraph. Clearly identify the item by accurate note such as "3" cast iron water main", etc. Show, by symbol or note, the vertical control elevation of the item. Make all identification sufficiently descriptive that it may be related reliably to the specifications.
h. The A/E may waive the requirements for conversion of schematic data where, in the A/E's judgment, such conversion serves no beneficial purpose. A/E will issue a written waiver when this applies.
i. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.
j. Submit documents to A/E prior to or in conjunction with submission of Contractor's request for Substantial Completion and in accordance with Owner's procedures.

C. Record Specifications: Submit one (1) copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Note related Change Orders and Record Drawings, where applicable.

D. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work Bind or file miscellaneous records and identify each, ready for continued use and reference. Include the following:
1. Addenda.
2. Change Orders and other modifications to the Contract.
3. Reviewed Shop Drawings, Product Data, and Samples.
4. Manufacturer's instruction for assembly, installation, and adjusting.
5. Test and Inspection Reports.
6. Design Mix Records.
7. Inspections by Authority having Jurisdiction.

1.03 OPERATION AND MAINTENANCE MANUALS

A. General:
1. Submit two (2) copies of each manual in final form at least 10 days before final inspection. A/E will return copy with comments.
2. Correct or modify each manual to comply with comments. Submit two (2) copies of each corrected manual within 10 days of receipt of A/E's comments.

B. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
1. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.

C. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain a title page, table of contents, and manual contents.
1. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
2. Subject matter included in manual.
3. Name and address of Project.
4. Name and address of Owner.
5. Date of submittal.
6. Name, address, and telephone number of Contractor.
7. Name and address of A/E.
8. Table of Contents: List each product included in manual, identified by product name, indexed to content of volume, and cross-referenced to Specification Section number in Project Manual.
9. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
10. Include information needed for daily operations and management of systems and equipment. In addition to requirements in this Section, include operation data required in individual Specification Sections and equipment descriptions, operating standards, operating procedures, operating logs, wiring and control diagrams, and license requirements.
11. Include the following:
    a. Product name and model number.
    b. Manufacturer's name.

c. Equipment identification with serial number of each component.
d. Equipment function.
e. Operating characteristics.
f. Limiting conditions.
g. Performance curves.
h. Engineering data and tests.
i. Complete nomenclature and number of replacement parts.

12. Operating Procedures: Include startup, break-in, and control procedures; stopping and normal shutdown instructions; routine, normal, seasonal, and weekend operating instructions; and required sequences for electric or electronic systems.
13. Systems and Equipment Controls: Describe sequence of operation, and diagram controls as installed.
14. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

D. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
1. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
2. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

E. Include the following in combined or separate manuals:
1. Manual for materials and finishes:
2. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations.
3. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
4. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Include recommendations for inspections, maintenance, and repair.
5. Manual for equipment and systems.
6. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.
7. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications.
8. Include color coded wiring diagrams as installed.
9. Include original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
10. Include control diagrams by controls manufacturer as installed.
11. Include Contractor's coordination drawings, with color coded piping diagrams as installed.

12. Include charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
13. Include list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

1.04 TOOLS, SPARE PARTS, MAINTENANCE AND EXTRA STOCK PRODUCTS

A. Furnish tools, spare parts, maintenance, extra products and computer programming materials in quantities specified in individual specification sections and deliver to Owner.
1. Provide list of tools, spare parts, maintenance materials, extra stock and computer programming, materials for review by A/E.

B. Deliver to Project site and place in location as directed by Owner, extra stock as specified in sections.
1. Owner’s Representative will log in materials as delivered.
2. Obtain receipt for delivered materials.

1.05 WARRANTIES

A. Submittal Time: Submit written warranties on request of A/E or designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title “WARRANTIES,” Project name, and name of Contractor.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

1.06 CERTIFICATES OF INSPECTION AND COMPLIANCE

A. For inspections throughout the construction period required by regulatory agencies, obtain and maintain certificates issued to show compliance.

B. Assemble certificates and any formal written evidence of regulatory compliance in three ring binder with table of contents and submit to A/E prior to or in conjunction with submission of Notice of Substantial Completion.

1. Include Contractor's Certification that all work has been performed in compliance with the New Mexico Building Code, current edition and all of its referenced codes including, but limited to IBC, UPC, UMC, NEC.

C. Certificate of Occupancy: Prior to Substantial Completion, obtain Certificate of Occupancy from authorities having jurisdiction. Submit with Notice for Substantial Completion.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 79 00

DEMONSTRATION AND TRAINING

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for Demonstration of Equipment and Systems and Training of Owner's Personnel.

1.02 DEMONSTRATION AND TRAINING SCHEDULING

A. Schedule demonstration and training sessions after equipment and systems have been completely installed, startup completed, and adjustments made prior to date of Substantial Completion.
   1. Submit list of names, resumes, and qualifications of personnel conducting training sessions. Provide instructors experienced in operation and maintenance procedures.
   2. Submit preliminary schedule listing times, dates, and outline showing organization and proposed contents of training sessions for approval by A/E and Owner.
   3. Provide instruction at mutually agreed-on times.
   4. Required instruction time for each item of equipment and system is specified in individual sections.

B. Owner shall be responsible for designating and notifying personnel to attend and ensuring attendance at scheduled sessions.

1.03 TRAINING MATERIALS

A. Training manuals: Loose leaf notebook format with agenda and objectives of each lesson.
   1. Manuals shall describe function, operation, and maintenance of various items of equipment and be suitable for personnel with high school education.
   2. Manuals shall be suitable for future training of Owner personnel by Owner staff.
   3. Manuals shall useful reference for staff maintaining facility.
   4. Provide three copies.

B. Visual aids: Provide charts, handouts, overhead projector slides, electronic presentations, and other visual aids required to make effective presentation and facilitate training.
   1. Equipment needed for showing visual training aids shall be provided by Contractor.
   2. Visual aids shall be suitable for use by Owner's staff to train additional personnel in the future.

C. Submit report within 1 week after completion of training that sessions have been satisfactorily completed. Give times, dates, list of persons trained, and summary of instructions.

D. For equipment or systems requiring seasonal operation, perform demonstration for all seasons.

E. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

F. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment.

G. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction

1.04 DEMONSTRATION AND TRAINING SESSIONS

A. Provide demonstration and training session to emphasize operation, use, and maintenance of installed items and systems:
   1. Mechanical systems specified in respective divisions
   2. Electrical systems specified in respective division.
   3. Fire protection systems specified in respective divisions
   4. Other items and systems as designated by A/E or requested by Owner.

B. Conduct at project site using actual installed equipment and systems.

C. Have copies of operation and maintenance manuals available. Use as training aids.

D. Owner shall have right to record or video tape demonstration and training sessions.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 02 41 19

SELECTIVE DEMOLITION

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
1. Demolishing designated building equipment and fixtures.
2. Demolishing designated construction.
3. Removing designated items for reuse and Owner's retention.
4. Protecting items designated to remain.
5. Removing demolished materials.

B. Related Work:
1. Section 01 31 00: Project Management and Coordination
2. Section 01 33 00: Submittal Procedures: Requirements for submittals.
3. Section 01 70 00: Cutting and Patching

1.02 CONSTRUCTION SUBMITTALS

A. Demolition Schedule: Indicate overall schedule and interruptions required for utility and building services.

B. Where Work of this Section involves adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.

C. Submit list of utilities and systems that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.

1.03 CLOSEOUT SUBMITTALS

A. Section 01 78 00 – Closeout Submittals: Requirements for submittals.

B. Project Record Documents: Accurately record actual locations of capped utilities, concealed utilities discovered during demolition, and subsurface obstructions.

C. Operation and Maintenance Data: Submit description of system, inspection data, and parts lists.

1.04 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Detach items from existing construction and deliver them to Owner.

C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.

D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

E. Cutting and Patching: Removal of portions of existing construction as required to accommodate the Work.

1.05 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.06 QUALITY ASSURANCE

A. Conform to current applicable codes for demolition work, dust control, and products requiring utility disconnection and re-connection.

B. Conform to current applicable codes for procedures when hazardous or contaminated materials are discovered.

C. Obtain required permits from authorities having jurisdiction.

1.07 PRE-DEMOLITION MEETINGS

A. Convene minimum 1 week prior to commencing work of this section.

1.08 SCHEDULING

A. Cooperate with Owner in scheduling noisy operations and waste removal that may impact Owners operation in adjoining spaces.

B. Coordinate utility and building service interruptions with Owner.
   1. Do not disable or disrupt building fire or life safety systems without 3 days prior written notice to Owner.
   2. Schedule tie-ins to existing systems to minimize disruption.
   3. Coordinate Work to ensure fire sprinklers, fire alarms, smoke detectors, emergency lighting, exit signs and other life safety systems remain in full operation in occupied areas.

1.09 PROJECT CONDITIONS

A. Conduct demolition to minimize interference with adjacent [and occupied] building areas.

B. Cease operations immediately if structure appears to be in danger and notify Architect/Engineer (A/E). Do not resume operations until directed.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 PREPARATION

A. Notify affected utility companies before starting work and comply with their requirements.

B. Mark location and termination of utilities.

C. Erect, and maintain temporary barriers and security devices at locations indicated, including warning signs and lights, and similar measures, for protection of the public, Owner, and existing improvements indicated to remain.

D. Erect and maintain weatherproof closures for exterior openings.

E. Erect and maintain temporary partitions to prevent spread of dust, odors, and noise to permit continued Owner occupancy.

F. Prevent movement of structure; provide temporary bracing and shoring required to ensure safety of existing structure.

G. Provide appropriate temporary signage including signage for exit or building egress.

H. Do not close or obstruct building egress path.

I. Do not disable or disrupt building fire or life safety systems without 3 days prior written notice to Owner.

3.02 SALVAGE REQUIREMENTS

A. Coordinate with Owner to identify building components and equipment required to be

B. Tag components and equipment Owner designates for salvage.

C. Protect designated salvage items from demolition operations until items can be removed.

D. Carefully remove building components and equipment indicated to be salvaged.

E. Disassemble as required to permit removal from building.

F. Package small and loose parts to avoid loss.

G. Mark equipment and packaged parts to permit identification and consolidation of components of each salvaged item.

H. Prepare assembly instructions consistent with disassembled parts. Package assembly instructions in protective envelope and securely attach to each disassembled salvaged item.

I. Deliver salvaged items to Owner. Obtain signed receipt from Owner.

3.03 DEMOLITION

A. Conduct demolition to minimize interference with adjacent and occupied building areas.

B. Maintain protected egress from and access to adjacent existing buildings at all times.

C. Do not close or obstruct roadways and sidewalks without permits.

D. Cease operations immediately if structure appears to be in danger and notify A/E.

E. Disconnect and remove designated utilities within demolition areas.

F. Cap and identify abandoned utilities at termination points when utility is not completely removed. Annotate Record Drawings indicating location and type of service for capped utilities remaining after demolition.

G. Demolish in orderly and careful manner. Protect existing improvements and supporting structural members.

H. Carefully remove building components indicated to be reused.
1. Disassemble components as required to permit removal.
2. Package small and loose parts to avoid loss.
3. Mark components and packaged parts to permit reinstallation.
4. Store components, protected from construction operations, until reinstalled.

I. Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.

J. Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.

K. Remove temporary Work.

L. Perform cutting and removal work to remove minimum necessary, and in a manner to avoid damage to adjacent work. Cut finished surfaces such as masonry, tile, plaster and metals, by methods to terminate surfaces in a straight line at a natural point of division.

M. Protect from damage existing finishes, equipment, and adjacent work scheduled to remain. Protect existing and new work from weather and extremes of temperature.

N. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Proceed with patching after construction operations requiring cutting are complete.

3.04 SCHEDULES

A. Remove the following and salvage to the Owner's. Deliver to location designated by A/E:
1. Roof Ballast.

B. Protect materials and equipment remaining.

C. Demolish materials, equipment and construction as shown on the Drawings.

END OF SECTION

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 GENERAL

1.01 SUMMARY

A. Contractor shall provide miscellaneous lumber and/or plywood for:
   1. Framing with dimension lumber and engineered wood products.
   2. Rooftop equipment bases and support curbs.
   3. Wood blocking and nailers.
   4. Wood furring.
   5. Wood sleepers.
   6. Utility shelving.
   7. Plywood backing panels.

B. Related Sections:
   1. Section 06 40 00 – Architectural Woodwork.
   2. Section 09 22 00 – Gypsum Board Assemblies.

1.02 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product indicated.
   1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that materials comply with requirements.

B. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses.

C. Research / Evaluation Reports: For the following:
   1. Treated wood.
   2. Engineered wood products.
   3. Power-driven fasteners.
   4. Powder-actuated fasteners.
   5. Expansion anchors.

1.03 QUALITY ASSURANCE

A. Each piece of lumber or plywood shall bear official GRADE STAMP of Association under whose rules it is graded or may be accompanied by certificate of inspection issued by that Association.

1.04 REFERENCES

A. NFPA National Forest Products Association National Design Specification for Stress Grade Lumber and Its Fastening.

B. Western Wood Products Association Grading Rules.

C. American Plywood Association Product Standard.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Protect lumber from dampness both during and after delivery at site.

B. Immediately pile stacks in such a manner as to provide air circulation around all surfaces of each piece to insure thorough air seasoning.

C. Locate stacks on well-drained areas, supported at least 6 inches above grade and covered adequately to protect from driving rain.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:

B. Available Manufacturers: Subject to compliance with requirement.

2.02 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review.
1. Factory mark each piece of lumber with grade stamp of grading agency.
2. For exposed lumber indicated to receive stained or natural finish, mark grade stamp on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.
3. Provide dressed lumber, S4S, unless otherwise indicated.
4. Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.

B. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.
1. Allowable Design Stresses: Meet or exceed those indicated per manufacturer's published values determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

C. Wood Structural Panels:
1. Plywood: Either DOC PS 1 or DOC PS 2, unless otherwise indicated.
2. Oriented Strand Board: DOC PS 2.
3. Comply with "Code Plus" provisions in APA Form No. E30K, "APA Design/Construction Guide: Residential & Commercial."

2.03 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA C2 (lumber) and AWPA C9 (plywood), except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX).

B. Kiln-dry material after treatment to maximum moisture content of 19 percent for lumber and 15 percent for plywood.

C. Mark each treated item with treatment quality mark of an inspection agency approved by the American Lumber Standards Committee Board of Review.

D. Application: Treat items indicated on Drawings, and the following:
1. Blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Blocking and similar concealed members in contact with masonry or concrete.
3. Wood framing members less than 18 inches above grade.
4. Wood floor plates that are installed over concrete slabs directly in contact with earth.

2.04 DIMENSION LUMBER

A. General: Of grades indicated according to the American Lumber Standards Committee National Grading Rule provisions of the grading agency indicated. Must match existing wood at the existing building. Architect will approve wood used.

B. Framing Other Than Non-Load-Bearing Partitions: Construction or No. 2 grade and any of the following species:
1. Hem-fir or Hem-fir (north); NLGA, WCLIB, or WWPA.
2. Southern pine; SPIB.
3. Spruce-pine-fir (south) or Spruce-pine-fir; NELMA, NLGA, WCLIB, or WWPA.

C. Framing Other Than Non-Load-Bearing Partitions: Any species of machine stress-rated dimension lumber with a grade of not less than 2100f-1.8E.

D. Exposed Framing: Hand select material for uniformity of appearance and freedom from characteristics that would impair finish appearance.
1. Species and Grade: As indicated above for load-bearing construction of same type.
2. Species and Grade: Hem-fir or Hem-fir (north), Select Structural grade; NLGA, WCLIB, or WWPA.
3. Species and Grade: Southern pine, No. 1 grade; SPIB.
4. Species and Grade: Spruce-pine-fir or Spruce-pine-fir (south), No. 1 grade; NELMA, NLGA, WCLIB, or WWPA.

2.05 TIMBER AND MISCELLANEOUS LUMBER

A. For timbers of 5-inch nominal size and thicker, provide material complying with the following requirements:
   1. Species and Grade: Douglas fir-larch, Douglas fir-larch (north), or Douglas fir-south; No. 1 grade; NLGA, WCLIB, or WWPA.
   2. Species and Grade: Eastern hemlock, Eastern hemlock-tamarack, or Eastern hemlock-tamarack (north); No. 1 grade; NELMA or NLGA.
   3. Species and Grade: Southern pine, No. 1 grade; SPIB.

B. Provide miscellaneous lumber for support or attachment of other construction, including Blocking.

C. For items of dimension lumber size, provide No. 2 grade lumber with 19 percent maximum moisture content of any species.

