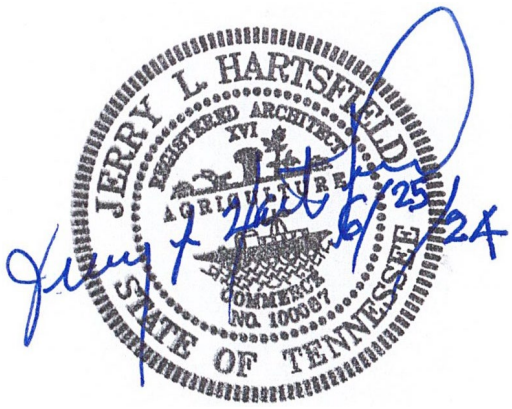
Specification Documents

May 30, 2024

REVISED VIA ADDENDUM NO. 2: JUNE 25, 2024

Wayne County Health Department
Site / Interior Renovation
for
Wayne County, TN

TLM Project No. J-7076



117 East Lafayette St.
Jackson, Tennessee 38301
PH: 731-988-9840
www.tlmae.com

Wayne County Health Department

Site / Interior Renovation

725 South Main Street
Waynesboro, TN 38485
TLM Project No. J-7076

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END OF SECTION 00 01 15

SECTION 00 11 13 – ADVERTISEMENT FOR BIDS

Bidders may submit bids for the project described in this document.
Submit bids according to the Instructions to Bidders.
Project Identification: **Wayne County Health Department – Site / Interior Renovation | J-7076**
Project Location: **725 South Main Street, Waynesboro, TN 38485**
Owner: **Wayne County and Its Officials; 100 Court Circle, Waynesboro, TN 38485**
Architect: **TLM Associates, Inc.; 117 E. Lafayette St., Jackson, TN 38301; 731-988-9840**

Bids will be received for the following Work:

a. General Building Construction
b. Site Work
c. Electrical Construction.
d. Interior Construction and Finish Work

Proposed forms of contract documents, including plans and specifications, are on file at the following:

- TLM Associates, Inc., 117 E. Lafayette Street, Jackson, TN 38301, www.tlmae.com
- Builder's Exchange, 2728 Eugenia Avenue Suite 108, Nashville, TN 37211, www.bxtn.org
- Dodge Data & Analytics, dodge.docs@construction.com
- West Tennessee Plans Room, www.wtplanroom.com

Copies of the documents must be obtained by providing a deposit to TLM Associates, Inc. TLM Associates, Inc. can be reached by phone at (731)988-9840 or through receptionist@tlmae.com to purchase bid documents.

Each General Contractor will receive one (1) set of plans and specifications documents by depositing **$200.00** with TLM Associates, Inc. Additional complete sets may be purchased at their own expense. Such deposit will be *100% refunded* to the persons who return the plans, specifications, and other documents in good condition *within 10 days after the bid opening.* **The successful bidders deposit will be retained**.

Each Sub-Contractor, supplier, etc. other than General Contractors will pay ***$150.00*** *which is refundable* to TLM Associates, Inc. to receive one (1) set of plans and specifications. Additional complete sets may be purchased at their own expense. **A digital copy of the plans and specifications are available upon request after the purchase of a bid set.**

Owner will receive sealed bids until the bid time and date at the location given below. Owner will consider bids prepared in compliance with the Instructions to Bidders, and delivered as follows:
Bid Date: **July 16, 2024**
Bid Time: **2:00 p.m.**, local time.
Location: **Wayne County Mayor's Office; 100 Court Circle, Waynesboro, TN 38485**

Bids will thereafter be publicly opened and read aloud.

Wayne County reserves the right to reject any and all bids or to waive any informality in the bidding whenever such rejection or waiver is in the interest of the Owner.

A certified check or bank draft, payable to **Wayne County,** U.S. Government bonds, or a satisfactory bid bond executed by the bidder and acceptable sureties in an amount equal to five (5) percent of the bid shall be submitted with each bid. No bids may be withdrawn for a period of **90** days after opening of bids. Owner reserves the right to reject any and all bids and to waive informalities and irregularities.

All bidders are required to comply with General Licensing Act of 1976, also known as Tennessee House Bill No. 2180 and T.C.A. 62-6-119 of 1994.

Effective January 1, 2011, a masonry subcontractor must be licensed with an "LMC" classification in order to bid or to be listed on the outside of bid envelope as a Licensed Masonry Contractor (LMC) when the masonry portion is $100,000 or more (*including materials and labor*). The BC-9 or BC will not be acceptable.

Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work. A Performance Bond, separate Labor and Material Payment Bond, and Insurance in a form acceptable to Owner will be required of the successful Bidder. The successful bidder will be required to furnish and pay for satisfactory performance and payment bond, bonds, or insurance surety.

A Pre-bid meeting for all bidders will be held at **Wayne County Health Department** on **June 19, 2024** at **10:00 a.m.**, local time. Prospective bidders are **highly recommended** to attend.

SECTION 00 21 13 – INSTRUCTIONS TO BIDDERS

PART 1 - DOCUMENTS

1.1 BID FORMS AND BID PREPARATION:

A. Bid Forms and Bid Preparation: All bids will be submitted on forms contained herein and shall be subject to all requirements of the specifications and drawings. Bid forms can be removed from the project manual.

B. All blank spaces for bid prices must be filled in, in ink or typewritten, in both words and figures.

C. By the General Contractors Licensing Act of 1976 and T.C.A. 62-6-119 of 1994, each bidder must submit the following information for his bid to be considered valid. Each bid must be submitted in a sealed envelope bearing on the outside the following information:

1. Name of Bidder.
2. Address of Bidder, including Zip Code and Phone Number, to show whether bidder is a resident of the State of Tennessee.
3. Tennessee License Number of Bidder.
4. Expiration Date of Tennessee License Number.
5. That Classification of Bidder's License which applies to this Bid / Bidder must write out the work classifications of his license which apply to the work of this project.
6. Name of the Project for which the Bid is submitted.
7. List Subcontractors, License Number, Expiration Date thereof, and License Classification for the following subcontractors on the outside of the envelope containing the Bid:

    a. Electrical
    b. Plumbing

8. Item No. 7 is required by Tennessee Law, T.C.A. 62-6-119.

    a. "The architect, Engineer, Construction Manager, Construction Consultant or any other persons or entity involved in the preparation of the invitation to bid or comparable bid, documents shall direct that the license number, expiration date thereof, and license classification of the contractor applying to the bid for electrical, plumbing or heating ventilation or air conditioning, appear on the outside of the envelope containing the bid; otherwise the Bid shall not be opened or considered."
    b. "Any Bid envelope which contains the listing of more than one contractor in each classification shall be considered in violation. Failure to observe this section constitutes a Class A Misdemeanor."

D. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as “SEALED BID ENCLOSED”.