D. For concealed boards, provide lumber with 19 percent maximum moisture content and any of the following species and grades:
   1. Mixed southern pine, No. 2 grade; SPIB.
   2. Eastern softwoods, No. 2grade; NELMA.
   3. Northern species, No. 2grade; NLGA.
   4. Western woods, No. 2 Common grade; WCLIB or WWPA.

2.06 ENGINEERED WOOD PRODUCTS

A. Laminated-Veneer Lumber: Composite of wood veneers with grain primarily parallel to member lengths, manufactured with exterior-type adhesive complying with ASTM D 2559. Allowable design values determined according to ASTM D 5456.
   1. Manufacturers:
      a. Boise Cascade Corporation.
      b. Georgia-Pacific Corporation.
      c. Louisiana-Pacific Corporation.
      d. Pacific Woodtech Corp.
      e. Trus Joist MacMillan.
      f. Union Camp Corp.; Building Products Division.
      g. Willamette Industries, Inc.
   2. Extreme Fiber Stress in Bending, Edgewise: 2500 psi for 12-inch nominal-depth members.
   3. Modulus of Elasticity, Edgewise: 1,800,000 psi.

B. Rim Boards: Performance-rated product complying with APA PRR-401.
   1. Material: composite panels.
   2. Thickness and Grade: 1-inch rim board.
   3. Trademark: Factory mark with APA trademark indicating thickness, grade, and compliance with APA standard.

2.07 PLYWOOD BACKING PANELS

A. Electrical Equipment Backing Panels: DOC PS 1, Exposure 1, C-D Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than 1/2 inch thick.

2.08 MISCELLANEOUS MATERIALS

A. Fasteners:
1. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
2. Power-Driven Fasteners: CABO NER-272.
3. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.

B. Metal Framing Anchors: Made from hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 coating designation.
1. Manufacturers:Alpine Engineered Products, Inc.
   a. Cleveland Steel Specialty Co.
   b. Harlen Metal Products, Inc.
   c. KC Metals Products, Inc.
   d. Silver Metal Products, Inc.
   e. Simpson Strong-Tie Company, Inc.
   f. Southeastern Metals Manufacturing Co., Inc.
   g. United Steel Products Company, Inc.
2. Research/Evaluation Reports: Provide products acceptable to authorities having jurisdiction and for which model code research/evaluation reports exist that show compliance of metal framing anchors, for application indicated, with building code in effect for Project.
3. Allowable Design Loads: Meet or exceed those indicated per manufacturer's published values determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

C. Building Paper: Asphalt-saturated organic felt complying with ASTM D 226, Type I (No. 15 asphalt felt), unperforated.

PART 3 EXECUTION

3.01 INSTALLATION

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate blocking and similar supports to comply with requirements for attaching other construction.

B. Apply field treatment complying with AWPA M4 to cut surfaces of preservative-treated lumber and plywood.

C. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
   1. CABO NER-272 for power-driven fasteners.
   2. Published requirements of metal framing anchor manufacturer.
   3. Tables in the IBC

D. Use finishing nails for exposed work, unless otherwise indicated. Countersink nail heads and fill holes with wood filler.

E. Framing Standard: Comply with AFPA's "Manual for Wood Frame Construction," unless otherwise indicated.

F. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.

G. Comply with applicable recommendations contained in APA Form No. E30K, "APA Design/Construction Guide: Residential & Commercial," for types of structural-use panels and applications indicated.

H. Comply with "Code Plus" provisions in above-referenced guide.

I. Fastening Methods:
   1. Combination Subfloor-Underlayment: Glue and nail to wood framing.
   2. Subflooring: Glue and nail to wood framing.
   3. Sheathing: Nail or staple to wood framing.
   4. Underlayment: ail or staple to subflooring.
   5. Plywood Backing Panels: Nail or screw to supports.

END OF SECTION

SECTION 07 54 23

THERMOPLASTIC POLYOLEFIN (TPO) MEMBRANE ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Adhered TPO membrane roofing system.

B. Cover board.

C. Roof insulation.

1.02 RELATED SECTIONS

A. Division 06 Section “Miscellaneous Rough Carpentry” for wood nailers, cants, curbs, and blocking and for wood-based, structural-use roof deck panels.

B. Division 07 Section “Sheet Metal Flashing and Trim” flashings and counter flashings.

C. Division 22 Section “Storm Drainage Piping Specialties” for roof drains.

1.03 REFERENCES

A. Roofing Terminology: Refer to the following publications for definitions of roofing work related terms in this Section:
1. ASTM D 1079 “Standard Terminology Relating to Roofing and Waterproofing.”
2. Glossary of NRCA’s “The NRCA Roofing and Waterproofing Manual.”
3. Roof Consultants Institute “Glossary of Building Envelope Terms.”

B. Sheet Metal Terminology and Techniques: SMACNA “Architectural Sheet Metal Manual.”

1.04 DESIGN CRITERIA

A. General: Installed roofing membrane system shall remain watertight; and resist specified wind uplift pressures, thermally induced movement, and exposure to weather without failure.

B. Material Compatibility: Roofing materials shall be compatible with one another under conditions of service and application required, as demonstrated by roofing system manufacturer based on testing and field experience.

C. Installer shall comply with current code requirements based on authority having jurisdiction.

D. Wind Uplift Performance: Roofing system shall meet the intent of systems that have been successfully tested by a qualified testing and inspecting agency to resist wind uplift pressure calculated in accordance with ASCE 7.

E. FMG Listing: Roofing membrane, base flashings, and component materials shall comply with requirements in FMG 4450 and FMG 4470 as part of a roofing system and that are listed in FMG's "RoofNav" for Class 1 or noncombustible construction, as applicable. Identify materials with FMG markings.
1. Provide roof assembly that meets intent of a tested RoofNav # assembly.
2. Fire/Windstorm Classification: Class 1.

F. Fire-Test-Response Characteristics: Provide roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL, FMG, or another testing and inspecting agency acceptable to authorities having jurisdiction. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.
1. Exterior Fire-Test Exposure: Class A - UL 790, for application and roof slopes indicated.

1.05 SUBMITTALS

A. Product Data: Manufacturer's data sheets for each product to be provided.

B. Detail Drawings: Provide Manufacturer's roofing system details and details of attachment to other work, including:
1. Base flashings and membrane terminations.
2. Tapered insulation, including slopes.
3. Crickets, saddles, and tapered edge strips, including slopes.
4. Insulation fastening and adhesive patterns.

C. Verification Samples: Provide for each product specified.

D. Installer Certificates: confirmation that installer is approved, authorized, or licensed by manufacturer to install roofing system.

E. Maintenance Data: Refer to Johns Manville's latest published documents on www.JM.com.

F. Guarantees: Provide manufacturer's current guarantee specimen.

G. Roofing sub-contractor shall provide a copy of the final System Assembly Letter issued by Johns Manville Roofing Systems indicating that the products and system to be installed shall be eligible to receive the specified manufacturer's guarantee when installed by a certified JM contractor in accordance with our application requirements, inspected and approved by a JM Technical Representative.

H. Prior to roofing system installation, roofing sub-contractor shall provide a copy of the Guarantee Application Confirmation document issued by Johns Manville Roofing Systems indicating that the project has been reviewed for eligibility to receive the specified guarantee and registered.

1.06 QUALITY ASSURANCE

A. Installer Qualifications: Qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and who is eligible to receive the specified manufacturer's guarantee.

B. Manufacturer Qualifications: Qualified domestic U.S. owned and based manufacturer that has accredited testing agency listing for roofing system identical to that used for this Project.

C. Testing Agency Qualifications: An independent testing agency with the experience and capability to conduct the testing indicated, as documented according to ASTM E 329.

D. Test Reports:
   1. Roof deck fastener pullout test is required.

E. Moisture Survey, if required:
   1. Submit prior to installation, results of a non-destructive moisture test of roof system completed by approved third party. Utilize one of the approved methods:
      a. Infrared Thermography.
      b. Nuclear Backscatter.

F. Source Limitations: Obtain all components from the single source roofing manufacturer guaranteeing the roofing system. All products used in the system shall be labeled by the single source roofing manufacturer issuing the guarantee.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storage.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.08 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when current and forecasted weather conditions permit roofing system to be installed in accordance with manufacturer's written instructions and guarantee requirements.

1.09 GUARANTEE

A. Provide manufacturer's system guarantee equal to Johns Manville's Peak Advantage No Dollar Limit Roofing System Guarantee.
   1. Single-source special guarantee includes roofing membrane, base flashings, roofing membrane accessories, roof insulation, fasteners, adhesives, cover board, walkway products, edge metal products and other approved single-source components of roofing system marketed by the manufacturer.
   2. Guarantee Period: 20 years from date of Substantial Completion.
   3. Contractor is required to list Molzen Corbin as the Specifier/Consultant of record in the appropriate fields ("Specifier Account") when applying for the manufacturer's warranty.

B. Installer's Guarantee: Submit roofing Installer's guarantee, including all components of roofing system for the following guarantee period:
   1. Guarantee Period: Two (2) years from date of Substantial Completion.

C. Existing Guarantees: Guarantees on existing building elements should not be affected by scope of work.
   1. Installer is responsible for coordinating with building owner's representative to verify compliance.

PART 2 PRODUCTS

2.01 THERMOPLASTIC POLYOLEFIN ROOFING MEMBRANE – TPO

A. Fabric-Reinforced Thermoplastic Polyolefin Sheet: ASTM D 6878, uniform, flexible sheet formed from a thermoplastic polyolefin, internally fabric or scrim reinforced. Basis of design: JM TPO 80.
   1. Membrane Thickness: 80 mils (2.03 mm) nominal.
   2. Exposed Face Color: White.

2.02 AUXILIARY ROOFING MATERIALS – SINGLE PLY

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.
   1. Liquid-type auxiliary materials shall meet VOC limits of authorities having jurisdiction.

B. Sheet Flashing: Manufacturer's internally reinforced or scrim reinforced. Basis of design: JM TPO 60 mil.

C. Bonding Adhesive: Manufacturer's standard solvent-based bonding adhesive for membrane, and solvent-based bonding adhesive for base flashings. Basis of design: JM Membrane Bonding Adhesive (TPO & EPDM) .

D. Flashing Adhesive: Manufacturer's standard solvent-based bonding adhesive for base flashings. Basis of design: JM Membrane Bonding Adhesive (TPO & EPDM).

E. Liquid Applied Flashing: Manufacturer's single ply liquid and fabric reinforced flashing system created with a fleece polyester scrim and a two-component polyurethane-based liquid applied flashing material, consisting of a liquid resin and a curing agent. Basis of design: JM SP Liquid Flashing Resin and JM SP Liquid Flashing Scrim.

F. Liquid Applied Flashing Primer: Manufacturer's single ply liquid flashing primer. Basis of design: JM SP Liquid Flashing TPO and PVC Primer, JM SP Liquid Flashing Concrete Primer, or JM SP Liquid Flashing Metal and Wood Primer.

G. Metal Termination Bars: Manufacturer's standard predrilled stainless-steel or aluminum bars, with anchors. Basis of design: JM Termination Systems.

H. Miscellaneous Accessories: Provide all accessories to meet the roofing manufacturer's guarantee requirements.

2.03 WALKWAYS AND SAFETY STRIPS

A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads sourced from membrane roofing system manufacturer. Basis of design: JM TPO Walkpad.

2.04 COVER BOARD

A. High-Density Polyisocyanurate: ASTM C 1289, Type II, Class 4, Grade 1, High-density Polyisocyanurate technology bonded in-line to inorganic coated glass facers with greater than 80 lbs of compressive strength. Basis of design: Protector HD.
1. Thickness: 1/2 inch (13 mm).
2. R-value: 2.5.

2.05 ROOF INSULATION

A. General: Preformed roof insulation boards that comply with requirements and referenced standards, selected from manufacturer's standard sizes and of thicknesses indicated.

B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 2 (20 psi), Basis of Design: JM ENRGY 3.
1. Provide insulation package including tapered components at existing sloped gypsum deck areas to increase field drainage a minimum of 1/8 inch per 12 inches (1:24).
2. Provide insulation package in multiple layers.
3. Minimum Long-Term Thermal Resistance (LTTR): 5.7 per inch.

2.06 TAPERED INSULATION

A. Tapered Insulation: ASTM C 1289, Type II, Class 1, Grade 2 (20psi), provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches (1:48), unless otherwise indicated. Basis of design: JM ENRGY 3.

2.07 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with membrane roofing.

B. Provide saddles, crickets, tapered edge strips, and other insulations shapes where indicated for sloping to drain. Fabricate to slopes indicated.

C. Polymer Fasteners: Glass-reinforced nylon fasteners with 1/4-inch square drive and 1-inch head with Galvalume®*-coated 3-inch metal stress plates, designed to lock into the fastener head. Fasteners designed for fastening roof insulation to substrate and furnished by roofing system manufacturer. Basis of design: Polymer Auger Fasteners and Plates.

D. Urethane Adhesive: Manufacturer's two component polyurethane adhesive formulated to adhere insulation to substrate. Basis of design: JM Roofing Systems Urethane Adhesive (RSUA).

E. Wood Nailer Strips: Comply with requirements in Division 06 Section "Miscellaneous Rough Carpentry."

2.08 EDGE METAL COMPONENTS

A. Metal Edge System: Manufacturer's factory fabricated metal edge system used to terminate the roof at the perimeter of the structure. Provide product from single-source roofing system supplier that is included in the No Dollar Limit guarantee. ASTM C 1289, Type II, Class 1, Grade 2 (20psi),

B. Metal Flashing Sheet: Metal flashing sheet is specified in Division 07 Section "Sheet Metal Flashing and Trim."

2.09 PIPE AND CONDUIT SUPPORT

A. Provide supports, OMG pipe guard or similar as needed to support roof top components such as conduits and gas lines.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions for compliance with the requirements affecting performance of roofing system.
   1. General:
      a. Verify that roof openings and penetrations are in place and set and braced and that roof drains are securely clamped in place.
      b. Verify that wood cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.

2. Gypsum Deck:
    a. Verify that gypsum is visibly dry, free of moisture, and that there are no signs of staining.
    b. Inspect deck for cracking and deflection of bulb tees.
    c. Verify that gypsum has ability to provide minimum fastener pull-out resistance.
        1) Provide documentation of pull-out resistance values in accordance with ANSI/SPRI FX-1 2016.
    d. Provide documentation of adhesion resistance values in accordance with ANSI/SPRI 1A-1 2015.
3. Ensure general rigidity and proper slope for drainage.
4. Verify that deck is securely fastened with no projecting fasteners and with no adjacent units more than 1/16 inch (1.6 mm) out of plane relative to adjoining deck.

B. Unacceptable panels should be brought to the attention of the General Contractor and Project Owner's Representative and shall be corrected prior to installation of roofing system.

3.02 PREPARATION

A. Clean and remove from substrate sharp projections, dust, debris, moisture, and other substances detrimental to roofing installation in accordance with roofing system manufacturer's written instructions.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction.

C. If applicable, prime surface of deck at a rate recommended by roofing manufacturer and allow primer to dry.

D. Proceed with each step of installation only after unsatisfactory conditions have been corrected.

3.03 RE-ROOF PREPARATION

A. Remove all roofing membrane, surfacing, coverboards, insulation, fasteners, asphalt, pitch, adhesives, etc.
    1. Remove an area no larger than can be re-roofed in one day.

B. Tear out all base flashings, counterflashings, pitch pans, pipe flashings, vents, sumps and like components necessary for application of new membrane.

C. Remove and replace wet, deteriorated or damaged roof decking as identified in moisture survey.

D. Remove abandoned equipment curbs, skylights, smoke hatches, and penetrations.
    1. Install decking to match existing as directed by Owner's Representative.

E. Raise (disconnect by licensed craftsmen, if necessary) all HVAC units and other equipment supported by curbs to conform with the following:
   1. Modify curbs as required to provide a minimum 8 inches base flashing height measured from the surface of the new membrane to the top of the flashing membrane.
   2. Secure of flashing and install new metal counterflashing prior to re-installation of unit.
   3. Perimeter nailers shall be elevated to match elevation of new roof insulation.

F. Immediately remove all debris from roof surface. Demolished roof system may not be stored on the roof surface.

3.04 INSULATION INSTALLATION

A. Coordinate installation of roof system components so insulation and cover board are not exposed to precipitation or left exposed at the end of the workday.

B. Comply with roofing system manufacturer's written instructions for installation of roof insulation and cover board.

C. Install tapered insulation under area of roofing to conform to slopes indicated.

D. Install insulation boards with long joints in a continuous straight line. Joints should be staggered between rows, abutting edges and ends per manufacturer's written instructions. Fill gaps exceeding 1/4 inch (6 mm) with like material.

E. Install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches (150 mm) in each direction.

F. Trim surface of insulation boards where necessary at roof drains so completed surface is flush and does not restrict flow of water.

G. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.

H. Mechanically Fastened with Subsequent Layers Adhered Insulation: Secure first layer of insulation to deck using mechanical fasteners designed and sized for fastening specified board-type to deck type.
   1. Fasten first layer to resist uplift pressure at corners, perimeter, and field of roof.
   2. Install subsequent layers in a two-part urethane adhesive according to roofing system manufacturer's instruction.
   3. Install each layer to resist uplift pressure at corners, perimeter, and field of roof.

3.05 COVER BOARD INSTALLATION

A. Coordinate installing membrane roofing system components so cover board is not exposed to precipitation or left exposed at the end of the workday.

B. Comply with membrane roofing system manufacturer's written instructions for installing roof cover board.

C. Install cover board with long joints in a continuous straight line. Joints should be staggered between rows, abutting edges and ends per manufacturer's written instructions. Fill gaps exceeding 1/4 inch (6 mm) with cover board.
   1. Cut and fit cover board within 1/4 inch (6 mm) of nailers, projections, and penetrations.

D. Trim surface of cover board where necessary at roof drains so completed surface is flush and does not restrict flow of water.
   1. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.

E. Adhere cover board to substrate as follows:
   1. Install in a two-part urethane adhesive according to roofing system manufacturer's instruction.
   2. Install to resist uplift pressure at corners, perimeter, and field of roof.

3.06 ROOFING MEMBRANE INSTALLATION, GENERAL

A. Install roofing membrane in accordance with roofing system manufacturer's written instructions, applicable recommendations of the roofing manufacturer and requirements in this Section.

B. Cooperate with testing and inspecting agencies engaged or required to perform services for installing roofing system.

C. Coordinate installing roofing system so insulation and other components of the roofing membrane system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is imminent.
   1. Provide tie-offs at end of each day's work to cover exposed roofing membrane sheets and insulation.
   2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system.
   3. Remove and discard temporary seals before beginning work on adjoining roofing.

3.07 ADHERED ROOFING MEMBRANE INSTALLATION

A. Install roofing membrane over area to receive roofing in accordance with membrane roofing system manufacturer's written instructions.
   1. Unroll roofing membrane and allow to relax before installing.

B. Accurately align roofing membrane and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

C. Apply solvent-based bonding adhesive to substrate and underside of roofing membrane at rate required by manufacturer and allow to partially dry before installing roofing membrane. Do not apply bonding adhesive to splice area of roofing membrane.

D. Mechanically fasten roofing membrane securely at terminations, penetrations, and perimeter of roofing.

E. Apply roofing membrane with side laps shingled with roof slope, where possible.

F. Seams: Clean seam areas, overlap roofing membrane, and hot-air weld side and end laps of roofing membrane according to manufacturer's written instructions to ensure a watertight seam installation.
   1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roofing membrane.
   2. Verify field strength of seams a minimum of twice daily and repair seam sample areas.
      a. Remove and repair any unsatisfactory sections before proceeding with installation.
   3. Repair tears, voids, and incorrectly lapped seams in roofing membrane that do not meet requirements.

G. Spread sealant or mastic bead over deck drain flange at deck drains and securely seal roofing membrane in place with clamping ring.

3.08 BASE FLASHING INSTALLATION

A. Install sheet flashings and preformed flashing accessories and adhere to substrates per membrane roofing system manufacturer's written instructions.

B. Apply solvent-based bonding adhesive at required rate and allow to partially dry. Do not apply bonding adhesive to seam area of flashing.

C. Apply single ply liquid applied flashing system per manufacturer's written instructions.

D. Flash penetrations and field-formed inside and outside corners per manufacturer's installation instructions.

E. Clean seam areas and overlap and firmly roll sheet flashings into the adhesive. Weld side and end laps to ensure a watertight seam installation.

F. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.09 EDGE METAL INSTALLATION

A. Examine substrates and conditions under which sheet metal flashing and trim are to be installed and verify that work may properly commence. Do not proceed with installation until unsatisfactory conditions have been corrected.

B. Provide edge details as indicated on the Drawings. Install in accordance with the membrane manufacturer's requirements and SMACNA's "Architectural Sheet Metal Manual".

C. Join individual sections in accordance with the membrane manufacturer's requirements and SMACNA's "Architectural Sheet Metal Manual".

3.10 WALKWAY INSTALLATION

A. Flexible Walkways: Install walkway products in locations indicated. Heat weld and adhere walkway products to substrate according to roofing system manufacturer's written instructions.

B. Roof-Paver Walkways: Install walkway roof pavers with applicable slip sheet per manufacturer's written instructions in locations indicated, to form walkways.

3.11 FIELD QUALITY CONTROL

A. Owner or designated representative will provide on-site observation and inspection during installation.

B. Owner will engage a qualified independent testing and inspecting agency to perform roof tests and inspections and to prepare test reports.

C. Final Roof Inspection: Arrange for roofing system manufacturer's technical representative to inspect roofing installation on completion and submit report to Architect.

D. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.

E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.12 PROTECTION AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SUMMARY

A. Section includes: Flashings, sheet metal work and related items including, but not limited to:
   1. Metal counterflashing at vertical surfaces.
   2. Flashing at roof penetrations.
   3. Edge flashing.
   4. Roof drainage systems: Gutters.
   5. Exposed metal trim / fascia units.
   6. Parapet copings.
   7. Miscellaneous sheet metal accessories.

B. Extent of each type of flashing and sheet metal work is indicated on Drawings and by provisions of this section.

C. Finished sheet metalwork will form a weathertight construction without waves, warps, buckles, fastening stresses or distortion, which allows for expansion and contraction. Sheet metal mechanic shall be responsible for cutting, fitting, drilling, and other operations in connection with sheet metal required to accommodate the work of other trades. Coordinate installation of sheet metal items used in conjunction with roofing with roofing work to permit continuous roofing operations.

D. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

E. Roofing accessories which are installed integral with roofing membrane are specified in roofing system sections as roofing work.

1.02 RELATED WORK

A. Division 07: Roofing Systems

1.03 SUBMITTALS

A. Product Data, Flashing, Sheet Metal, Accessories: Submit manufacturer's product data, installation instructions, and general recommendations for each specified sheet material and fabricated product.

B. Shop Drawings, Flashing, Sheet Metal, Accessories: Submit Shop Drawings showing layout, joining, profiles, and anchorages of fabricated work, including major counter flashings, trim / fascia units, gutters, downspouts, scuppers, and expansion joint systems; layouts a 1/4 inch scale, details at 3 inches scale.

1.04 QUALITY ASSURANCE

A. Standards:
1. Comply with design and installation methods of SMACNA Architectural Sheet Metal Manual.
2. Comply with The NRCA Roofing and Waterproofing Manual installation details.

1.05 DELIVERY, STORAGE AND HANDLING

A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact.

B. Storage: Adequately protect against damage while stored at the site.

C. Handling: Comply with Manufacturer's instructions.

1.06 JOB CONDITIONS

A. Coordinate work of this section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of the work and protection of materials and finishes.

PART 2 PRODUCTS

2.01 FLASHING AND SHEET METAL MATERIALS

A. Sheet Metal Flashing/Trim:
1. Zinc-Coated Steel: Commercial quality with 0.20% copper, ASTM A 525 except ASTM A 527 for lock-forming, G90 hot-dip galvanized, mill phosphatized where indicated for painting; 0.0359 inch thick (24 gage) except as otherwise indicated.

B. Commercial Grade Gutters:
1. 24 ga. Kynar 500 coated galvanized steel.
2. Support straps and hangers at 30 inches on center.
3. Concealed joint covers.

C. Parapet Copings:
1. 24 ga. Kynar 500 coated galvanized steel.
2. Face height: outside height 4 inches min or greater if indicated on the Drawings; slope 1/2 inch to 3/4 inch down to inside.
3. Lengths: 12 feet-0 inch min.
4. Joints – splice in accordance with manufacturer's product data.
5. Nailers: Not required for snap-lock coping designs, as per product manufacturer.
6. Provide splice plates, anchor plates, fasteners.

D. Reglets and Counterflashings: Fry Reglet Corporation, Type ST at stucco, Type MA at masonry, Type CO (galvanized steel) at concrete, or fabricated as indicated on Drawings.

2.02 MISCELLANEOUS MATERIALS AND ACCESSORIES

A. Solder: For use with steel or copper, provide 50 - 50 tin/lead solder (ASTM B 32), with rosin flux.

B. Fasteners: Same metal as flashing/sheet metal or, other noncorrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened.

C. Bituminous Coating: FS TT-C-494 or SSPC - Paint 12, solvent type bituminous mastic, nominally free of sulfur, compounded for 15-mil dry film thickness per coat.

D. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.

E. Elastomeric Sealant: Generic type recommended by manufacturer of metal and fabricator of components being sealed; comply with FS TT-S-0027, TT-S-00230, or TT-S-001543.

F. Epoxy Seam Sealer: 2-part noncorrosive metal seam cementing compound, recommended by metal manufacturer for exterior/interior nonmoving joints including riveted joints.

G. Adhesives: Type recommended by flashing sheet manufacturer for waterproof/weather-resistant seaming and adhesive application of flashing sheet.

H. Metal Accessories: Provide sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gage required for performance.

I. Gutter and Conductor-Head Guards: 24 gage bronze or nonmagnetic stainless steel mesh or fabricated units, with selvaged edges and noncorrosive fasteners. Select materials for compatibility with gutter and downspouts.

J. Elastic Flashing Filler: Closed-cell polyethylene or other soft closed-cell material recommended by elastic flashing manufacturer as filler under flashing loops to ensure movement with minimum stress on flashing sheet.

K. Roofing Cement: ASTM D 2822, asphaltic.

2.03 FABRICATION

A. General Metal Fabrication: Shop-fabricate work to greatest extent possible. Comply with details shown, and with applicable requirements of SMACNA “Architectural Sheet Metal Manual” and other recognized industry practices. Fabricate for waterproof and weather-resistant performance; with expansion provisions for running

work, sufficient to permanently prevent leakage, damage or deterioration of the work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.

B. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. For metal other than aluminum, tin edges to be seamed, form seams, and solder. Form aluminum seams with epoxy seam sealer; rivet joints for additional strength where required.

C. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used, or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

D. Sealant Joints: Where movable, non-expansive type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.

E. Separations: Provide for separation of metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.

F. Aluminum Extrusion Units: Fabricate extruded aluminum running units with formed or extruded aluminum joint covers, for installation behind main members where possible. Fabricate mitered and welded corner units.

G. Conductor Heads: Fabricate conductor heads to not less than 10 inch wide by 8 inch deep by 8 inches from front to back unless shown otherwise on the Drawings. Form front and side edges channel shape not less than 1/2 inch wide flanges with edge hemmed. Slope bottom to sleeve to downspout at not less than 60 degree angle. Extend wall edge not less than one inch above front edge. Solder joints for water tight assembly. Fabricate outlet tube or sleeve at bottom not less than 2 inches long to insert into downspout.

H. Prefabricated counterflashing and reglet system: Form upper edge of counterflashing with an approved snap lock flange to engage reglet receiver and to provide a spring action at bottom edge against built-up flashing.

2.04 FINISH

A. Shop prepare and prime exposed ferrous metal surfaces.

B. Backpaint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 1.5 mil.

PART 3 EXECUTION

3.01 INSTALLATION REQUIREMENTS

A. General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations, and with SMACNA "Architectural Sheet Metal Manual." Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams which will be permanently watertight and weatherproof.

B. Underlayment: Where stainless steel or aluminum is to be installed directly on cementitious or wood substrates, install a slip sheet of red rosin paper and a course of polyethylene underlayment.

C. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof polyethylene underlayment.

D. Metal Edgings:
1. Provide metal drip edgings designed to allow water run-off to drip free of underlying construction at exposed edges of roofs indicated.
2. Fabricate from 24 gage galvanized iron, profile indicated.
3. Extend flanges of metal edgings out on top of roofing or base flashing (as applicable) not less than 4 inches. Set in full bed of plastic cement. Spread full bed of plastic cement between sheets at laps. Nail flanges to wood nailer when nailers are under the membrane or flashing (as at roof edge or gravel stops). Nail as shown in the referenced quality standards.

E. Eave Flashing:
1. One piece in width, applied in 8 to 10 foot lengths. Provide a 3/4 inch continuous fold in the upper edge of the sheet to engage cleats spaced not more than 10 inch on center.
2. Locate the upper edge of flashing not less than 18 inches from the outside face of the building, measured along the roof slope.
3. Fold lower edge of the flashing over and loose-lock into a continuous edge strip on the fascia.
4. Where eave flashing intersects metal valley flashing, secure with one-inch flat locked joints with cleats that are 10 inches on center.

F. Sheet Metal Covering on Flat, Sloped, or Curved Surfaces:
1. Except as specified or indicated otherwise, cover and flash all minor flat, sloped, or curved surfaces such as crickets, bulkheads, dormers and small decks with metal sheets of the material used for flashing; maximum size of sheets, 16 by 18 inch.
2. Fasten sheets to sheathing with metal cleats.
3. Lock seams and solder. Lock aluminum seams as recommended by aluminum manufacturer.
4. Provide an underlayment of roofing felt for all sheet metal covering.

G. Flashing at Roof Penetrations and Equipment Supports:
1. Provide metal flashing for all pipes, ducts, and conduits projecting through the roof surface and for equipment supports, guy wire anchors, and similar items supported by or attached to the roof deck.

H. Install reglets to receive counter-flashing in manner and by methods indicated. Where shown in concrete, furnish reglets to trades of concrete work for installation as work of Division three sections. Where shown in masonry, furnish reglets to trades of masonry work, for installation as work of Division four sections.

I. Counterflashing:
1. Provide metal counterflashing at top edges of base flashings and at other locations indicated.
2. Lap end joints a minimum of 3 inches. Do not solder or weld joints. Make flashing continuous at angles. Counterflashing shall overlap base flashing a minimum of 4 inches, unless otherwise indicated.
3. Where counterflashing terminates in reglets, fasten flashing with lead wedges every 12 inches. Fill reglets continuously with synthetic rubber type sealant.

J. Install prefabricated coping system in accordance with roofing manufacturer's product data.

K. Scuppers: Line interior of scupper openings with sheet metal. Extend the lining through and project outside of the wall to form a drip on the bottom edge and form to return not less than one inch against the face of the outside wall at the top and sides. Fold outside edges under 1/2 inch on all sides. Provide the perimeter of the lining approximately 1/2 inch less than the perimeter of the scupper. Join the top and sides of the lining on the roof deck side to a closure flange by a locked and soldered joint. Join the bottom edge by a locked and soldered joint to the closure flange, where required, form with a ridge to act as a gravel stop around the scupper inlet. Provide surfaces to receive the scupper lining and coat with bituminous plastic cement.

3.02 CLEANING AND PROTECTION

A. Clean exposed metal surfaces, removing substrates which might cause corrosion of metal or deterioration of finishes.

B. Protection: Protect flashings and sheet metal work during construction from damage or deterioration, other than natural weathering, at time of substantial completion.

END OF SECTION

SECTION 07 72 49

ROOF MAINTENACE FALL-PROTECTION SYSTEM

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Design and provide rooftop fall protection system for roof and rooftop equipment maintenance personnel in areas shown on the Drawings.
   1. System shall be a horizontal cable-based fall arrest system.
   2. System shall be compatible with existing building's structure and membrane roofing system being installed as part of this project.

1.02 REFERENCES

A. American National Standards Institute:
   1. ANSI Z359.1 current edition: Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components.
   2. ANSI Z359.6 current edition: Specifications and Design Requirements for Active Fall Protection Systems.

B. Occupational Health and Safety Administration (OSHA):
   1. OSHA 1926.502: Fall Protection Systems Criteria and Practices.

1.03 SYSTEM DESCRIPTION

A. Design a fall protection system to allow safe work on the rooftop as per Occupational Health and Safety regulations.
   1. The fall protection system shall allow the user to maintain 100% connectivity per OSHA 1926.502 by permitting the connection to one cable prior to disconnecting from the previous cable.
   2. The fall protection system must provide secure anchorage to arrest a fall by the user.
   3. All essential components shall be included as part of the above referenced system, though not specifically stated in the following Specifications, so as to provide a complete and fully operational system.

1.04 ADMINISTRATIVE COORDINATION

A. Coordination: Coordinate the design and installation of horizontal cable fall protection system with structural supports and finish materials.