E. Conditional bids will not be accepted.

F. Examination of Site: Bidders shall visit the site of the project, and the Contractor shall be assumed to have visited the premises and to have allowed for all conditions that might affect his work. No consideration will be given any claim based on lack of knowledge of existing conditions.

G. Obligation of Bidder: Bidders shall notify the Architect immediately should, during his examination of the site or any of the associated documents, he finds a discrepancy. At the time of the opening of bids, each bidder will be presumed to have inspected the site and to have read and be thoroughly familiar with plans and contract documents (including all addenda). Failure or omission of any bidder to examine any form, instrument or document shall in no way relieve any bidder from any obligation in respect to bid.

H. Conditions of Work: Each bidder must inform himself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his contract. Employ such means and methods that will not cause any interruptions or interference with work by others.

1.2 ADDENDA:

A. Interpretations and Addenda: The Architect will make every effort necessary to cooperate with bidders in making the proper interpretations of the Contract Documents and in advising all bidders of such interpretation.

B. Questions from bidders must be directed to the Engineer or Owner as soon as possible to allow sufficient time for preparation and distribution of addenda.

C. It shall be the bidder's responsibility to make inquiry as to addenda issued. All such addenda shall become a part of the contract and all bidders shall be bound by such addenda, whether they are received by the bidders, or not.

D. Responsibility of General Contractor to Subcontractor Regarding Addenda: Each prime bidder (i.e., General Contractor) will receive every addendum. Copies of addenda will also be mailed to construction plans rooms, but not to the subcontractors. It shall be the responsibility of each prime bidder to forward copies of addenda or otherwise inform their subcontractors.

1.3 BID SECURITY:

A. Bid Guaranty (Bid Bond): The bid must be accompanied by a bid guaranty that shall not be less than 5 percent (5%) of the amount of the bid, and at the option of the bidder may be a certified check, bank draft, U. S. Government Bonds at par value, or a bid bond secured by a surety company. Certified check or bank draft must be made payable to the order of the Owner. The bid guaranty shall insure the execution of the Contract and the furnishing of performance and payment bond or bonds by the successful bidder all as required by the specifications. If the successful bidder withdraws his bid within Ninety (90) days of the bid opening, then his bid bond will automatically be forfeited to the Owner.

PART 2 - CONSIDERATION OF BIDS

2.1 BIDDER(S) CONSTRUCTION EXPERIENCE:

A. Before a bid is considered for award, the bidder may be requested by the Owner to submit a statement regarding his previous experience in performing comparable work, his business and technical organization, and financial resources.

2.2 QUALIFICATIONS OF BIDDER(S):

A. Bids are acceptable only from contractors, properly and currently licensed.

B. The bidder is advised that any person, firm, or other party to whom it is proposed to award a subcontract under this contract must be acceptable to the Owner and/or Architect.

2.3 RECEIVING BIDS:

A. Bids received prior to the time of opening will be securely kept, unopened. The officer whose duty it is to open them will decide when the specified time has arrived, and no bid received thereafter will be considered; except that when a bid arrived by mail after the time fixed for opening, but before award is made, and it is shown to the satisfaction of the officer authorized to make the award that the non arrival on time was due solely to delay in the mails for which the bidder was not responsible, such bid will be received and considered. No responsibility will be attached to an officer for the premature opening of a bid not properly addressed and identified. Unless specifically authorized, telegraphic bids will not be considered.

B. Bids will be publicly opened at the time and place fixed for the opening of bids indicated on the Invitation for Bid. Every bid received within the time fixed for receiving bids and that meets all requirements listed in the Instructions to Bidders will be opened and the results made known.

C. Bids may be withdrawn on written or telegraphic request dispatched by the bidder in time for delivery in the normal course of business prior to the time fixed for opening; provided, that written confirmation of any telegraphic withdrawal over the signature of the bidder is placed in the mail and postmarked prior to the time set for bid opening. Negligence on the part of the bidder in preparing his bid confers no right of withdrawal or modification of his bid after such bid has been opened.

2.4 AWARD OF CONTRACT:

A. The contract will be awarded to the responsible bidder submitting the lowest proposal complying with the conditions of the Invitation to Bid, provided his bid is reasonable and it is to the best interest of the Owner, at the earliest practicable date. The Owner, however, reserves the right to reject any and all bids and to waive any informality in bids received whenever such rejection or waiver is in the interest of the Owner.

B. The Owner also reserves the right to reject the bid of any bidder who has previously failed to perform properly, or to complete on time, contracts of a similar nature, who is not in a position to perform the contract, or who has habitually and without just cause neglected the payment of bills or otherwise disregarded his obligations to subcontractors, material men, or employees.

C. The ability of a bidder to obtain a performance bond shall not be regarded as the sole test of such bidder's competency or responsibility.

PART 3 - PERFORMANCE AND PAYMENT BOND:

3.1 Subsequent to the award and within ten days after the prescribed forms are presented for signature the successful bidder shall execute and deliver to the Owner a contract in the form furnished in such number of counterparts as the Owner may require.

3.2 Having satisfied all conditions of award as set forth elsewhere in these documents, the successful bidder shall, within the period specified above, furnish bond(s) in a penal sum of at least the full amount of the contract as awarded, in the form included in the specifications, which secures the faithful performance of the contract, and for the payment of all persons, firms, or corporations to whom the contractor may become legally indebted for labor, materials, tools equipment or services of any nature employed or used by him in performing the work. Such bond(s) shall bear the same date as or a date subsequent to, the date of the contract.

1. The current power of attorney for the person who signs for any surety company shall be attached to such bond.

3.3 The failure of the successful bidder to execute such contract and to supply the required bonds within ten days after the prescribed forms are presented for signature, or within such extended period as the Owner may grant based upon reasons determined adequate by the Owner shall constitute a default, and the Owner may either award the contract to the next responsible bidder or re-advertise for bids, and may charge against the bidder the difference between the amount of the bid and the amount for which a contract for the work is subsequently executed, irrespective of whether the amount thus due exceeds the amount of the bid guaranty.

PART 4 - POST-BID INFORMATION

4.1 LAWS AND REGULATIONS:

A. The bidder's attention is directed to the fact that all applicable State Laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over

construction of the project shall apply to the contract throughout and they will be deemed to be included in the contract the same as though herein written out in full.

B. The contractor and all subcontractors shall further comply with applicable building codes as referenced in the various sections of these specifications.

C. The contractor shall include, either on the bid form or attached thereto, a statement to the fact that the contractor is an Equal Opportunity Employer, and that the contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin.

1. Refer to further requirements as specified in the General Conditions.

D. Project Superintendent: The contractor will employ a qualified superintendent to run the project, with at least 4 years previous experience as a superintendent. The superintendent shall not be removed or transferred from the project by the contractor without prior approval of the Engineer. The Engineer reserves the right to request the removal of the superintendent or any employee, subcontractor, etc. if in his judgment it is in the best interest of the Owner and the Project.