1.05 SUBMITTALS

A. Product Data: Manufacturer's data and product information indicating the sizes, descriptions, capacities, test certificates and other descriptive data showing in sufficient detail that the product complies with the Contract requirements.

B. Shop Drawings: For fabrication, showing the complete fall protection system. Layout Drawings of each system in relation to the supporting structure indicating the location of properly labeled components.

C. Designer's Qualification Statement.

D. Furnish proof of installer's certification approval by manufacturer of the system in the form of the installer's current certificate issued by the manufacturer.

E. Product Certificate: To contain the manufacturer's serial number, name and part number of each individual component used in the system.

F. System Manual:
   1. Maintenance Procedures: Including parts list and maintenance requirements for all equipment.
   2. Operations Procedures: Indicating the sizes, descriptions, capacities, test certifications and other descriptive data showing sufficient detail that the product complies with the contract requirements.

G. As-Built Drawings: Provide a copy of As-Built Drawings with the System Manual.

H. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with the manufacturer.

1.06 QUALITY ASSURANCE

A. Design and engineering of system shall be performed by a Fall-Protection System Engineer experienced in this type of work and licensed in the State of New Mexico.

B. Installation of fall protection system shall be performed by a System Manufacturer's Certified Installer.

C. Materials and equipment required under this section shall be supplied by a single manufacturer.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in manufacturer's original unopened packaging.

B. Store materials in original protective packaging.

C. Protect materials form soiling, physical damage and moisture.

1.08 PROJECT CONDITIONS

A. Field Measurements: Perform prior to preparation of Shop Drawings and Fabrication Drawings to ensure required fit and dimensions.

B. Coordinate layout and installation of reinforcements for fall protection with existing framing of building. Where framing is inadequate, notify A/E in writing prior to roof system replacement activities commence.

1.09 WARRANTY

A. Provide Closeout Submittals as required by the General Conditions.

B. Correct defective work for a period of 1-year after the Date of Substantial Completions.

C. Provide manufacturer's Lifetime Warranty for system components.

PART 2 PRODUCTS

2.01 SYSTEM DESCRIPTION

A. Provide system which allows users to walk uninterrupted the entire length of the system and provides secure anchorage to arrest a fall. System shall allow attachment at any point along the cable and enable freedom of movement along the cable as it passes by components.

B. Prepare system layout, design, analysis, and calculations certified by a Licensed Professional Engineer.

C. System shall be capable of spanning a minimum of 30 feet between anchors and provide continuous hands-free access for the user of the roof fall protection system.

D. Fall protection systems shall be capable of being utilized by multiple workers, based on required system calculations.

E. Maximum cable tension for multi-user system (up to two users): 1,349 lbf.

F. Maximum cable tension for multi-user system (up to three users): 2,023 lbf.

G. System shall not be used as a tieback anchor for façade maintenance.

2.02 MATERIALS

A. All materials shall be new, and the complete fall protection system, except for accessory equipment, shall be essentially the product of one manufacturer regularly engaged in the production of such equipment.

2.03 COMPONENTS

A. Components shall consist of:
   1. Cable: Primary Cable shall be Stainless Steel meeting ASTM A666, Type 316.
   2. Anchorage connectors.
   3. Tensioners.
   4. Guides.
   5. Swage toggles.
   6. Attachment devices.
   7. Anchorage posts.
   8. Supports.

B. Connectors shall be drop forged, pressed or formed steel, or made of equivalent materials.

C. Connectors shall have a corrosion-resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system.

D. Dee-rings and snaphooks shall have a minimum tensile strength of 5,000 pounds (22.2 kN).

E. Dee-rings and snaphooks shall be proof-tested to a minimum tensile load of 3,600 pounds (16 kN) without cracking, breaking, or taking permanent deformation.

F. Snaphooks shall be sized to be compatible with the member to whom they are connected to prevent unintentional disengagement of the snaphook by depression of the snaphook keeper by the connected member, or shall be a locking type snaphook designed and used to prevent disengagement of the snaphook by the contact of the snaphook keeper by the connected member. Only locking type snaphooks shall be used and designed for the following connections, snaphooks shall not be engaged:
   1. Directly to webbing, rope or wire rope;
   2. To each other;
   3. To a dee-ring to which another snaphook or other connector is attached;
   4. To a horizontal lifeline; or
   5. To any object which is incompatibly shaped or dimensioned in relation to the snaphook such that unintentional disengagement could occur by the connected object being able to depress the snaphook keeper and release itself.

G. Horizontal lifelines shall be designed, installed, and used, under the supervision of a qualified person, as part of a complete personal fall arrest system, which maintains a safety factor of at least two.

H. Lanyards and vertical lifelines shall have a minimum breaking strength of 5,000 pounds (22.2 kN).

I. Lifelines shall be protected against being cut or abraded.

J. Self-retracting lifelines and lanyards which automatically limit free fall distance to 2 feet (0.61 m) or less shall be capable of sustaining a minimum tensile load of 3,000 pounds (13.3 kN) applied to the device with the lifeline or lanyard in the fully extended position.

K. Self-retracting lifelines and lanyards which do not limit free fall distance to 2 feet (0.61 m) or less, ripstitch lanyards, and tearing and deforming lanyards shall be capable of sustaining a minimum tensile load of 5,000 pounds (22.2 kN) applied to the device with the lifeline or lanyard in the fully extended position.

L. Ropes and straps (webbing) used in lanyards, lifelines, and strength components of body belts and body harnesses shall be made from synthetic fibers.

M. Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting

at least 5,000 pounds (22.2 kN) per employee attached, or shall be designed, installed, and used as follows:

1. As part of a complete personal fall arrest system which maintains a safety factor of at least two; and
2. Under the supervision of a qualified person.

N. Personal fall arrest systems, when stopping a fall, shall:

1. limit maximum arresting force on an employee to 900 pounds (4 kN) when used with a body belt;
2. limit maximum arresting force on an employee to 1,800 pounds (8 kN) when used with a body harness;
3. be rigged such that an employee can neither free fall more than 6 feet (1.8 m), nor contact any lower level;
4. bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet (1.07 m); and,
5. have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of 6 feet (1.8 m), or the free fall distance permitted by the system, whichever is less.

2.04 FABRICATION

A. Fabricate anchoring devices as recommended by the system manufacturer to provide adequate support for intended use. Shop-fabricate required anchorage posts using structural steel with material test certificates for full material traceability.

B. Welding: AWS structural specification D1.1 by certified welders.

C. Fabricate joints in a manner to discourage water accumulation.

D. Swaging: Swage cable in-line with the anchor point.

E. Finishes:

1. Stainless Steel: Electro polished for corrosion resistance.
2. Structural Steel: Zinc galvanized for corrosion resistance.
3. Aluminum: Anodized or powder coated.

2.05 ACCESSORIES

A. Fasteners: Designed to support a load on the system of two times the maximum design load without failure.

B. Signage: Provide signs and system identification tags per OSHA regulations.

C. Flashing: Comply with requirements of Division 07 for roofing and flashing.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine areas and conditions, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of fall protection equipment.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Coordinate location of fall protection equipment indicated to be attached to structural substrate or surface of roofing system, and furnish anchoring devices with templates and diagrams.

3.03 INSTALLATION

A. System shall be installed by manufacturer's trained and certified installer.

B. Install in accordance with approved Shop Drawings and manufacturer's instructions.

C. Install anchorage and fasteners in accordance with manufacturer's recommendations.

D. Exposed work shall be true to line and level with accurate angles, surfaces and with straight square edges. Coordinate anchorage system with supporting structure.

E. Do not load or stress system until materials and fasteners are properly installed and ready for service.

3.04 FIELD QUALITY CONTROL

A. Test fall protection system for compliance to ensure that system components operate as designed and per OSHA requirements.

3.05 ADJUSTING

A. Adjust fall protection components to function smoothly and safely.

3.06 CLEANING

A. Clean components of any deleterious coatings or compounds.

B. Remove loose materials, crating, and packaging materials from site.

3.07 CLOSEOUT ACTIVIITIES

A. Demonstration: Demonstrate operation of system to Owner's personnel
   1. Describe function, operation and inspection of each item

B. Training of owner's personnel:
   1. Train Owner's personnel in operation and inspection of system.
   2. Train Owner's personnel in the proper techniques of recue and retrieval of fallen personnel.
   3. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
   4. Location: Project Site.

END OF SECTION

SECTION 07 92 00

ELASTOMERIC SEALANTS

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Provide elastomeric joint sealants, joint fillers and joint backer materials for complete and durable seal at all locations scheduled and as indicated on the Drawings.

1.02 RELATED WORK

A. Included Elsewhere to be Performed in Compliance with this Section:
1. Division 06 Wood, Plastics and Composites
2. Division 07: Thermal and Moisture Protection
3. Division 09: Finishes

B. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 01 of these Specifications.

1.03 REFERENCES

A. ASTM C 321 – Standard Test Method for Bond Strength of Chemical-Resistant Mortars.

B. ASTM C 834 – Standard Specification for Latex Sealants.

C. ASTM C 882 – Standard Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear.

D. ASTM C 919 – Standard Practice for Use of Sealants in Acoustical Applications.

E. ASTM C 920 – Standard Specification for Elastomeric Joint Sealants.

F. ASTM C 1330 – Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants.

G. FS (Federal Specification) TT-S-00227E (COM-NBS) – Interim Federal Specification for Sealing Compound: Elastomeric Type, Multi-Component (for Caulking, Sealing, and Glazing in Buildings and Other Structures).

H. FS (Federal Specification) TT-S-00230C – Interim Federal Specification for Sealing Compound: Elastomeric Type, Single Component (for Caulking, Sealing, and Glazing in Buildings and Other Structures).

I. FS (Federal Specification) TT-S-001543 (COM-NBS) – Interim Federal Specification for Sealing Compound: Silicone Rubber Base (for Caulking, Sealing, and Glazing in Buildings and Other Structures).

1.04 SUBMITTALS

A. Comply with pertinent provisions of SUBMITTALS SECTION.

B. Product Data: Materials list of items proposed to be provided under this Section.

C. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

D. Shop Drawings or catalog illustrations in sufficient detail to show installation and interface of the work of this Section with the work of adjacent trades.

E. Manufacturer's current recommended installation procedures which, when reviewed by the Architect/Engineer (A/E), will become the basis for accepting or rejecting actual installation procedures used on the Work.

F. Color Charts of Sealants: Colors shall be selected by the A/E from the range of manufacturer's standard colors.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company regularly engaged in manufacturing and marketing of products specified in this section.

B. Applicator Qualifications:
1. Applicator shall have at least 3 years' experience in installing materials of types specified and shall have successfully completed at least three projects of similar scope and complexity.

C. Single Source Responsibility for Joint Sealants:
1. Obtain joint sealants from single manufacturer for each different product required to ensure compatibility.
2. Manufacturer shall instruct applicator in procedures for intersecting sealants.

D. Perform work in accord with ASTM C-1193 guidelines except where more stringent requirements are indicated or specified.

E. Schedule applications of waterproofing, water repellents and preservative finishes after sealant installation unless sealant manufacturer approves otherwise in writing. Cure installed sealant sufficiently prior to subsequent applications.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver products in original factory packaging bearing identification of product, manufacturer, and batch number. Provide Material Safety Data Sheets for each product.

B. Store products in a location protected from freezing, damage, construction activity, precipitation, and direct sunlight in strict accordance with manufacturer's recommendations.

C. Condition products to approximately 60°F to 70°F (16°C to 21°C) for use in accordance with manufacturer's recommendations.

D. Handle all products with appropriate precautions and care as stated on Material Safety Data Sheet.

1.07 SUBSTRATE CONDITIONS

A. General:
1. Provide joints properly dimensioned to receive the approved sealant system.
2. Provide joint surfaces that are clean, dry, sound and free of voids, deformations, protrusions and contaminants that may inhibit application or performance of the joint sealant.
3. Provide a reservoir to accept sealant at expansion joints with preformed joint fillers.

1.08 PROJECT CONDITIONS

A. Do not use products under conditions of precipitation or freezing weather. Use appropriate measures for protection and supplementary heating to ensure proper curing conditions in accordance with manufacturer's recommendations if application during inclement weather occurs.

B. Ensure substrate is dry.

C. Protect adjacent work from contamination due to mixing, handling, and application of flexible epoxy joint filler.

1.09 WARRANTY

A. Deliver to the A/E signed copies of the following written warranties against adhesive and cohesive failure of the sealant and against infiltration of water and air through the sealed joint for a period of 3 years from date of completion.
1. Manufacturer's standard warranty covering sealant materials.
2. Applicator's standard warranty covering workmanship.
3. Defective work shall include, but not be restricted to, joint leakage, cracking, crumbling, melting, running, loss of adhesion, loss of cohesion, or staining of adjoining or adjacent work or surfaces.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers may be from those listed or an A/E approved equal:
1. Sonneborn(R) Building Products, ChemRex, Inc.
2. General Electric.
3. Dow Corning.
4. Pecora.
5. Tremco, Inc.
6. A/E approved equal.

B. Compatibility:
1. Provide joint sealants, joint fillers and accessory joint materials that are compatible with one another and with joint substrates under project conditions.
2. Install joint sealants, joint fillers and related joint materials that are nonstaining to visible joint surfaces and surrounding substrate surfaces.

2.02 MATERIALS

A. Sealant Type A: Low-modulus, non-sag sealant; comply with ASTM C920, TT-S-00230C, Grade NS, Class 25. Acceptable sealants:
1. Single Component Urethane Type S, comply with TT-S-00230C.
   a. Sonolastic(R) NP 1.
   b. Vulkem 116, 911, 921 or 931.
   c. Tremflex 25.
   d. Pecora Dynatrol I XL.
   e. A/E approved equal.
2. Multi Component Urethane Type M, comply with TT-S-00227E.
   a. Sonolastic(R) NP 2.
   b. Dymeric 511.
   c. Vulkem 227 or 922.
   d. Pecora Dynatred.
   e. A/E approved equal.
3. Single-Component Silicones Type S, comply with TT-S-001543A.
   a. Spectrem 1, 2, or 3.
   b. Pecora 860.
   c. A/E approved equal.

B. Sealant Type B: Self-leveling sealant having a Shore A hardness of not less than 25 or more than 50 and plus-or-minus 25 percent joint movement capability; comply with ASTM C920, Grade P or NS, Class 25. Acceptable sealants:
1. Single-Component Urethane, Type S, comply with TT-S-00230C.
   a. Sonolastic SL 1.
   b. Vulkem 45.
   c. Tremflex SL.
   d. Pecora Urexpan NR-201.
   e. A/E approved equal.
2. Multi-component Urethane, Type M, comply with TT-S-00227E.
   a. Sonolastic SL 2.
   b. THC-900/901.
   c. Vulkem 227 or 245.
   d. Pecora Urexpan NR-200.
   e. A/E approved equal.

C. Sealant Type C: Non-skinning and non-staining flexible sealant designed for buttering or bedding application between non-porous substrates, including galvanized steel, unpainted steel and coated metals that are squeezed together by fastening.
1. Butyls:
   a. Tremco JS-773.
   b. Tremco Butyl Sealant.

c. Pecora .
d. A/E approved equal.

D. Sealant Type D: Non-sag, high-performance sealant for perimeter caulking and glazing. Acceptable products
1. Urethanes:
a. Vulkem 1, 911, 921 or 931.
b. Dymonic.
c. Tremflex 25.
d. A/E approved equal.
2. Silicones:
a. Spectrem 2 or 3.
b. Proglaze.
c. A/E approved equal.
3. Other:
a. JS-773.
b. Tremco Butyl Sealant.
c. Tremco Acoustical.
d. A/E approved equal.

E. Sealant Type E: Comply with United States Department of Agriculture (USDA) guidelines for incidental food contact with the cured sealant; comply with ASTM C920, Type S or M, Grade P or NS, Class 25; select color from listing of those approved. Acceptable Sealants:
1. Urethanes:
a. Vulkem 116, 911, 921, or 931.
b. Dymonic.
c. Tremflex 25.
d. Pecora Dynatrol I XL or II.
e. A/E approved equal.
2. Silicones:
a. Proglaze.
b. Spectrem 1, 2 or 3.
c. Tremsil 600.
d. Pecora 860.
e. A/E approved equal.

F. Sealant Type F: Certified by National Sanitation Foundation as conforming to the requirements of NSF Standard 61-Drinking Water System Components-Health Effects; comply with ASTM C920, Type S or M, Grade P or NS, Class 25; select color from the NSF listing. Acceptable sealants:
1. Single Component Urethane:
a. Vulkem 45 or 921.
b. Dymonic.
c. A/E approved equal.
2. Multi Component Urethane:
a. Vulkem 245.
b. A/E approved equal.