4.2 PRE-CONSTRUCTION CONFERENCE:

A. Either before or soon after the actual award of the contract (but in any event prior to the start of construction), the contractor or his representative shall attend a pre-construction conference with representatives of the Owner. The conference will serve to acquaint the participants with the general plan of contract administration and requirements under which the construction operation is to proceed and will inform the contractor of the obligations imposed on him and his subcontractors.

1. The date, time, and place of the conference will be furnished to the contractor by the Architect.

4.3 CONTRACTOR’S LICENSE REQUIREMENTS:

A. The following is excerpted from the Contractor's Licensing Act of 1976:

1. 62-6-103.Contractor's License Required-- Recovery of Expenses by Unlicensed Contractor.

a. Any person, firm or corporation engaged in contracting in this state shall be required to submit evidence that he is qualified to engage in contracting, and shall be licensed as hereinafter provided; it shall be unlawful for any person, firm or corporation to engage in or offer to engage in contracting in the state, unless such person, firm or corporation has been duly licensed under the provisions of this chapter, as hereinafter provided. Any person, firm, or corporation engaged in contracting, including such person, firm, or corporation that engages in the construction of residences or dwellings constructed on private property for the

purpose of resale, lease, rent or any other similar purpose shall be required to submit evidence that he is qualified to engage in contracting and/or building, and shall be licensed. It shall be unlawful for any person, firm, or corporation to engage in, or offer to engage in contracting or building as hereinabove described, unless such person, firm or corporation has been duly licensed under the provisions of this chapter. Any person, firm, or church that owns property and buildings for individual use, and not for resale, lease, rent or other similar purpose, is exempt from the requirements of this chapter. Notwithstanding the foregoing, the license of any person, firm or corporation licensed as a general contractor on March 29, 1976, shall continue in force until the natural expiration thereof.

b. Contracts entered into by a person who is licensed by the Board shall clearly state that such person is licensed by the State Board for Licensing Contractors and that the Board is authorized to receive complaints relative to such person's professional conduct.

c. Any unlicensed general contractor covered by the provisions of this chapter shall be permitted in a court of equity to recover actual documented expenses only upon a showing of clear and convincing proof. (Acts 1976 (Adj. S.), Ch. 822, Section 3; 1977, Ch. 9, Section 1; 1979, Ch. 59, Section 7; 1980 (Adj. S.), Ch. 652, Section 5; T.C.A., Section 62-603.)

END OF SECTION 00 21 13

SECTION 00 41 13 – BID FORM

PART 1 - GENERAL

1.1 BID INFORMATION

A. Bidder: _____.

B. Project Name: **Wayne County Health Department – Site / Interior Renovation**

C. Project Location: **725 South Main Street, Waynesboro, TN 38485**

D. Owner: **Wayne County and Its Officials**

E. Architect: **TLM Associates, Inc.; 117 E. Lafayette St., Jackson, TN 38301; 731-988-9840**

F. Architect Project Number: **J-7076**

1.2 CERTIFICATIONS AND BASE BID

A. **Base Bid**: The undersigned Bidder, having carefully examined the Existing Conditions of the project area affecting the cost of the work, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by TLM Associates, Inc. and Architect's consultants, having and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all supervision, technical personnel, materials, labor, machinery, tools, services appurtenances, equipment including utility and transportation services, including all scheduled allowances, necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:

1. Base Bid Interior / Exterior Renovations: ARP Funds

   _____Dollars ($_____).

2. ADD Alternate No. 1 – LED Lighting: ARP Funds

   _____Dollars ($_____).

3. ADD Alternate No. 2 – Ceiling Insulation: ARP Funds

   _____Dollars ($_____).

4. Base Bid Interior Renovations (PHARMACY 110): IMMUNIZATION Funds

   _____Dollars ($_____).

5. Combination Bid (Includes ALL above):

   _____Dollars ($_____).

6. List of Itemized Priority:

    a. 4 New HVAC Units
    b. Correct Ductwork
    c. Repair Sheetrock Issues from Leaks
    d. New Entrance Doors with Handicap Access
    e. 3 New Back Exit Doors, 1 New Side Door & Frame
    f. New Parking Lots with Handicap Ramp (Civil)
    g. Add Staff Parking Lot to North Side with Entry Sidewalk to Back Door (Civil)
    h. 2 Keycard Access Entry Doors for Employees
    i. Awnings Over Back Doors
    j. Repair Holes in Front Brick Façade
    k. Replace Existing Doors / Frames
    l. New Fence Around the Back of Building (Civil)
    m. Storage Unit
    n. New Paint as Needed
    o. New Sidewalks -or- Repair and Stain Current Sidewalks (Civil)
    p. Replace Ceiling Tiles and Ceiling Grid as Needed
    q. Build a Lab Box Holder
    r. New Flagpole (Civil)

1.3 SUBCONTRACTORS AND SUPPLIERS

A. The following companies shall execute subcontracts for the portions of the Work indicated:

1. Mechanical Work
2. Plumbing Work
3. Electrical Work

1.4 TIME OF COMPLETION

A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Architect and shall fully complete the Work within 150 calendar days.

B. If delays are anticipated in material deliveries to complete the project, list separately with an approximate delivery date.

1.5 ACKNOWLEDGEMENT OF ADDENDA

A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:

1. Addendum No. 1, dated _____.
2. Addendum No. 2, dated _____.
3. Addendum No. 3, dated _____.

1.6 CONTRACTOR'S LICENSE

A. The undersigned further states that it is a duly licensed contractor for the type of work pro-

posed, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

1.7 SUBMISSION OF BID

Respectfully submitted this _____ day of _____, 2024.

Submitted By: _____
(Name of Bidding Firm or Corporation)

Street Address: _____

City, State, Zip _____

License No.: _____

Authorized Signature: _____
(Handwritten Signature)

Signed By: _____
(Type or Print Name)

Title: _____
(Owner / Partner / President / Vice President)

Witness By: _____
(Notary Public)

Term of Witness Expires: _____
(Date)

END OF SECTION 00 41 13

SECTION 00 43 13 – BID SECURITY FORM

The American Institute of Architect, A.I.A. Document A310, latest edition, shall be the bid bond form for this contract. Bid Bonds required on bids in excess of $25,000.00.

END OF SECTION 00 43 13

DOCUMENT 00 43 21 - ALLOWANCE FORM

1.1 BID INFORMATION

A. Bidder: _____.

B. Project Name: **Wayne County Health Department - Site / Interior Renovations**

C. Project Location: **725 South Main Street, Waynesboro, TN 38485**

D. Owner: **Wayne County and Its Officials**

E. Architect: **TLM Associates, Inc.; 117 E. Lafayette St., Jackson, TN 38301; 731-988-9840**

F. Architect Project Number: **J-7076**

1.2 BID FORM SUPPLEMENT

A. This form is required to be attached to the Bid Form.

B. The undersigned Bidder certifies that Base Bid submission to which this Bid Supplement is attached includes those allowances described in the Contract Documents and scheduled in Specification Section 01 21 16 – Allowances.