3. Polysulfide:
    a. Pecora Synthacalk GC2+.
    b. A/E approved equal.

G. Sealant Type G: Gun grade sealant suitable for continuous water immersion, designed for use in swimming pools, fountains, cooling towers, waste water treatment plants and plaza decks; conforms to ASTM C920, Type M, Grade NS, Class 25, Use NT, T, M, A and O. USDA approved, comply with TT-S-00227E. Acceptable sealants:
1. Multi Component Urethane:
    a. Vulkem 227.
    b. Pecora Dynatred.
    c. A/E approved equal.

H. Sealant Type H: Cold-applied self-leveling modified elastomeric sealant designed specifically for sealing joints in airport runways, terminal ramps, hangars and transportation storage areas; meeting Federal Specification SS-S-200E; SS-S-195B & TT-S-00227E: ASTM D-1850; ASTM C-920 & PA DOT 408/90.
1. Multi-Component Urethane:
    a. Vulkem 202.
    b. Pecora Urexpan NR-300.
    c. A/E approved equal.

I. Sealant Type I: Non-sag polyurethane pick-resistant flexible security sealant having a Shore A hardness of 55. Acceptable sealants:
1. Urethane:
    a. Vulkem 617.
    b. Pecora Dynaflex.
    c. A/E approved equal.
2. 2-component Epoxy, gunnable:
    a. Sonneborn/Chem Rex Epolith(R)-G.
3. 2-component Epoxy, pourable:
    a. Sonneborn/Chem Rex Epolith(R)-P.

J. Sealant Type J: Comply with ASTM C920, Type S or M, Grade NS, Class 25, comply with EIMA 300.01. Acceptable products:
1. Urethanes:
    a. Vulkem 922.
    b. Dymeric 511.
    c. Pecora Dynatrol II.
    d. A/E approved equal.
2. Silicones:
    a. Spectrem 1 or 3.
    b. Pecora 890.
    c. A/E approved equal.

K. Sealant Type K: Comply with ASTM C920, Type M, Grade NS, Class 50, Use NT, G, M, A and O. Acceptable Products.
1. Silicone: Tremco Spectrem 4-TS.

L. Joint Cleaner: Non-corrosive and non-staining type recommended by sealant manufacturer and compatible with joint forming materials.

M. Joint Primer: As recommended by sealant manufacturer for substrates, conditions and exposures indicated.

N. Bond Breaker: Polyethylene tape or other adhesive faced tape as recommended by sealant manufacturer to prevent sealant contact where it would be detrimental to sealant performance.

O. Joint Backer: Polyethylene foam rod:
1. Soft: Non-gassing, reticulated closed-cell for use with cold-applied joint sealants. Comply with ASTM C 1330.
2. Closed-cell: Designed for use with cold-applied joint sealants for on-grade or below-grade applications.

P. Joint Filler: Closed-cell polyethylene joint filler designed for use in cold joints, construction joints, or isolation joints wider than 1/4 inch (6 mm).
1. Size required for joint design.
2. Masking Tape: Non-staining, non-absorbent tape product compatible with joint sealants and adjacent joint surfaces that is suitable for masking.

Q. Expanding Insulating Foam Sealant for filling gaps and sealing around windows and doors.

2.03 OTHER MATERIALS

A. Provide other materials as selected by the Contractor and approved by the sealant manufacturer as compatible, which not specifically described but are required for a complete and proper installation.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.

B. Applicator shall examine the areas and conditions under which work of this Section will be performed.
1. Verify conformance with manufacturer’s requirements.
2. Report unsatisfactory conditions in writing to the A/E.
3. Do not proceed until unsatisfactory conditions are corrected.

C. Preformed joint fillers in joints to be sealed should provide a reservoir to accept the sealant such as by a molded breakaway joint cap or a removable block out. Preformed joint fillers that may contact the sealant should not be impregnated with oil, bitumen, non-curing polymers or similar contaminants.

3.02 PREPARATION

A. Prepare surfaces to receive sealants in accord with sealant manufacturer's instructions and recommendations except where more stringent requirements are indicated.

B. Thoroughly clean joint surfaces using cleaners approved by sealant manufacturer whether primers are required or not.
   1. Remove all traces of previous sealant and joint backer by mechanical methods, such as by cutting, grinding and wire brushing, in manner not damaging to surrounding surfaces.
   2. Remove paints from joint surfaces except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer.
   3. Remove wax, oil, grease, dirt film residues, temporary protective coatings and other residues by wiping with cleaner recommended for that purpose. Use clean, white, lint-free cloths and change cloths frequently.
   4. Remove dust by blowing clean with oil-free, compressed air.

C. Back-Up Material:
   1. Install appropriate size backer rod, larger than joint where necessary according to manufacturer's recommendations.
   2. Install polyethylene joint filler in joints wider than 1/4 inch (6 mm) to back-up material per manufacturer's recommendations.
   3. Do not install epoxy joint filler over backer rod.

D. Bond Breaker: Install bond-breaker strip in joint to be sealed on top of back-up material to prevent adhesion of sealant to back-up material; install per manufacturer's recommendations.

E. Prime Joint Substrates Where Required:
   1. Use and apply primer according to sealant manufacturer's recommendations.
   2. Confine primers to sealant bond surfaces; do not allow spillage or migration onto adjoining surfaces.

F. Taping:
   1. Use masking tape where required to prevent sealant or primer contact with adjoining surfaces that would be permanently stained or otherwise damaged by such contact or the cleaning methods required for removal.
   2. Apply tape so as not to shift readily and remove tape immediately after tooling without disturbing joint seal.

3.03 INSTALLATION

A. Provide the approved sealant system indicated in the schedule, and in strict accord with the manufacturer's recommendations as approved by the A/E.

B. Install sealants immediately after joint preparation.

C. Mix and apply multi-component sealants in accord with manufacturer's printed instructions.

D. Install sealants to fill joints completely from the back, without voids or entrapped air, using proven techniques, proper nozzles and sufficient force that result in sealants directly contacting and fully wetting joint surfaces.

E. Install sealants to uniform cross-sectional shapes with depths relative to joint widths that allow optimum sealant movement capability as recommended by sealant manufacturer.

F. Tool sealants in manner that forces sealant against back of joint, ensures firm, full contact at joint interfaces and leaves a finish that is smooth, uniform and free of ridges, wrinkles, sags, air pockets and embedded impurities.
   1. Dry tooling is preferred; tooling liquids that are non-staining, non-damaging to adjacent surfaces and approved by sealant manufacturer may be used if necessary when care is taken to ensure that the liquid does not contact joint surfaces before the sealant.
   2. Provide concave tooled joints unless otherwise indicated to provide flush tooling or recessed tooling.
   3. Provide recessed-tooled joints where the outer face of substrate is irregular.

G. Remove sealant from adjacent surfaces in accord with sealant and substrate manufacturer recommendations as work progresses.

H. Protect joint sealants from contact with contaminating substances and from damages. Cut out, remove and replace contaminated or damaged sealants, immediately, so that they are without contamination or damage at time of substantial completion.

3.04 INSTALLATION SCHEDULE

A. Sealant Type A: For exterior and interior joints in vertical surfaces and non-traffic horizontal surfaces such as, but not limited to:
   1. Control and expansion joints on exposed interior surfaces of exterior walls.
   2. Joints between different materials.
   3. Perimeter joints on exposed interior surfaces of exterior openings.
   4. Trim or finish joints subject to movement.

B. Sealant Type C: For interior or exterior joints in vertical surfaces between laps in fabrications of sheet metal:
   1. Between dissimilar metals to prevent galvanic action.
   2. Air ducts.

C. Sealant Type D: For general architectural sealing and caulking not listed above such as:
   1. Under metal thresholds and saddles.
   2. Bedding sealant for sheet metal flashing.
   3. For frames of metal or wood and glazing.
   4. Silicone only around plumbing fixtures.

END OF SECTION

SECTION 09 90 00

PAINTING AND COATING

PART 1 GENERAL

1.01 SUMMARY

A. Section includes surface preparation and field application of paints, stains, varnishes, and other coatings.
   1. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.

B. Extent of painting work is indicated on drawings and schedules, and as herein specified.

C. Work includes painting and finishing of interior and exterior exposed items and surfaces throughout project, except as otherwise indicated.

D. Surfaces to be painted: Except where natural finish of material is specifically noted as a surface not to be painted, paint exposed surfaces, whether or not colors are designated in "schedules". Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas. If color or finish is not designated, Architect will select these from standard colors or finishes available.

E. Following categories of work are not included as part of field-applied finish work:
   1. Prefinished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified for such items as (but not limited to) metal toilet enclosures, prefinished partition systems, architectural casework, and finished mechanical and electrical equipment, including light fixtures, switchgear, and distribution cabinets.
   2. Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and generally inaccessible areas.
   3. Finished Metal Surfaces: Unless otherwise indicated, metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish painting.
   4. Operating Parts: Unless otherwise indicated, moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts will not require finish painting.

F. Following categories of work are included under other sections of these specifications:
   1. Shop Primers: Unless otherwise specified, shop priming of ferrous metal items is included under various sections for structural steel, metal fabrications, hollow metalwork and similar items.

G. Do not paint over any code-required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, or nomenclature plates.

1.02 REFERENCES

A. ASTM International:
1. ASTM D16 – Standard Terminology Relating to Paint, Varnish, Lacquer, and Related Products.
2. ASTM D4442 – Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.
3. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.

B. National Fire Protection Association:
1. NFPA 255 – Standard Method of Test of Surface Burning Characteristics of Building Materials.

C. Painting and Decorating Contractors of America:
1. PDCA – Architectural Painting Specification Manual.

D. SSPC: The Society for Protective Coatings:
1. SSPC – Steel Structures Painting Manual.

E. Underwriters Laboratories Inc.:
1. UL 723 – Tests for Surface Burning Characteristics of Building Materials.

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F. National Association of Corrosion Engineers – NACE International.

1.03 SUBMITTALS

A. Product Data: For each product indicated.

B. Samples:
1. For initial color selection.
2. For each color and sheen after selection of colors is made.

C. Coating Maintenance Manual: Upon completion of project, furnish coating maintenance manual. Basis of Design: Sherwin Williams "Custodian Project Color and Product Information" report or equal.
1. Manual shall include an Area Summary with finish schedule, Area Detailing designating where each product/color/finish was used, product data pages, SDS Sheets, care and cleaning instructions, touchup procedures, and color samples of each color and finish used.

1.04 QUALITY ASSURANCE

A. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.

B. Coordination of Work: Review other Sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information or characteristics of finish materials provided for use, to ensure compatible prime coats are used.

1.05 PRE-INSTALLATION MEETING

A. Schedule pre-installation meeting with Owner and A/E one week minimum prior to commencing work of this Section.

1.06 DELIVERY AND STORAGE

A. Delivery: Deliver materials to job site in original, new, and unopened packages and containers bearing manufacturer's name and label and following information:
1. Name or title of material.
2. Fed. Spec. number, if applicable.
3. Manufacturer's stock number and date of manufacture.
4. Manufacturer's name.
5. Contents by volume, for major pigment and vehicle constituents.
6. Thinning instructions.
7. Application instructions.
8. Cleaning instructions.
9. Color name and number.

B. Storage:
1. Store materials not in actual use in tightly covered containers.
2. Maintain containers used in storage of paint in a clean condition, free of foreign materials and residue.
3. Protect from freezing where necessary.
4. Keep storage area neat and orderly.
5. Remove oily rags and waste daily.
6. Take all precautions to ensure that workmen and work areas are adequately protected from fire hazards and health hazards resulting from handling, mixing and application of paints.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Apply water-based paints only when temperature of surfaces to be painted and surrounding air temperatures are between 50°F (10°C) and 90°F (32°C), unless otherwise permitted by paint manufacturer's printed instructions.

B. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45°F (7°C) and 95°F (35°C), unless otherwise permitted by paint manufacturer's printed instructions.

C. Do not paint in snow, rain, fog or mist, or when relative humidity exceeds 85%, or to damp or wet surfaces, unless otherwise permitted by paint manufacturer's printed instructions.

D. Painting may be continued during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.

1.08 EXTRA MATERIALS

A. Supply 1 gallon of each color, and type; store where directed.

B. Label each container with color, room locations, and date in addition to manufacturer's label.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Sherwin Williams Paints (Listed in Schedule).

B. Products by the following manufacturers may be substituted for scheduled products when equivalent in performance:
1. Dunn Edwards Paint Company.
2. Benjamin Moore.
3. Kwal-Howells.
4. ICI Paints.

2.02 COMPONENTS

A. Coatings: Ready-mixed, except field catalyzed coatings. Prepare coatings:
1. To soft paste consistency, capable of being readily and uniformly dispersed to homogeneous coating.
2. For good flow and brushing properties.
3. Capable of drying or curing free of streaks or sags.

2.03 MATERIALS

A. Material Quality:
1. Provide best quality grade of various types of coatings regularly manufactured by listed manufacturers.
2. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.

B. Color Pigments: Pure, no-fading, applicable types to suit substrates and service indicated.

PART 3 EXECUTION

3.01 INSPECTION

A. Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely completion of work.

B. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator.

C. Starting of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area.

D. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

3.02 GENERAL PREPARATION

A. Product label directions must be read and followed.

B. Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition. Clean surfaces before applying paint or surface treatments.
1. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly painted surfaces.

C. When using a commercially available solvent or cleaner, observe recommended precautions:
1. Follow all manufacturers' specifications for product use and preparation.
2. Test cleaning materials on an isolated or hidden area to determine that the desired result is achieved and that no damage or discoloration occurs as a result of the product's use.
3. Do not mix chemical compounds. Some cleaners may react with other solutions, creating toxic or poisonous vapors.
4. Remove cleaners thoroughly.
5. When working with toxic or caustic substances, wear protective clothing and gear as recommended by the substance manufacturer.
6. Use the proper tools for the cleaning job at hand, and use these tools in a safe and proper manner.

D. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.

E. Surfaces must be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion.
   1. Provide barrier coats over incompatible primers or remove and reprime as required. Notify A/E in writing of any anticipated problems in using specified coating systems with substrates primed by others.

F. Remove mildew before painting by washing with a solution of one part liquid household bleach and three parts of warm water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with clean water and allow the surface to dry 48 hours before painting. Wear protective glasses or goggles, waterproof gloves, and protective clothing, and follow all precautions as listed on the cleaning product label. Quickly wash off any of the mixture that comes in contact with skin. Do not add detergents or ammonia to the bleach/water solution.

G. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place that are not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Following completion of painting of each space or area, reinstall removed items.

3.03 SUBSTRATE PREPARATION

A. Follow the required preparation method identified in the manufacturer's product data sheet and the recommended SSPC surface preparation method.

B. Aluminum: Remove all oil, grease, dirt, oxide and other foreign material by cleaning per SSPC-SP1, Solvent Cleaning.

C. Asbestos Siding: Remove all dust and dirt. If siding has weathered and become porous, treat with Masonry Conditioner.

D. CMU: Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement, and hardeners. Cure concrete and mortar at least 30 days at 75°F. The pH of the surface should be between 6 and 9. On tilt-up and poured-in-place concrete, commercial detergents and abrasive blasting may be necessary to prepare the surface. Fill bug holes, air pockets, and other voids with a cement-patching compound.

E. Brick: Must be free of dirt, loose and excess mortar, and foreign material. Allow brick to weather for at least one year, followed by wire brushing to remove efflorescence. Treat the bare brick with one coat of Loxon Exterior Acrylic Masonry Primer.

F. Concrete: SSPC-SP13 or NACE 6. This standard gives requirements for surface preparation of concrete by mechanical, chemical, or thermal methods prior to the application of bonded protective coating or lining systems. The requirements of this standard are applicable to all types of cementitious surfaces, including cast-in-place concrete floors and walls, precast slabs, masonry walls and shotcrete surfaces. An acceptable prepared concrete surface should be free of contaminants, laitance, loosely

adhering concrete, and dust, and should provide a sound, uniform substrate suitable for the application of protective coating or lining systems.

G. Cement Composition Siding/Panels: Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Scrape and sand existing peeled or checked paint to a sound surface. Pressure-clean, if needed, with a minimum of 2100 psi pressure to remove all dirt, dust, grease, oil, loose particles, laitance, foreign material, and peeling or defective coatings. Allow the surface to dry thoroughly. If the surface is new, test it for pH; many times the pH may be 10 or higher.

H. Copper: Remove all oil, grease, dirt, oxide, and other foreign material by cleaning per SSPC-SP 2, Hand Tool Cleaning.