1.3 SUBMISSION OF BID SUPPLEMENT

A. Respectfully submitted this ____ day of _____, 2024.

B. Submitted By:_____
(Name of Bidding Firm or Corporation)

C. Authorized Signature: _____
(Handwritten Signature)

D. Signed By: _____
(Type or Print Name)

E. Title: _____
(Owner/Partner/President/Vice President)

END OF DOCUMENT 00 43 21

SECTION 00 43 23 – ALTERNATES FORM

PART 1 - GENERAL

1.1 BID INFORMATION

A. Bidder: _____.

B. Project Name: **Wayne County Health Department - Site / Interior Renovations**

C. Project Location: **725 South Main Street, Waynesboro, TN 38485**

D. Owner: **Wayne County and Its Officials**

E. Architect: **TLM Associates, Inc.; 117 E. Lafayette St., Jackson, TN 38301; 731-988-9840**

F. Architect Project Number: **J-7076**

1.2 BID FORM SUPPLEMENT

A. This form is required to be attached to the Bid Form.

B. The undersigned Bidder certifies that Base Bid submission to which this Bid Supplement is attached includes those alternates described in the Contract Documents and scheduled in Specification Section 01 23 00 – Alternates.

1.3 DESCRIPTION

A. The undersigned Bidder proposes the amount below be added to or deducted from the Base Bid if particular alternates are accepted by Owner. Amounts listed for each alternate include costs of related coordination, modification, or adjustment.

1. Cost-Plus-Fee Contract: Alternate price given below includes adjustment to Contractor's Fee.

B. If the alternate does not affect the Contract Sum, the Bidder shall indicate "NO CHANGE."

C. If the alternate does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."

D. The Bidder shall be responsible for determining from the Contract Documents the effects of each alternate on the Contract Time and the Contract Sum.

E. Owner reserves the right to accept or reject any alternate, in any order, and to award or amend the Contract accordingly within **60** days of the Notice of Award unless otherwise indicated in the Contract Documents.

F. Acceptance or non-acceptance of any alternates by the Owner shall have no effect on the Contract Time unless the "Schedule of Alternates" Article in Part 1 - 1.4 below provides a formatted space for the adjustment of the Contract Time.

1.4 SUBMISSION OF BID SUPPLEMENT

A. Respectfully submitted this ____ day of _____, 2024.

B. Submitted By: _____
(Name of Bidding Firm or Corporation)

C. Authorized Signature: _____
(Handwritten Signature)

D. Signed By: _____
(Type or Print Name)

E. Title: _____
(Owner/Partner/President/Vice President)

END OF DOCUMENT 00 43 23

DOCUMENT 00 43 73 - PROPOSED SCHEDULE OF VALUES FORM

1.1 PROPOSED SCHEDULE OF VALUES FORM

A. Proposed Schedule of Values Form: Provide a breakdown of the bid amount, including alternates, in enough detail to facilitate continued evaluation of bid. Coordinate with the Project Manual table of contents. Provide multiple line items for principal material and subcontract amounts in excess of **five** percent of the Contract Sum.

B. Arrange schedule of values consistent with format of AIA Document G703.

1. Copies of AIA standard forms may be obtained from the American Institute of Architects

a. http://www.aia.org/contractdocs/purchase/index.htm
b. docspurchases@aia.org
c. (800) 942-7732

Note: This is not required until successful bidder is awarded the contract.

END OF DOCUMENT 00 43 73

SECTION 00 45 00 – DRUG FREE WORKPLACE AFFIDAVIT

STATE OF: TENNESSEE
COUNTY OF: WAYNE

The undersigned, principal officer, of _____, an employer of five (5) or more employees contracting with, Lauderdale County, Tennessee government to provide construction services, hereby states under oath as follows:

1. The undersigned is a principal officer of _____ (hereinafter referred to as the "Company") and is duly authorized to execute this Affidavit on behalf of the Company.

2. The Company submits this Affidavit pursuant to T.C.A. § 50-9-113, which requires each employer with no less than five (5) employees receiving pay who contracts with the state or any local government to provide construction services to submit an affidavit stating that such employer has a drug-free workplace program that complies with Title 50, Chapter 9, of the *Tennessee Code Annotated.*

3. The Company is in compliance with T.C.A. § 50-9-113.

4. Attached hereto is a true and correct copy of the company's "certificate of compliance" (certified application) from the Tennessee Department of Labor and Workforce Development.

Further affiant saith not.

Principal Officer

STATE OF:
COUNTY OF:

Before me personally appeared _____, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that such person executed the foregoing affidavit for the purposes therein contained.

Witness my hand and seal at office this_____ day of _____ 2024.

My commission expires:

Notary Public

ATTACH A COPY OF YOUR CERTIFICATE OF COMPLIANCE TO THIS AFFIDAVIT, PLACE IN A SEPARATE SEALED ENVELOPE, AND ATTACH TO THE OUTSIDE OF THE SEALED ENVELOPE CONTAINING YOUR BID.

IF YOUR COMPANY HAS LESS THAN FIVE (5) EMPLOYEES, SIGN BELOW, PLACE THIS AFFIDAVIT ONLY IN A SEPARATE SEALED ENVELOPE, AND ATTACH TO THE OUTSIDE OF THE SEALED ENVELOPE CONTAINING YOUR BID.

IF LESS THAN FIVE (5) Employees Sign Here:

Title:

IRAN DIVESTMENT ACT AFFIDAVIT

As per Tennessee Code Annotated, Title 12, and effective July 1, 2016:

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to § 12-12-106.

_____

Signature

_____

Date

NON-BOYCOTT OF ISRAEL AFFIDAVIT

Concerning the Non-Boycott of Israel Act (TCA 12-4-1 et seq.), by submission of this bid/quote/proposal, each supplier and each person signing on behalf of any supplier certifies, and in the case of a joint bid/quote/proposal, each party thereto certifies as to its own organization, under penalty of perjury," that to the best of its knowledge and belief that each supplier is not boycotting Israel pursuant to § 12-4-1 and will not during the term of any award. Note: Applicable only to contracts of $250,000 or more and to suppliers with 10 or more employees.

The undersigned hereby acknowledges receipt of this affidavit and certifies that the submittal in response to this solicitation is in full compliance with the listed requirements. Failure to properly acknowledge issues concerning the above is grounds for bid rejection and may subject the signer to penalties as directed by the appropriate laws.

A contract entered into on or after July 1, 2022, that fails to comply with this section is void.

_____

Signature

_____

Printed Name

_____

Title

_____

Date

STATE OF TENNESSEE

BYRD ANTI-LOBBYING AMENDMENT CERTIFICATION

Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352.

Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

APPENDIX A, 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING – REQUIRED FOR CONTRACTS OVER $100,000 *Certification for Contracts, Grants, Loans, and Cooperative Agreements*

The undersigned certifies, to the best of his or her knowledge and belief, that:

☐ No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

☐ If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, “Disclosure Form to Report Lobbying,” in accordance with its instructions.

☐ The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The Contractor certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

Signature of Authorized Representative	**Date**
Printed Name and Title	**Phone Number / Email Address**

STATE OF TENNESSEE

IRAN DIVESTMENT ACT CERTIFICATION

SUBJECT CONTRACT NUMBER(S):	
CONTRACTOR LEGAL ENTITY NAME:	
EDISON SUPPLIER IDENTIFICATION NUMBER:	

The Iran Divestment Act, Tenn. Code Ann. § 12-12-101 et. seq. requires a person that attempts to contract with the state, including a contract renewal or assumption, to certify at the time the bid is submitted or the contract is entered into, renewed, or assigned, that the person or the assignee is not identified on a list created pursuant to § 12-12-106.

Currently, the list is available online at the following website: https://www.tn.gov/generalservices/procurement/central-procurement-office--cpo-/library-/public-information-library.html

The Contractor, identified above, certifies by signature below that it is not included on the list of persons created pursuant to Tenn. Code Ann. § 12-12-106 of the Iran Divestment Act.

CONTRACTOR SIGNATURE

NOTICE: This certification MUST be signed by an individual with legal capacity to contractually bind the Contractor.

PRINTED NAME AND TITLE OF SIGNATORY

DATE

STATE OF TENNESSEE

CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSBILITY MATTERS

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

☐ Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

☐ Have not within a three-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statues or
commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

☐ Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

☐ Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to 5 years, or both.

Signature of Authorized Representative	**Date**
Printed Name	**Phone Number / Email Address**

☐ I am unable to certify to the above statements. Explanation is attached.

STATE OF TENNESSEE

NON-BOYCOTT OF ISRAEL CERTIFICATION

The Bidder certifies that it is not currently engaged in, and will not for the duration of the contract engage in, a boycott of Israel as defined by Tenn. Code Ann. § 12-4-119. This provision shall not apply to contracts with a total value of less than two hundred fifty thousand dollars ($250,000) or to contractors with less than ten (10) employees.

According to the law, a boycott of Israel means engaging in refusals to deal, terminating business activities, or other commercial actions that are intended to limit commercial relations with Israel, or companies doing business in or with Israel or authorized by, licensed by, or organized under the laws of the State of Israel to do business, or persons or entities doing business in Israel, when such actions are taken:

1) In compliance with, or adherence to, calls for a boycott of Israel, or

2) In a manner that discriminates on the basis of nationality, national origin, religion, or other unreasonable basis, and is not based on a valid business reason. Tenn. Code Ann. § 12-4-119.

Signature of Authorized Representative	**Date**
Printed Name	**Phone Number / Email Address**

CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY

This certification is required pursuant to Executive Order 11246 (30 F. R. 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such report is submitted.

Certification by Bidder

Bidder/Firm: _____

Address: _____

City: _____ State _____ Zip _____

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause. ☐ Yes ☐ No
2. Compliance reports were required to be filed in connection with such contract or subcontract. ☐ Yes ☐ No
3. Bidder has filed all compliance reports due under applicable instructions, including SF-100. ☐ Yes ☐ No ☐ None Req.
4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended? ☐ Yes ☐ No

Bidder Name: _____ Title: _____

Signature: _____ Date: _____

ACKNOWLEDGEMENT REGARDING BIDDER SAM REGISTRATION

Pursuant to 2 CFR Parts 183 and 215 and the requirement of the U.S. Department of Housing and Urban Development (HUD), contractors procured directly by grantees, sub-grantees, and/or sub-recipients of HUD funds, including CDBG are required to have an active registration in the System of Award Management (SAM). This document shall be completed and submitted as part of the bid proposal.

1. By submitting this proposal, the prospective bidder certifies that it has an active registration is SAM that is not set to expire within the next 90 days.

2. By submitting this proposal, the prospective bidder certifies neither it, its principals nor affiliates, is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

3. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that an erroneous certification was rendered, in addition to other remedies available to the Federal Government, the Department or agency with which this transaction originated may pursue available remedies.

4. Further, the prospective bidder shall provide immediate written notice to the person to which this proposal is submitted if at any time the Participant learns that this certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

5. By submitting this proposal, it is agreed that should the proposed covered transaction be entered into, the prospective bidder will not knowingly enter into any lower-tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction unless authorized by the agency with which this transaction originated.

6. It is further agreed that by submitting this proposal, the prospective bidder will include Certification of Subcontractor Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion without modification, in all lower-tier covered transactions and in all solicitations for lower-tier covered transactions.

Provide the following information as detailed in the prospective bidder's SAM registration:

Entity Name: _____

Address: _____

City: _____ State: _____ Zip: _____

SAM Entity ID: _____ Expiration Date: _____

Active Exclusions: ☐ Yes ☐ No

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
RECREATION EDUCATIONAL SERVICES
WR Snodgrass TN Tower, 312 Rosa L. Parks Avenue, 2nd Floor, Nashville, TN 37243
PH: 615-532-0748 FAX: 615-532-0732

CERTIFICATION OF CONTRACTOR REGARDING CONFLICTS OF INTEREST, LOBBYING, NONDISCRIMINATION, PUBLIC ACCOUNTABILITY, AND PUBLIC NOTICE

This certification is required by the agency that has funded, in part, by: **(check one)**

☐ **Local Park & Recreation Fund (LPRF)** ☐ **Land & Water Conservation Fund (LWCF)**

☐ **Recreation Trail Program (RTP)** ☒ **Other** ARP

The Contractor, _____, by signing and submitting this Certification, acknowledges the following: This Certification will be incorporated into the Agreement executed between: _____ (*the Grantee)* and the Contractor.

By signing and submitting this Certification, the Contractor certifies that neither it, its principals nor affiliates has violated the following:

1. Conflicts of Interest: The Grantee warrants that no part of the total Grant Contract Amount shall be paid directly or indirectly to an employee or official of the State of Tennessee as wages, compensation, or gifts in exchange for acting as an officer, agent, employee, subcontractor, or consultant to the Grantee in connection with any work contemplated or performed relative to this Grant Contract.

2. Lobbying: The Grantee certifies to the best of its knowledge and belief that:

   a. No federally appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

   b. If any funds other than federally appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this contract, grant, loan, or cooperative agreement, the Grantee shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

   c. The Grantee shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

   This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into and is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. § 1352.