I. Drywall—Interior and Exterior: Must be clean and dry. Set and spackle nail heads. Tape and cover joints with a joint compound. Sand spackled nail heads and tape joints smooth, and remove dust prior to painting. Spackle exterior surfaces with exterior grade compounds.

J. Exterior Composition Board (Hardboard): Some composition boards may exude a waxy material that must be removed with a solvent prior to coating. Whether factory primed or unprimed, exterior composition board siding (hardboard), clean thoroughly and prime with an alkyd primer.

K. Galvanized Metal: First, Solvent Clean per SSPC-SP1 and apply a test area, priming as required. Allow the coating to dry at least one week before testing. If adhesion is poor, Brush Blast per SSPC-SP7 is necessary to remove these treatments.

L. Plaster: Allow to dry thoroughly for at least 30 days before painting. Ventilate rooms while drying; heat rooms in cold, damp weather. Repair damaged areas with an appropriate patching material. Allow bare plaster to cure and harden. Treat textured, soft, porous, or powdery plaster with a solution of 1-pint household vinegar to 1 gallon of water. Repeat until the surface is hard; rinse with clear water and allow to dry.

M. Previously Coated Surfaces: Maintenance painting will frequently not permit or require complete removal of all old coatings prior to repainting. However, remove all surface contamination such as oil, grease, loose paint, mill scale dirt, foreign matter, rust, mold, mildew, mortar, efflorescence, and sealers to assure sound bonding to the tightly adhering old paint. Clean and dull glossy surfaces of old paint films before repainting. Fill and sand surface irregularities smooth. Thoroughly wash with an abrasive cleanser to clean and dull in one operation, or, wash thoroughly and dull by sanding. Spot prime any bare areas with an appropriate primer. Check for compatibility by applying a test patch of the recommended coating system, covering at least 2 to 3 square feet. Allow to dry one week before testing adhesion per ASTM D3359. If the coating system is incompatible, complete removal is required (per ASTM 4259, see Concrete).

N. Steel: Structural, Plate, etc.: Clean by one or more of the nine surface preparations described below. These methods were originally established by the Steel Structures Council in 1952 and are used throughout the world for describing methods for cleaning structural steel. Visual standards are available through the Steel Structures Painting Council, SSPC-VIS 1-89. A brief description of these standards, together with numbers by which they can be specified, follow:

1. Solvent Cleaning, SSPC-SP1: Solvent cleaning is a method for removing all visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants. Solvent cleaning does not remove rust or mill scale. Change rags and cleaning solution frequently so that deposits of oil and grease are not spread over additional areas in the cleaning process. Provide ventilation as recommended by the Solvent manufacturer.
2. Hand Tool Cleaning, SSPC-SP2: Hand Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that this process remove adherent mill scale, rust, and paint. Before hand tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP 1.
3. Power Tool Cleaning, SSPC-SP3: Power Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that this process remove adherent mill scale, rust, and paint. Before power tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP 1.
4. White Metal Blast Cleaning, SSPC-SP5 or NACE 1: A White Metal Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter. Before blast cleaning, remove visible deposits of oil or grease by any of the methods specified in SSPC-SP 1 or other method proposed by the installer and agreed upon by the A/E.
5. Commercial Blast Cleaning, SSPC-SP6 or NACE 3: A Commercial Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining. Staining shall be limited to no more than 33 percent of each square inch of surface area and may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Before blast cleaning, remove visible deposits of oil or grease by any of the methods specified in SSPC-SP 1 or other method proposed by the installer and agreed upon by the A/E.
6. Brush-Off Blast Cleaning, SSPC-SP7 or NACE 4: A Brush-Off Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose paint. Tightly adherent mill scale, rust, and paint may remain on the surface. Before blast cleaning, remove visible deposits of oil or grease by any of the methods specified in SSPC-SP 1 or other method proposed by the installer and agreed upon by the A/E.
7. Power Tool Cleaning to Bare Metal, SSPC-SP11: Metallic surfaces that are prepared according to this specification, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxide corrosion products, and other foreign matter. Slight residues of rust and paint may be left in the lower portions of pits if the original surface is pitted. Prior to power tool surface preparation, remove visible deposits of oil or grease by any of

the methods specified in SSPC-SP 1, Solvent Cleaning, or other method proposed by the installer and agreed upon by the A/E.

8. Near-White Blast Cleaning, SSPC-SP10 or NACE 2: A Near-White Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining. Staining shall be limited to no more than 5 percent of each square inch of surface area and may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Before blast cleaning, remove visible deposits of oil or grease by any of the methods specified in SSPC-SP 1 or other method proposed by the installer and agreed upon by the A/E.
9. High- and Ultra-High Pressure Water Jetting for Steel and Other Hard Materials, SSPC-SP12 or NACE 5: This standard provides requirements for the use of high- and ultra-high pressure water jetting to achieve various degrees of surface cleanliness. This standard is limited in scope to the use of water only without the addition of solid particles in the stream.

O. Water Blasting, NACE Standard RP-01-72: Remove oil, grease, dirt, loose rust, loose mill scale, and loose paint by water at pressures of 2,000 to 2,500 psi at a flow of 4 to 14 gallons per minute.

P. Stucco: Clean and remove loose stucco. If recommended procedures for applying stucco are followed and normal drying conditions prevail, the surface may be painted in 30 days. The pH of the surface should be between 6 and 9.

Q. Wood—Exterior: Must be clean and dry. Prime and paint as soon as possible. Scrape, sand, and spot-prime knots and pitch streaks before full priming coat is applied. Patch all nail holes and imperfections with a wood filler or putty and sand smooth. Apply caulk after priming.

R. Wood—Interior: Store finishing lumber and flooring in dry, warm rooms to prevent absorption of moisture, shrinkage, and roughening of the wood. Sand surfaces smooth with the grain, never across it. Correct surface blemishes and clean area of dust before coating.

S. Vinyl Siding: Clean vinyl siding thoroughly by scrubbing with a warm, soapy water solution. Rinse thoroughly.

3.04 MATERIALS PREPARATION

A. Mix and prepare painting materials in accordance with manufacturer’s directions.

B. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.

C. Stir materials before application to produce a mixture of uniform density, and stir as required during application.
1. Do not stir surface film into material.
2. Remove film and, if necessary, strain material before using.

3.05 APPLICATION

A. General:
   1. Apply paint in accordance with manufacturer's directions.
   2. Use applicators and techniques best suited for substrate and type of material being applied.
   3. Provide finish coats which are compatible with prime paints used.
   4. Apply additional coats when undercoats, stains, or other conditions show through final coat of paint, until paint film is of uniform finish, color, and appearance.
      a. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.
   5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Do not paint surfaces behind permanently-fixed equipment or furniture.
   6. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, not-specular black paint.
   7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
   8. Finish exterior doors on tops, bottoms and side edges same as exterior faces, unless otherwise indicated.
   9. Sand lightly between each succeeding enamel or varnish coat.
   10. Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated.

B. Scheduling Painting:
   1. Apply first-coat material to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
   2. Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

C. Minimum Coating Thickness:
   1. Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as recommended by coating manufacturer.

D. Prime Coats:
   1. Apply prime coat of material which is required to be painted or finished, and which has not been prime coated by others.
   2. Recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.

E. Pigmented (Opaque) Finishes:
1. Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage.
2. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.

F. Transparent (Clear) Finish:
1. Use multiple coats to produce glass-smooth surface film of even luster.
2. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.
3. Provide satin finish for final coats.

G. Completed Work:
1. Match approved samples for color, texture, and coverage.
2. Remove, refinish, or repaint work not in compliance with specified requirements.

3.06 CLEAN-UP AND PROTECTION

A. Clean-Up:
1. During progress of work, remove from site discarded paint materials, rubbish, cans, and rags at end of each work day.
2. Upon completion of painting work, clean window glass and other paint-spattered surfaces.
   a. Remove spattered paint by proper methods of washing and scraping.
   b. Use care not to scratch or otherwise damage finished surfaces.

B. Protection:
1. Protect work of other trades, whether to be painted or not, against damage by painting and finishing work.
2. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.
3. Provide “Wet Paint” signs as required to protect newly-painted finishes.
4. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.
5. At completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

3.07 EXTERIOR PAINT SCHEDULE

A. Ferrous Metal, Galvanized-Metal, and Aluminum Substrates:
1. Prime Coat:
   a. Primer, water-based, anti-corrosive for metal: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series, 5.0 to 10.0 mils wet, 2.0 to 4.0 mils dry or shop primer specified in Section where substrate is specified.
2. Intermediate Coat:
   a. Light industrial coating, exterior, water based, matching topcoat.

3. Topcoat:
    a. Light industrial coating, exterior, water based, semi-gloss: S-W Pro Industrial Acrylic Semi-Gloss Coating, B66-650 Series, at 2.5 to 4.0 mils dry, per coat.

B. Wood Substrates:
1. Prime Coat:
    a. Primer, latex for exterior wood.
2. Intermediate Coat:
    a. Latex, exterior, matching topcoat.
3. Topcoat: Latex, Exterior, Semi-Gloss:
    a. S-W Solo Acrylic Semi-Gloss, A76 Series, at 4.0 mils wet, 1.5 mils dry, per coat.

END OF SECTION

APPENDIX A:

NM Building Envelope Architects, LLC

Carlsbad Senior Center Existing Roof Condition Assessment, November 2021

CARLSBAD SENIOR CENTER EXISTING ROOF CONDITION ASSESSMENT

120 Kircher Street, Carlsbad, NM, 88220

NM BUILDING ENVELOPE ARCHITECTS, LLC
S.M.A.R.T. science – materials – art – research – technology

Roof Condition Assessment

Visual Surveys
Performed on
September 28, 2021

REPORT No. 01 –

Testing Agency – Lead Personnel	*Test/Lead Personnel:*	*Phone:*	*Fax:*	*Email:*
Company Name – Corporate Offices	**Name -** Title	(000) 000-0000		email@email.com
NM Building Envelope Architects	Joseph Hughes-Building Envelope Architect-Analyst	(505) 450-7828		jhughes@nmroofconsultants.com

Observed Environmental Conditions

Weather On Site:							
☒	Sunny	☐	Moderate Rain	Temp.:	**66 °F**		
☐	Partially Cloudy	☐	Light Rain	Wind:	**Calm – 3 mph gusts**		
☐	Cloudy	☐	Light Drizzle	RH:/DP **°F**/ST **°F** :	**75%**	**58 °F**	**NA**

Goals and Strategy:

The facility, located at 120 Kircher Street, Carlsbad, New Mexico, appears to have been constructed prior to 1996 based on historic satellite imagery. A single ply thermoset roof membrane was observed over most of the facility with a thermoplastic roof covering on three upper roof areas; based on surface mounted pressure bars at the exterior surface cavity brick wall structure, portions of the current roof is not likely the original roof, although due to the rural nature of the site location, satellite imagery is not sufficiently high resolution prior to 2011 to determine roof system type. Based on intrusive testing and visual and tactile survey, it appears that the original roof system was either replaced or heavily overhauled at some point with a single ply ethylene propylene diene monomer (EPDM) synthetic rubber roof membrane with aggregate (i.e., gravel) protection covering (i.e., ballast.) The roof assembly as observed is non-reinforced and has been subject to mechanical damage resulting from falling tree limbs, normal age and weather related deterioration, and foot traffic/HVAC work.

The primary structure appears to be masonry load bearing structure with steel frame column supports, open web bar joists, and a poured in place gypsum/bulb-tee deck.

NM Building Envelope Architects LLC (NMBEA) was engaged by Moltzen Corbin to perform a roof condition assessment that may determine the following:

- Identify a current baseline property condition evaluation of the roof covering system at portions of the subject facility including overall existing condition of the roof membrane and associated flashing system in general accordance with the appropriate sections of ASTM E2018 Baseline Condition Assessment Process
- Confirm potential trapped moisture by performing a moisture survey in accordance with portions of Test Application Standard (TAS) 12695 (published by the ICC, Florida Building Code Test Protocol) including destructive core sampling as necessary for confirmation, and secondary test procedures in accordance with ASTM D7954 / D7954M Standard Practice for Moisture Surveying of Roofing and Waterproofing Systems Using Non Destructive Electrical Impedance Scanners;
- Perform a walk-through survey of the existing roof areas to identify any defects or deficiencies particular to the installed systems that may affect long term performance of the roof covering assets
- Extrapolate findings using representative observations of associated appurtenances, claddings, coverings, flashings, and equipment that may have an effect on performance of roof and adjacent wall coverings for long term durable weathertight performance, as necessary to provide due diligence assessment to Owners of current conditions, required retrofit and maintenance, and long-term capital investment evaluation of the facility roof coverings.

The following report will summarize a holistic and prioritized list of observed existing roofing, waterproofing, and basic cladding conditions that may require emergency repairs and preventative maintenance for short term performance and summarize our recommendations for long term durable performance options for a roof covering system. Additionally, NMBEA is providing recommendations for repair of existing building systems (e.g., skylights, HVAC systems, rising building walls, fenestration at walls, etc.,) that may be adjacent to and/or penetrate the roof membrane system that could contribute to potential moisture intrusion, which may require repair and/or retrofit work.

The scope of work for this assessment as prepared by NMBEA is limited to the roof covering systems, flashings, terminations, and transitions to adjacent wall cladding, HVAC equipment, and roof water management components that were readily visible by visual and tactile survey. Limited intrusive testing was performed with this scope of work, and full understanding of the structure, code conformance for fire resistance, and overall building envelope performance was not analyzed for this scope of work.

This report provides recommendations for best practice regarding the roofing industry and also references standards and benchmarks for the structural deck assembly that supports the roof and roof mounted appurtenances. A licensed professional/structural engineer should review any recommendations and protocol for repair, retrofit, or modifications to the existing structural roof deck system and main wind force resisting system.

General Observations:

I. Existing Roof Systems

A. Primary roof areas are covered at areas 4 through 7 are a synthetic rubber EPDM single ply membrane that is mechanically secured and ballasted to the existing deck against wind uplift using large size aggregate stone ballast

B. Membrane manufacturer stamps indicate the system is a 45-mil EPDM manufactured by Carlisle Syntec Systems (Figure 1)

1. Section cores reveal the membrane was installed over a thin expanded polystyrene intervening layer on top of poured in place gypsum deck

a) The polystyrene insulation is not a significant contribution to the thermal isolation of the building envelope, inspection below the deck (Figure 2) revealed there is no batt insulation provided, and formboards are likely the only insulating component, the current assembly is very deficient regarding interior air/thermal/moisture separation from the exterior environment

2. The existing roof membrane has been compromised at numerous locations and as observed allows precipitation to enter the gypsum deck assembly

3. The existing roof membrane is non-reinforced, but has an in-service performance duration expected to be more than 25-years

C. Roof areas 1 through 3 are a thermoplastic membrane, potentially Hypalon plastic that appear to have been installed between 2009 and 2011.

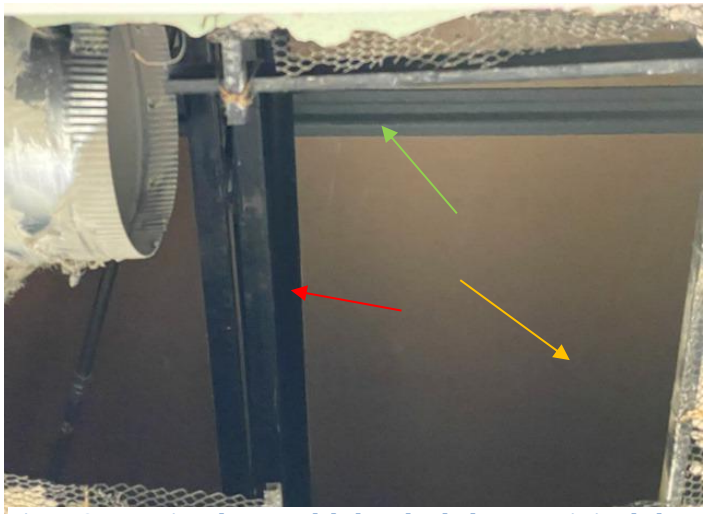


Figure 2 – Interior photograph below the deck at an existing hole through the metal lath and plaster ceiling. Open web steel bar joists (red arrow) support metal bulb tees (green arrow) that supports a fiber formboard system (gold arrow) that the gypsum was originally cast onto. Note that moisture damage is not evident at the bottom surface of the formboards in this photograph.

Figure 1 - Existing roof system components include an expanded polystyrene barrier board with ballasted non-reinforced EPDM 45-mil thick membrane. Moisture measured to be high at this location that was an area of existing mechanical damage that had breached the membrane prior to NMBEA's inspection. This location was patched and repaired after testing to prevent further moisture damage.