3. Nondiscrimination: The Grantee hereby agrees, warrants, and assures that no person shall be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination in the performance of this Grant Contract or in the employment practices of the Grantee on the grounds of handicap or disability, age, race, color,

religion, sex, national origin, or any other classification protected by federal, Tennessee state constitutional, or statutory law. The Grantee shall, upon request, show proof of nondiscrimination and shall post in conspicuous places, available to all employees and applicants, notices of nondiscrimination.

4. Public Accountability: If the Grantee is subject to Tenn. Code Ann. § 8-4-401 *et seq*., or if this Grant Contract involves the provision of services to citizens by the Grantee on behalf of the State, the Grantee agrees to establish a system through which recipients of services may present grievances about the operation of the service program. The Grantee shall also display in a prominent place, located near the passageway through which the public enters in order to receive Grant supported services, a sign at least eleven inches (11 ") in height and seventeen inches (17") in width stating:

NOTICE: THIS AGENCY IS A RECIPIENT OF TAXPAYER FUNDING. IF YOU OBSERVE AN AGENCY DIRECTOR OR EMPLOYEE ENGAGING IN ANY ACTIVITY WHICH YOU CONSIDER TO BE ILLEGAL, IMPROPER, OR WASTEFUL, PLEASE CALL THE STATE COMPTROLLER'S TOLL-FREE HOTLINE: 1-800-232-5454.

The sign shall be on the form prescribed by the Comptroller of the Treasury. The Grantor State Agency shall obtain copies of the sign from the Comptroller of the Treasury, and upon request from the Grantee, provide Grantee with any necessary signs.

5. Public Notice: All notices, informational pamphlets, press releases, research reports, signs, and similar public notices prepared and released by the Grantee in relation to this Grant Contract shall include the statement, "This project is funded under a grant contract with the State of Tennessee." All notices by the Grantee in relation to this Grant Contract shall be approved by the State.

6. Records: The Grantee and any approved subcontractor shall maintain documentation for all charges under this Grant Contract. The books, records, and documents of the Grantee and any approved subcontractor, insofar as they relate to work performed or money received under this Grant Contract, shall be maintained in accordance with applicable Tennessee law. In no case shall the records be maintained for a period of less than five (5) full years from the date of the final payment. The Grantee's records shall be subject to audit at any reasonable time and upon reasonable notice by the Grantor State Agency, the Comptroller of the Treasury, or their duly appointed representatives.

The records shall be maintained in accordance with Governmental Accounting Standards Board (GASB) Accounting Standards or the Financial Accounting Standards Board (FASB) Accounting Standards Codification, as applicable, and any related AICPA Industry Audit and Accounting guides.

In addition, documentation of grant applications, budgets, reports, awards, and expenditures will be maintained in accordance with U.S. Office of Management and Budget's Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards.

Grant expenditures shall be made in accordance with local government purchasing policies and procedures and purchasing procedures for local governments authorized under state law.

The Grantee shall also comply with any recordkeeping and reporting requirements prescribed by the Tennessee Comptroller of the Treasury.

The Grantee shall establish a system of internal controls that utilize the COSO Internal Control - Integrated Framework model as the basic foundation for the internal control system. The Grantee shall incorporate any additional Comptroller of the Treasury directives into its internal control system.

Any other required records or reports which are not contemplated in the above standards shall follow the format designated by the head of the Grantor State Agency, the Central Procurement Office, or the Commissioner of Finance and Administration of the State of Tennessee.

Grantee's Authorized Representative:

_____

Signature

_____

Print Name

_____

Title

_____

Date

CONTRACTOR: _____

_____

Signature

_____

Print Name

_____

Title

_____

Date

NOTICE

THIS ENTITY IS A RECIPIENT OF STATE AND FEDERAL FUNDS. IF YOU HAVE KNOWLEDGE OF ANY ACTIVITY WHICH YOU CONSIDER TO BE ILLEGAL, IMPROPER, OR WASTEFUL, PLEASE CALL THE STATE COMPTROLLER'S TOLL-FREE HOTLINE:

1-800-232-5454

DOCUMENT 00 51 00 - NOTICE OF AWARD

1.1 BID INFORMATION

A. Bidder: _____.

B. Bidder's Address: _____.

C. Prime Contact: _____.

D. Project Name: **Wayne County Health Department - Site / Interior Renovations**

E. Project Location: **725 South Main Street, Waynesboro, TN 38485**

F. Owner: **Wayne County and Its Officials**

G. Architect: **TLM Associates, Inc.; 117 E. Lafayette St., Jackson, TN 38301; 731-988-9840**

H. Architect Project Number: **J-7076**

1.2 NOTICE OF AWARD OF CONTRACT

A. Notice: The above Bidder is hereby notified that their bid, dated _____, for the above Contract has been considered and the Bidder is hereby awarded a contract for **<Insert brief description of Work or sections of Work awarded>**.

B. Alternates Accepted: The following alternates have been accepted by Owner and have been incorporated in the Contract Sum:

1. Alternate No. 1: <Insert alternate title>.
2. Alternate No. 2: <Insert alternate title>.

C. Contract Sum: The Contract Sum is _____ _____dollars ($_____).

1.3 EXECUTION OF CONTRACT

A. Contract Documents: Copies of the Contract Documents will be made available to the Bidder immediately. The Bidder must comply with the following conditions precedent within _____ days of the above date of issuance of the Notice:

1. Deliver to Owner **three (3)** sets of signed copies of the Contract Documents to be signed by Owner. Dispersment of fully executed copies shall be: one (1) for the Owner, one (1) for the Architect, and one (1) for you, the bidder.
2. Deliver with the executed Contract Documents Bonds and Certificates of Insurance required by the Contract Documents.

B. Compliance: Failure to comply with conditions of this Notice within the time specified will entitle Owner to consider the Bidder in default, annul this Notice, and declare the Bidder's Bid security forfeited.

1. Within **10** days after the Bidder complies with the conditions of this Notice, Owner will return to the Bidder one fully executed copy of the Contract Documents.

1.4 NOTIFICATION

A. This Notice is issued by:

Owner: _____

Signed: _____

By: _____

Title: _____

END OF DOCUMENT 00 51 00

SECTION 00 52 13 – AGREEMENT FORM

The American Institute of Architect, A.I.A. Document A101, 2017 Edition entitled "Standard Form of Agreement between Owner and Contractor" shall be the contract form for this project.

END OF SECTION 00 52 13

SECTION 00 55 00 – NOTICE TO PROCEED

TO: **DATE:**

PROJECT NAME: Wayne County Health Department - Site / Interior Renovations

TLM PROJECT NO. J-7076

You are hereby notified to commence work in accordance with the Agreement dated _____, 2024, on or before _____, and you are to complete the work within 150 consecutive calendar days thereafter.

The date of completion for substantial completion is therefore, _____, 20____.