1. These roof coverings are aged and deteriorated from what appears to be normal age/weather exposure related conditions, the membrane is likely a thin (i.e., 45-mil) plastic and the systems should be replaced soon, although they appear to be performing reasonably well and are in fair condition
2. Test core samples were not taken, however these locations appear to have been an EPDM roof covering prior to what is likely a recover overlay of the thermoplastic membrane that is at least 10-years in service

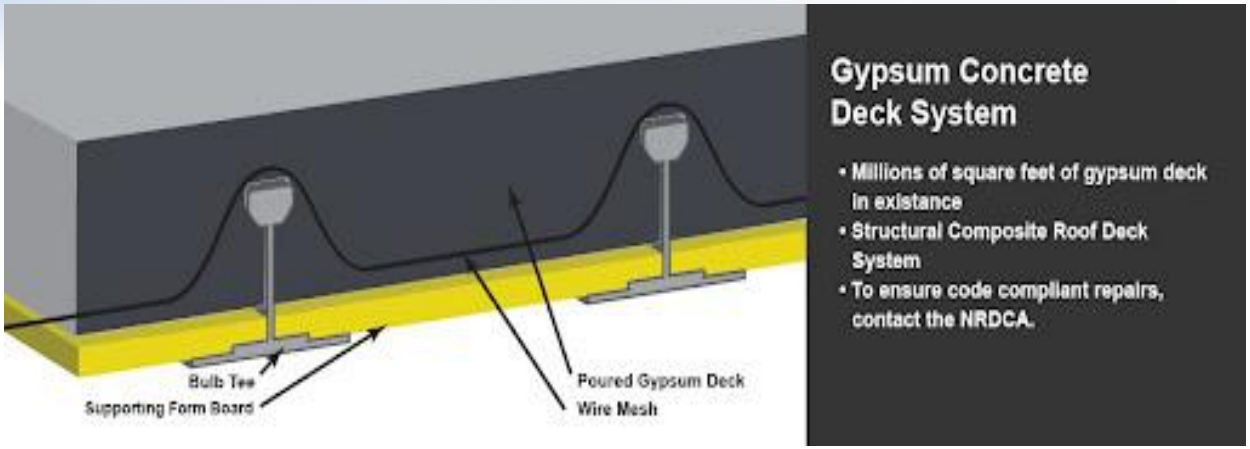


Figure 3 - Typical gypsum deck assembly as published by the National Roof Deck Contractors Association

D. The current in-service performance of the roof coverings at all locations are likely past their anticipated duration, the systems have numerous patches observed to be self adhered stripping membrane and due to the lack of reinforcement, natural age and weather related shrinkage is causing the membrane to split
   a) This roof covering systems are no longer serviceable and needs to be replaced soon

II. Existing deck substrate to support roofing
   A. The roof deck structure is a poured in place gypsum plaster deck (Figure 3)
   B. Gypsum roof decks are classified as nailable non-combustible decks
      1. Gypsum decks were first installed in North America in the 1940's are not common any longer although the system is known to provide decades of good performance when kept dry

Figure 4 - Base flashing membrane does not appear to be the original membrane and has been improperly sealed to the exterior face of brick cladding. This condition may have contributed to moisture underlying the membrane even though the membrane does not appear to have been damaged

2. Numerous breaches in the existing roof membrane as well as installation defects (Figure 4) are a likely source of moisture entering into the gypsum assembly which readily absorbs moisture and holds the moisture within the semi-porous structure of the plaster
    a) Long term damage and loss of strength can occur with prolonged moisture, including corrosion of the critical reinforcing mesh within the plaster pour
3. Gypsum decks typically are reinforced with wire mesh or woven wire fabric that helps provide load transfer to steel bulb tees that are cast in to the plaster, commonly spaced at 24-inches to 32-inches on center as part of the structural support for formboards that appear to be fiberglass but could also be asbestos or cellulose fiber

Figure 5 - Portion of the roof deck that has been damaged by falling tree limbs

C. Due to existing lath and plaster ceilings throughout the facility, inspection at the underside of the deck, particularly at the formboards that originally supported the plaster deck casting, could not be performed
1. Inspection at one location (Figure 2) where an opening existed at the gypsum plaster ceiling indicate the underside of the deck is in good condition
2. Moisture intrusion over time will cause the plaster deck to lose integrity, and may also cause corrosion of the reinforcing mesh within the assembly. The upper roof membrane offers considerable support for load distribution at the top side of the deck, but caution will be necessary when the membrane is removed because hidden weakness in the plaster could result with partial localized collapse
    a) Moisture measured to be high using a handheld electric probe at a location that was physically damaged prior to this inspection
    b) Moisture content was measured to be 31.5% (Figure 1)
    c) Equilibrium moisture is common for gypsum at 5% or less
    d) Polystyrene intervening board is an open cell foam that absorbs considerable amount of moisture and allows the moisture to move by capillary action through the assembly, this material also holds moisture as a reservoir for prolonged periods of time
3. Although gypsum decks are known to perform very well for more than 50-years, it is anticipated that portions of the gypsum deck may need to be replaced prior to reroofing due to prolonged moisture damage
    a) At least one section of the deck has been compromised by falling tree debris and will require retrofit (Figure 5)

Figure 6 - Moisture movement into the deck assembly by exterior fascia and soffit paint repair and retrofit is necessary to attempt to eliminate moisture absorption by the gypsum and fiber formboards.

b) If large areas are found to have deconsolidated and can no longer support new roof loads (uplift and gravity live/dead loads) due to moisture damage, it may be necessary to replace these sections with cement fiber planks per the National Roof Deck Contractors Association (NRDCA) recommendations for retrofit of gypsum deck assemblies

(1) Original formboards are not manufactured any longer whereas fiber cement panels continue to be manufacturer in North America, and these deck panels are often the same module spacing as the gypsum bulb tees

D. Edge soffit perimeters are moisture damaged and will require retrofit work to ensure they remain water tight

1. New retrofit and reroofing work should included perimeter drainage gutters integrated with edge metal flashing to prevent moisture movement behind the edge of roof into the vulnerable plaster deck (Figure 6)

E. Retrofit and reappropriation of the facility occupancy may require upgrades to the building envelope including air/moisture barriers, particularly at soffit overhangs that currently may allow air infiltration/exfiltration that can result to moisture condensation of interior moisture vapor laden air,

1. moisture vapor can condense to liquid moisture within the envelope section that reaches dew point at varying times of year/season that can be absorbed by the gypsum and fiberboard formwork, this can result with continued damage to the structure over time by accumulations of liquid condensation moisture that can eventually saturate localized areas of the plaster
   a) moisture damaged gypsum cannot support fastener withdrawal resistance even after dry down (Figure 7) and moisture damaged areas should be removed as they are not likely a satisfactory substrate for any new roof system

Figure 7 - Photograph of a gypsum deck NOT from this inspection that demonstrates lack of withdrawal resistance necessary to support a new roof due to prolonged moisture damage

Recommendations:

III. Existing roof systems require immediate replacement and deck restoration and preparation will be a critical component of any reroofing work

A. The gypsum plaster deck should be tested for high moisture content immediately following removal of the existing roof covering, gypsum that has been moisture affected may not be capable of supporting new roof loads

1. Locations where moisture content is considered to be elevated may be tested for withdrawal resistance and also core samples taken to determine if the reinforcing wire has been corroded
2. If the moisture tests are elevated or if the wire is compromised, the extent of moisture affected areas should be removed, including reinforcing wire, plaster, and the original formboard, recommendations by the NRDCA and a structural engineer should be followed
3. Gypsum deck repair for small areas (i.e., less than 2-spans) can be performed using wood chip filler based gypsum such as Securock Brand Gypsum Concrete Patch (formerly Pyrofill) or pourable cementitious grout (Figure 9)

a) All repairs must include wire mesh reinforcing that should be formed to overlap existing metal wire mesh minimum 6-inches to transfer loads to adjacent deck areas, common recommended reinforcing included Keydeck 2160-2-1619 galvanized wire mesh

4. Larger areas of deck repair or replacement should utilize new cement fiber board deck planks (Tectum type or similar) that are then grouted into the bulb tees and sealed at joints. Infill foam plastic boards can be placed over the fiber board or infill using poured gypsum or LWIC may be an option depending on brand and manufacturer (Figure 8)

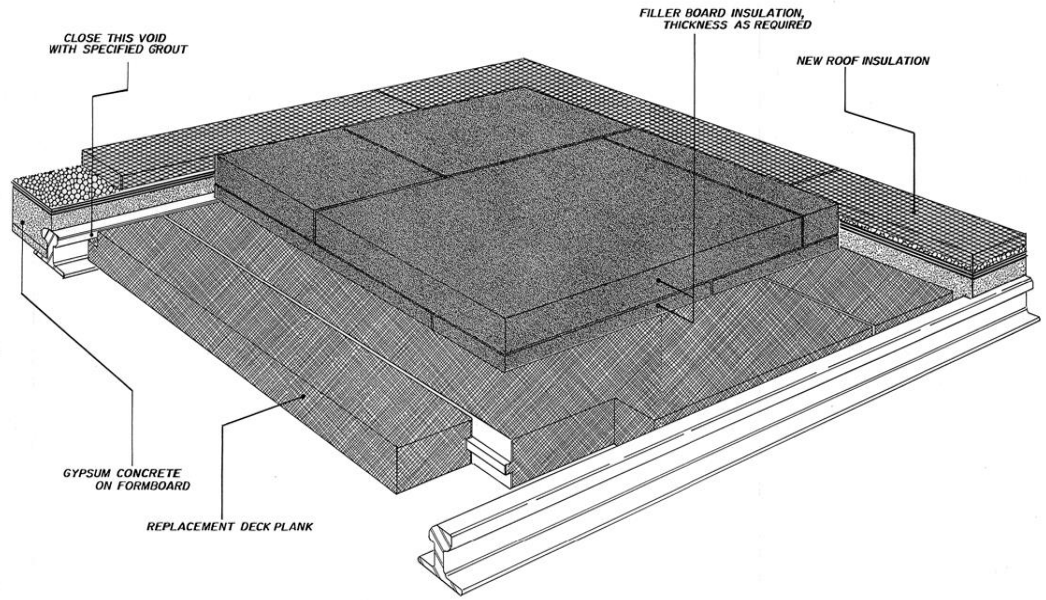


Figure 8 - Large and multi-span deck repairs should follow the NRDCA recommendations for new infill deck retrofit such as that depicted this image for infill using cement fiber deck planks and rigid foam plastic insulation

Figure 9 - Sample photograph NOT from this inspection that depicts typical small section patch and repair of an aged gypsum deck

B. Repair to the deck damaged by falling tree debris can be performed in a similar manner as previously indicated

C. If the total gypsum deck area is found to be compromised or not capable of supporting new roof loads and systems, the option to remove all gypsum material should be considered and leave the bulb tees in place. Infill between bulb tees can be provided with new Tectum brand or similar cement fiber board deck planks (Figure 10) which in general are designed to perform well as a wind uplift resistant deck for most roof covering systems

   1. New Tectum fiber decks can be overlaid with insulating concrete, or can be specified with integral bonded foam plastic insulation and this assembly is an approved deck substrate for most modern roof covering systems.

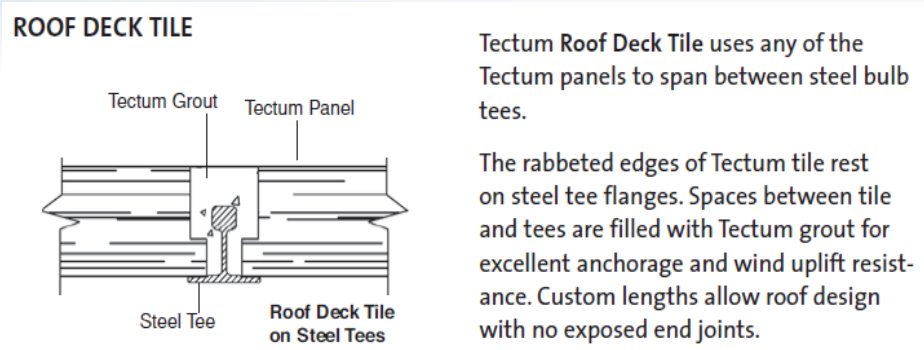


Figure 10 - Alternate deck replacement may include cement fiber deck board infill such as Tectum brand deck tile

D. Once the deck is retrofit and all areas considered to be dry (this may take a phased approach to avoid prolonged weather exposure to the deck following roof demolition) the choice of roof covering based on Owners maintenance requirements and durability options can be installed; however only fully adhered membrane coverings are recommended for gypsum substrates (Figure 11)

   1. Whichever roof covering system is selected, the system should include new drainage slope in a hipped configuration to allow perimeter drainage with minimum ¼-inch per foot slope. The greater the slope, the less likely moisture can affect the assembly and ponding water should be avoided at all cost due to the limited load capacity of the assembly
   2. It may be advantageous to reinforce the deck load capacity by installation of a roof deck sheathing system (plywood or reinforced gypsum sheathing or fiber cement board) which can improve load distribution to the metal bulb tees

E. Reroofing work must consider minimal loading and staging of the roof components at the roof deck

   1. Existing and new gypsum decks are vulnerable to point loading
   2. Staging of materials should be minimized at the roof deck, the majority of materials and equipment should be kept at the ground
   3. Heavy rollers, generators, kettles and membrane rolls should be kept at ground level and lifted to the roof deck with caution

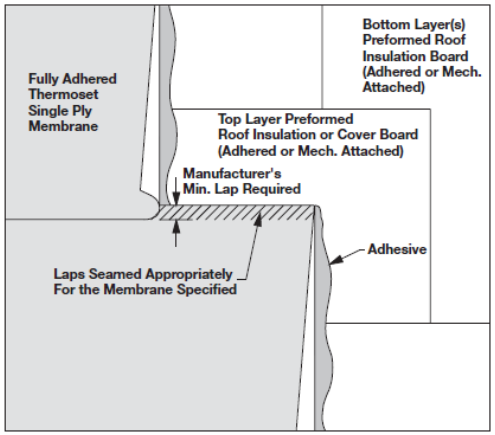


Figure 11 - A typical NRCA recommended fully adhered roof membrane covering which is typically acceptable for gypsum deck substrates. Although the base insulation or sheet layer is mechanically fastened to the gypsum, all subsequent layers may be secured with adhesive. This system distributes uplift loads uniformly across the deck

IV. Roof retrofit is not recommended, and neither is an overlay roof recommended due to the need to inspect the gypsum deck structure remediate moisture damaged areas prior to securement of a new roof

A. Mechanically fastened membrane securement is not recommended due to increased wind uplift loading on the membrane fasteners (Figure 12)

B. Fully adheres systems perform better at distributing wind uplift loads uniformly across the deck surface. Many single ply and asphalt BUR roof system manufacturers allow installation of a fully adhered membrane over an existing aged gypsum deck provided certain criteria are met such as the following:

1. In general, the only way to secure a new roof system to aged gypsum is by mechanical fastening a base layer to the deck, fully adhered direct applied systems to the deck are typically not approved (i.e., bonding cement or low rise foam or hot mopped asphalt in direct contact with the gypsum.)
2. Two industry approved methods to reroof a sound and well secured gypsum deck include the following:
   a) The first option is to nail a reinforced base sheet membrane such as fiberglass reinforced oxidized asphalt to the gypsum using impact nails spaced close together at the lap seams and in at least two rows down the field of each roll width (Figure 13)
      (1) a hot mopped asphalt roof membrane or torch heat fused membrane can be directly installed to the base sheet
      (2) alternatively new polyiso insulation board can be adhered to the base sheet using low rise foam adhesive with narrow spaced continuous serpentine ribbons, followed by a fully adhered single ply membrane such as EPDM, or a thermoplastic membrane (i.e., PVC or TPO)

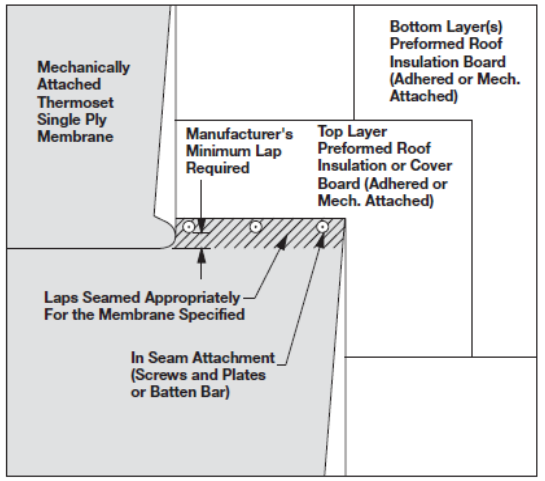


Figure 12 - Typical NRCA detail for a mechanically fastened roof membrane system. This type of system is NOT recommended for gypsum decks.

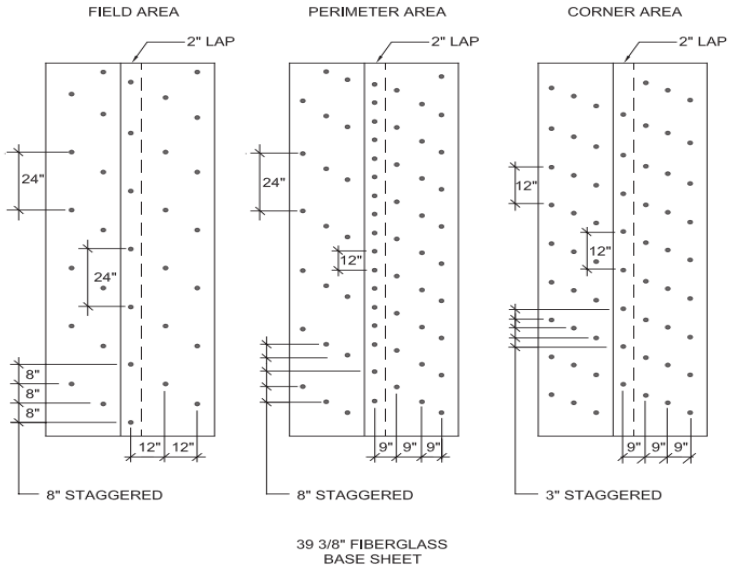


Figure 13 – At right is a typical base sheet membrane (i.e., oxidized asphalt) fastener securement provides a more uniform distribution of wind uplift loading to the gypsum deck. Subsequent layers of insulation or sheathing or coverboard can be adhered onto this base sheet

b) A second option would be to use polymer (i.e. glass filled plastic) auger style fasteners such as OMG brand Polymer Gyptec fasteners and plates to secure new insulation board or coverboards to the plaster deck in lieu of impact nails is the preferred method to secure sheathing, coverboard, or insulation boards to an aged gypsum deck (Figure 14)
   (1) low rise foam adhered insulation and single ply membrane can follow auger fastener securement of the base layer
   (2) continuous sheathing secured with auger fasteners is recommended to create an intervening layer between aged deck and new roof system, and this sheathing can also serve to improve load distribution across deck spans
   (3) thermal isolation board such as polyisocyanurate insulation should be used to improve thermal performance of the building envelope but also to promote improved slope to drain

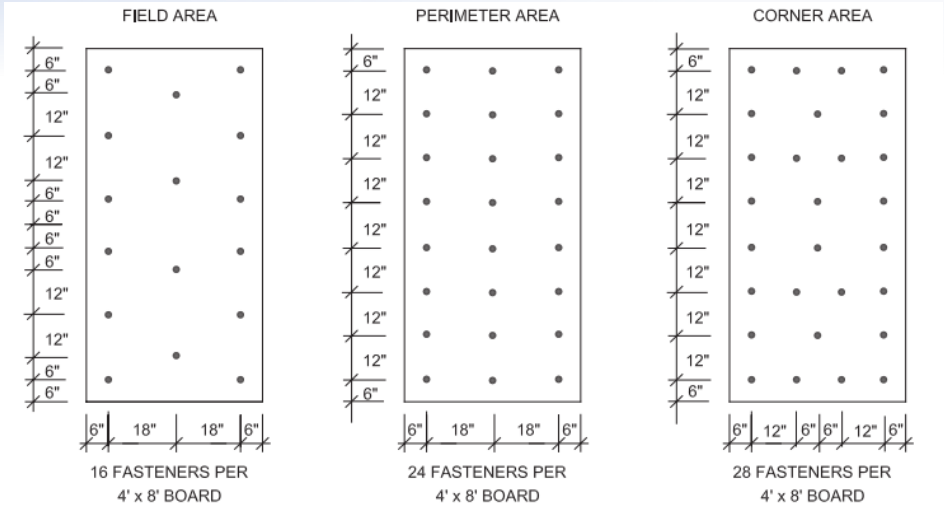


Figure 14 - Typical securement patterns (image above) for auger fastener attachment of sheathing, insulation board, and/or cover board to the gypsum deck. Ideally the base layer of insulation would be secured using fasteners, and the next layer of tapered insulation and a cover board would be adhered in low rise foam ribbons, followed by a fully adhered roof membrane. Image at right depicts common glass filled nylon auger fasteners used for high withdrawal resistance of low density substrates.

3. Mechanically fastened roof membrane systems (i.e., membrane fastened to the deck through insulation sections using long screws at the side lap seams) are not recommended due to the significant withdrawal strength required for each fastener to secure the membrane against wind uplift, unless an aggregate ballast is used to assist the fastener securement
   a) minimum withdrawal for an adhered system using mechanically secured base foam board insulation is typically 300-lb per fastener and frequent withdrawal tests are highly recommended during installation

b) minimum withdrawal for an adhered system using mechanically secured base sheet is 40-lb per fastener and frequent testing during installation is recommended

4. gypsum deck thickness must be minimum 2-inches to receive impact nails or to resist auger withdrawal

C. The lightest and most durable single ply membrane available based on long term in-field performance is EPDM, similar to the current roof covering

1. Fully adhered, non-ballasted EPDM with a color sacrificial elastomeric coating is recommended to reduce dead load burden to the aged structure and provide durability, although due to the number of roof mounted HVAC cabinets that require regular foot traffic access, the EPDM can be vulnerable to punctures if not installed over a rigid coverboard with traffic pads placed around each unit
2. EPDM membranes can be a cost effective roof covering that is known to provide more than 30-years in-service performance with minimal maintenance

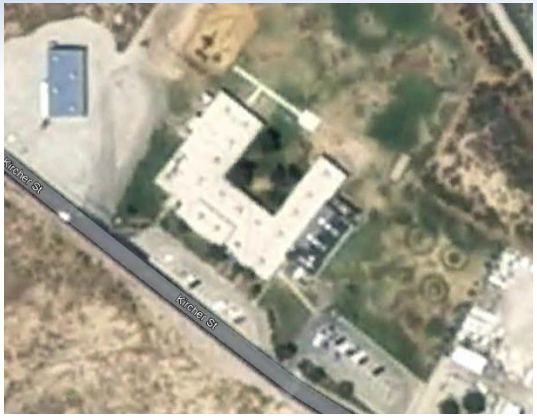
D. A good alternative option to EPDM is modern thermopalstic (i.e. PVC or TPO) single ply membrane roof systems that can be installed over a new insulation package or new gypsum glass reinforced or high density foam coverboard

1. Both thermoplastic materials in the roof market today are good quality and can potentially perform well for many years depending upon thickness of the membrane, securement (i.e., fully adhered versus mechanically fastened) and depending upon quality workmanship during installation
2. The primary difference between PVC and TPO is as follows:
   a) TPO absorbs water which causing swelling of the membrane over time, which can cause premature degradation, slope is critical for proper drainage and TPO cannot be concealed under any overburden due to annual inspection and maintenance requirements
      (1) TPO manufacturer and chemical matrix has historically been less environmentally hazardous
   b) PVC does not readily absorb water and can be used in near flat waterproofing environments, and can also be concealed under overburden such as gravel similar to EPDM
      (1) Manufacturing of PVC is more environmentally hazardous than other membranes

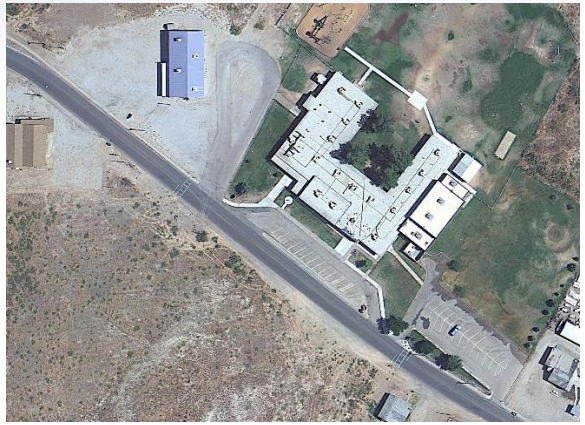
E. NMBEA's recommended time tested and proven most durable and redundant roof system available in todays roof market is a metal foil faced or ceramic granule surfaced polymer modified 3-ply BUR assembly that if coated with a sacrificial elastomeric coating (ceramic surfacing option) immediately following installation can perform well for decades, foil facers such as aluminum resist the high UC solar radiation common for this region that are the most likely cause of asphalt membrane degradation

1. 3-ply SBS polymer modified asphalt BUR assemblies have been observed in good serviceable condition after 40-years in service

Satellite imagery from 1996 depicts a roof covering system having reflective light color that could be the aggregate ballast of the current roof, but based on the low resolution the roof type is inconclusive.



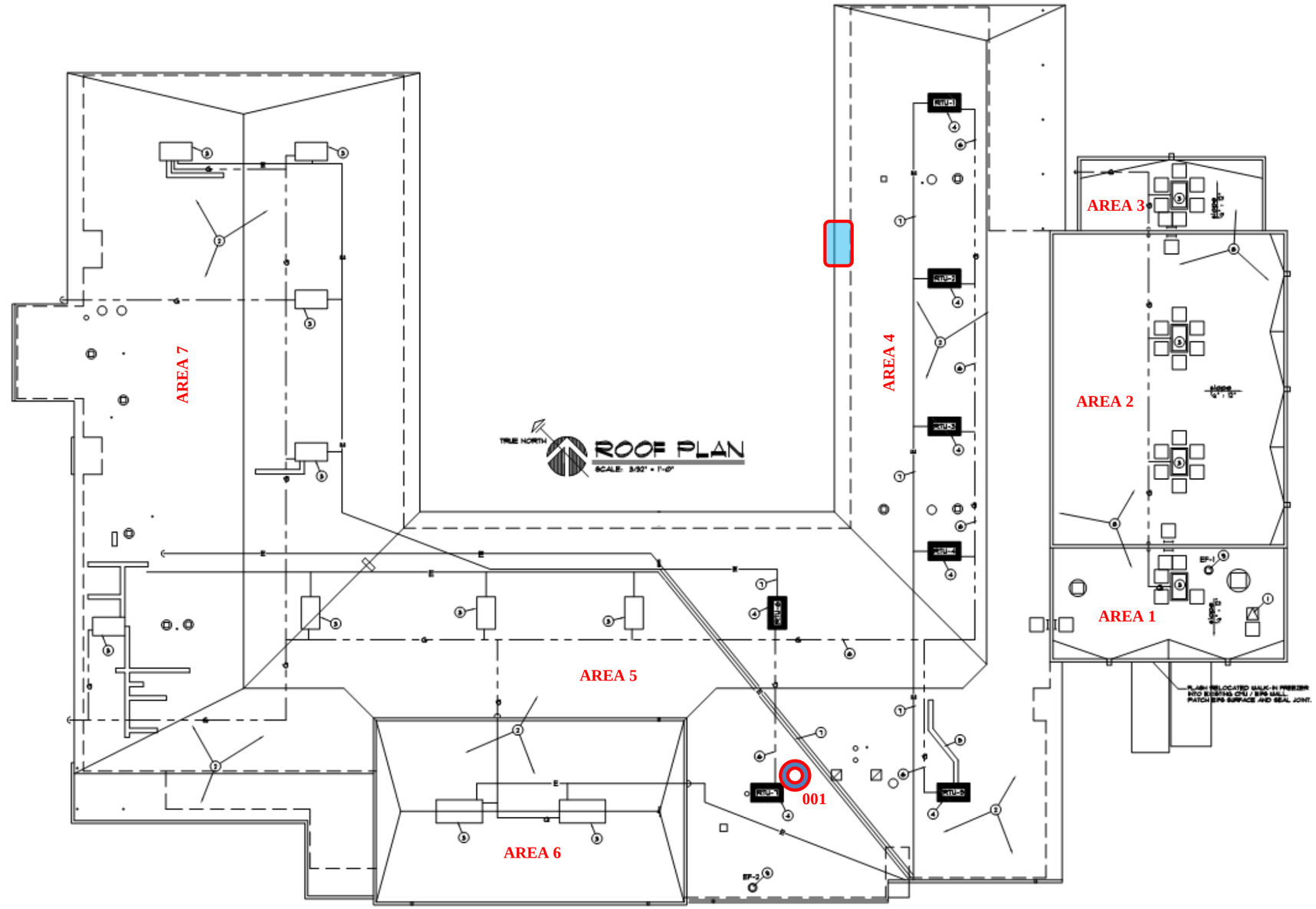
Satellite imagery from 2009 depicts the same reflective roof covering, similar to the gravel ballast, except the membrane at areas 1 through 3 are black EPDM. This may indicate that reroofing work was in progress at this time as the gravel ballast has been removed.



2011 satellite imagery depicts a white reflective roof at areas 1 through 3 and areas 4 through 7 are clearly gravel ballast

Area Plan Roof Areas with Survey Wet Roof Materials Location and Core Samples Approximated:

Aerial image reflects December 2019 vintage conditions



Notes:

Outlined blue shaded area depicts approximate location of damaged deck from falling tree limbs

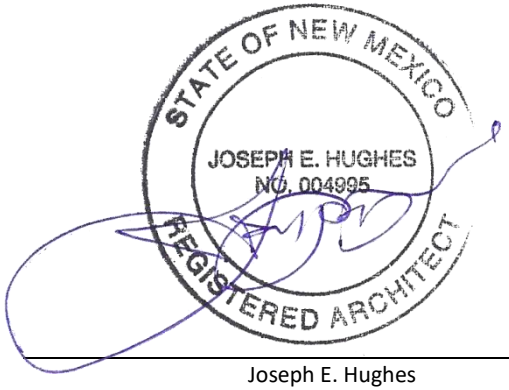
001 NMBEA core sample extraction to determine underlying conditions

Location ID:

Recommended Repair/Retrofit Maintenance Matrix

* Area Size, Length, and Extent are Approximate Estimates Based on Site Survey at 36,000 s.f. roof area. Bidding Contractors Must Field Verify Actual Existing Area and Length. Costs are Estimated Order of Magnitude Costs and do not consider actual bid pricing that may vary with design considerations and contractors, NMGRT and design fees not included.

Roof Protocol	Scope of Work	Budgetary Opinion of Probable Cost Per Unit	Budgetary Opinion of Probable Costs	Notes on Scope-of-Work
Good Replacement System	Remove existing system completely down to deck, remove moisture damaged deck, replace with new EPDM adhered system over mechanically fastened base insulation and tapered insulation with ½-inch HD coverboard	$16.00	$576,000.00*	Deck repairs estimate not more than 20% deck area, estimated average thermal isolation value is R38 CI above deck
Better Replacement System	Remove existing system completely down to deck, remove moisture damaged deck, replace with new fully adhered PVC or TPO single ply thermoplastic roof membrane over mechanically fastened base insulation and tapered insulation with ½-inch HD coverboard	$18.00	$648,000.00*	Deck repairs estimate not more than 20% deck area, estimated average thermal isolation value is R38 CI above deck TPO membrane assumed, PVC material cost may be slightly higher per unit
Best Replacement System	Remove existing system completely down to deck, remove moisture damaged deck, replace with new fully adhered 3-ply polymer modified foil faced torch heat fused asphalt membrane over mechanically fastened base sheet and tapered insulation with ½-inch gypsum coverboard	$36.00	$1,296,000.00*	Deck repairs estimate not more than 20% deck area, estimated average thermal isolation value is R38 CI above deck Mech. Fastened 2-inch base, taper adhered, gypsum coverboard adhered, SBS polymer modified asphalt with aluminum foil facer throughout roof area, walk pads required to protect foil facer
	Total Project Costs - All Roof Areas Replacement with 12% Contingency and Soft Costs	**Soft Costs + NMGRT**	**$691,200.00 EPDM $777,600.00 TPO/PVC $1,555,200.00.00 BUR Including NMGRT**	



Written by: _____ Building Envelope Architect/Building Analyst, Test Operator
Joseph E. Hughes **NM BUILDING ENVELOPE ARCHITECTS LLC**

End of Report

*Due to the time sensitive nature of this document, it has been reviewed for technical content; however some human errors may still remain such as spelling, grammar, etc., and NMRC reserves the right to edit non-technical aspects of this report at a later date, if necessary.


TRAMEX
CMEXPERT II


TRAMEX
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Carrier


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