Owner: Wayne County and Its Officials

Signed: _____

By: _____

Title: _____

ACCEPTANCE OF NOTICE
Receipt of the above NOTICE TO PROCEED is hereby acknowledged by:
this, the _____ day of _____ , 2024 By: _____ Title: _____

SECTION 00 60 00 – PROJECT FORMS

1.1 FORM OF AGREEMENT AND GENERAL CONDITIONS

A. The following form of Owner / Contractor Agreement and form of the General Conditions shall be used for Project:

1. AIA Document A101, "Standard Form of Agreement between Owner and Contractor, Stipulated Sum."

    a. The General Conditions for Project are AIA Document A201, "General Conditions of the Contract for Construction."

2. AIA Document A102, "Standard Form of Agreement between Owner and Contractor, Cost Plus Fee, Guaranteed Maximum Price."

    a. The General Conditions for Project are AIA Document A201, "General Conditions of the Contract for Construction."

3. AIA Document A103, "Standard Form of Agreement between Owner and Contractor, Cost Plus Fee."

    a. The General Conditions for Project are AIA Document A201, "General Conditions of the Contract for Construction."

4. AIA Document A105, "Standard Form of Agreement between Owner and Contractor for a Small Project, Where the Basis of Payment Is a Stipulated Sum."

    a. The General Conditions for Project are AIA Document A205, "General Conditions of the Contract for Construction of a Small Project."

5. AIA Document A132, "Standard Form of Agreement between Owner and Contractor, Construction Manager as Adviser Edition."

    a. The General Conditions for Project are AIA Document A232, "General Conditions of the Contract for Construction, Construction Manager as Adviser Edition."

6. AIA Document A133, "Standard Form of Agreement between Owner and Contractor, Construction Manager as Constructor, Guaranteed Maximum Price."

    a. The General Conditions for Project are AIA Document A201, "General Conditions of the Contract for Construction."

7. AIA Document A133, "Standard Form of Agreement between Owner and Contractor for Integrated Project Delivery."

    a. The General Conditions for Project are AIA Document A295, "General Conditions of the Contract for Integrated Project Delivery."

8. The General Conditions are included in the Project Manual, incorporated by reference.
9. The Supplementary Conditions for Project are separately prepared and included in the Project Manual.
10. Owner's document(s) bound following this Document.

1.2 ADMINISTRATIVE FORMS

A. Administrative Forms: Additional administrative forms are specified in Division 01 General Requirements.

B. Copies of AIA standard forms may be obtained from the American Institute of Architects; http://www.aia.org/contractdocs/purchase/index.htm; docspurchases@aia.org; (800) 942-7732.

C. Preconstruction Forms:

1. Form of Performance Bond and Labor and Material Bond: AIA Document A312, "Performance Bond and Payment Bond."
2. Form of Certificate of Insurance: AIA Document G715, "Supplemental Attachment for ACORD Certificate of Insurance 25-S."

D. Information and Modification Forms:

1. Form for Requests for Information (RFIs): AIA Document G716, "Request for Information (RFI)."
2. Form of Request for Proposal: AIA Document G709, "Work Changes Proposal Request."
3. Change Order Form: AIA Document G701, "Change Order."
4. Form of Architect's Memorandum for Minor Changes in the Work: AIA Document G707, "Architect's Supplemental Instructions."
5. Form of Change Directive: AIA Document G714, "Construction Change Directive."

E. Payment Forms:

1. Schedule of Values Form: AIA Document G703, "Continuation Sheet."
2. Payment Application: AIA Document G702/703, "Application and Certificate for Payment and Continuation Sheet."
3. Form of Contractor's Affidavit: AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
4. Form of Affidavit of Release of Liens: AIA Document G706A, "Contractor's Affidavit of Payment of Release of Liens."
5. Form of Consent of Surety: AIA Document G707, "Consent of Surety to Final Payment."

END OF DOCUMENT 00 60 00

SECTION 00 61 13 – PERFORMANCE AND PAYMENT BONDS

The American Institute of Architects, A.I.A. Document A312, 2010 Edition, entitled “Performance Bond” and “Payment Bond” shall be the contract bond form for this project. These bonds are required on contracts in excess of $50,000.00.

END OF SECTION 00 61 13

SECTION 00 72 10- SUPPLEMENTAL GENERAL CONDITIONS

PART 1 - GENERAL

1.1 COMPLIANCE WITH FEDERAL LAW, REGULATIONS AND EXECUTIVE ORDERS

A. The recipient and its contractors are required to comply with all Federal laws, regulations, and executive orders. This is an acknowledgement that the Treasury ARP SLFRF financial assistance will be used to fund all or a portion of the contract. The contractor will comply with all applicable Federal law, regulations, executive orders, Treasury policies, procedures, and directives.

1.2 PAYMENT TO CONTRACTOR

A. To insure the proper performance of this contract, the owner shall retain five percent (5%) of the amount of each estimate until final completion and acceptance of all work covered by this contract: Provided that the Contractor shall submit his estimate not later than the first day of the month: Provided further that on completion and acceptance of each separate building, public work, or other division of the contract, on which the price is stated separately in the contract, payment may be made in full, including retained percentages thereon, less authorized deductions.

B. In preparing estimates the material delivered on the site and preparatory work done may be taken into consideration.

C. All material and work covered by partial payments made shall thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor from the sole responsibility for the care and protection of materials and work upon which payments have been made or the restoration of any damaged work, or as a waiver of the right of the Owner to require the fulfillment of all of the terms of the contract.

D. Owner's Right to Withhold Certain Amounts and Make Application Thereof: The Contractor agrees that he will indemnify and save the Owner harmless from all claims growing out of the lawful demands of subcontractors, laborers, workers, mechanics, material men, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this contract. The Contractor shall, at the Owner's request, furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged, or waived. If the Contractor fails so to do, then the Owner may, after having served written notice on the said Contractor, either pay unpaid bills, of which the Owner has written notice, direct, or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor shall be resumed, in accordance with the terms of this contract, but in no event shall the provisions of this sentence be construed to impose any obligations upon the Owner to either the Contractor or his Surety. In paying any unpaid bills of the Contractor, the Owner shall be deemed the agent of the Contractor, and

any payment so made by the Owner shall be considered as a payment made under the contract by the Owner to the Contractor and the Owner shall not be liable to the Contractor for any such payments made in good faith.

1.3 PAYMENT BY CONTRACTOR

A. The Contractor shall pay: (a) for all transportation and utility services not later than the 20th day of the calendar month following that in which services are rendered, (b) for all materials, tools, and other expendable equipment to the extent of ninety-five percent (95%) of the cost thereof, not later than the 20th day of the calendar month following that in which such materials, tools, and equipment are delivered at the site of the project, and the balance of the cost thereof, not later than the 30th day following the completion of that equipment are part if the work in or on which such materials, tools, incorporated or used, and (c) to each of his subcontractors, not later than the 5th day following each payment to the Contractor, the respective amounts allowed the Contractor on account of the work performed by his subcontractors to the extent of each subcontractor's interest therein.

B. Copeland Anti-Kickback Act

1. Contractor. The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.
2. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clause above and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.
3. Breach. A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12."

C. Procurement of Recovered Materials

1. In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired competitively within a timeframe providing for compliance with the contract performance schedule; meeting contract performance requirements; or at a reasonable price.
2. Information about this requirement, along with the list of EPA-designated items, is available at EPA's Comprehensive Procurement Guidelines webpage: https://www.epa.gov/smm/comprehensive- procurement-guideline-cpg-program..
3. The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

D. Domestic Preference for Procurement

1. As appropriate, and to the extent consistent with law, the contractor should, to the greatest extent practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States. This includes, but is not limited to iron, aluminum, steel, cement, and other manufactured products.
    a. Produced in the United States means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States. Manufactured products mean items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

1.4 TIME FOR COMPLETION AND LIQUIDATED DAMAGES

A. It is hereby understood and mutually agreed, by and between the Contractor and the Owner, that the date of beginning and the time for completion as specified in the contract of the work to be done hereunder are essential conditions of this contract; and it is further mutually understood and agreed that the work embraced in this contract shall be commenced on a date to be specified in the "Notice to Proceed."

B. The Contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will ensure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and the Owner, that the time for the completion of the work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

C. If the said Contractor shall neglect, fail or reuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this 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 the time stipulated in the contract for completing the work.

D. The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain and said amount shall be retained from time to time by the Owner from current periodical estimates.

E. It is further agreed that time is of the essence of each and every portion of this contract and of the specifications wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence of this contract. Provided that the Contractor shall not be charged with liquidated damages or any excess cost when the Owner determines that the Contractor is without fault and the Contractor's reasons for the time extension are acceptable to the Owner; Provided further that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due:

1. To any preference, priority or allocation order duly issued by the Government.
2. To unforeseeable cause beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God, or of the public enemy, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather: and
3. To any delays of Subcontractors or suppliers occasioned by any of the causes specified in subsections A and B of this article:
    a. Provided further that the Contractor shall, within ten (10) days from the beginning of such delay, unless the Owner shall grant a further period of time prior to the date of final settlement of the contract, notify the Owner, in writing, of the delay and notify the Contractor within a reasonable time of it decision in the matter.

1.5 PROTECTION OF LIVES AND HEALTH

A. The Contractor shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all damages to persons or property, either on or off the site, which occur as a result of his prosecution of the work. The safety provisions of applicable laws and building and construction codes, in addition to specific safety and health regulations described by Chapter XIII, Bureau of Labor Standards, Department of Labor, Part 1518, Safety and Health Regulations for Construction, as outlined in the Federal Register, Volume 36, No. 75, Saturday, April 17, 1971. Title 29 -LABOR, shall be observed and the Contractor shall take or cause to be taken, such additional safety and health measures as the Contracting Authority may determine to be reasonably necessary.

B. Compliance with the Contract Work Hours and Safety Standards Act.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the t $27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

3. Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.
4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower-tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

C. Clean Air Act

1. The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 ets eq.
2. The contractor agrees to report each violation to the (name of subrecipient entering into the contract) and understands and agrees that the (name of the subrecipient entering into the contract) will, in turn, report each violation as required to assure notification to Treasury, and the appropriate Environmental Protection Agency Regional Office.
3. The contractor agrees to include these requirements in each subcontract exceeding $150,000.

D. Federal Water Pollution Control Act

1. The contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 ets eq.
2. The contractor agrees to report each violation to the (name of the subrecipient entering into the contract) and understands and agrees that the (name of the subrecipient entering into the contract) will, in turn, report each violation as required to assure notification to the Treasury, and the appropriate Environmental Protection Agency Regional Office.
3. The contractor agrees to include these requirements in each subcontract exceeding $150,000.

1.6 DEBARMENT AND SUSPENSION

A. This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

B. The contractor must comply with 2 C.F.R. pt. 180, subpart C and2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower-tier transaction it enters into.

C. This certification is a material representation of fact relied upon by (insert name of recipient/subrecipient/applicant). If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to (insert name of recipient/subrecipient/applicant), the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

D. The bidder or proposer agrees to comply with the requirements of2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

1.7 OTHER PROHIBITED INTEREST

A. No Official of the Owner who is authorized in such capacity and on behalf of the Owner to negotiate, make, accept or approve, or to take part in negotiating, making, accepting, and approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or in any part hereof. No officer, employee, architect, attorney, engineer or inspector of or for the Owner who is authorized in such capacity and on behalf of the Owner to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the project.

B. During the performance of this contract, the contractor agrees as follows:

1. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
3. The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant

or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
5. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
6. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
7. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law. (8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through.
8. In every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:
    a. Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.
    b. The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.
    c. The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of

contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

d. The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

C. Byrd Anti-Lobbying Amendment

1. Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

1.8 MISCELLANEOUS

A. Access to Records

1. The Contractor agrees to provide (insert name of state agency or local or Indian tribal government), (insert name of recipient), Treasury, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.
2. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

3. The Contractor agrees to provide the Treasury or authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.

B. The Contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the Contractor's actions pertaining to this contract.

1.9 USE AND OCCUPANCY PRIOR TO ACCEPTANCE BY OWNER

A. The Contractor agrees to the use and occupancy of a portion or unit of the project before formal acceptance by the Owner, provided the Owner:

1. Secures written consent of the Contractor except in the event, in the opinion of the Architect/Engineer, the Contractor is chargeable with unwarranted delay in final clean-up of punch list items or other contract requirements.
2. Secures endorsement from the insurance carrier and consent of the surety permitting occupancy of the building or use of the project during the remaining period of construction, or,
3. When the project consists of more than one building, and one of the buildings is occupied, secures permanent fire and extended coverage insurance, including a permit to complete construction. Consent of the surety must also be obtained.

1.10 SUSPENSION OF WORK

A. Should the Owner be prevented or enjoined from proceeding with work either before or after the start of construction by reason of any litigation or other reason beyond the control of the Owner, the Contractor shall not be entitled to make or assert claim for damage by reason of said delay; but time for completion of the work will be extended to such reasonable time as the Owner may determine will compensate for time lost by such delay with such determination to be set forth in writing.

1.11 MATERIAL INSURANCE

A. The Contractor shall obtain an "Installation Floater" to protect project materials prior to installation. The amount shall be at least One Hundred Percent (100%) of the value of the materials.

1.12 CONTRACTOR'S AND SUBCONTRACTOR'S PUBLIC LIABILITY, VEHICLE LIABILITY, AND PROPERTY DAMAGE INSURANCE

A. The Contractor agrees to comply with the provisions of the Workman's Compensation Laws of the State in which the work is performed and to require all subcontractors likewise to comply. The Contractor agrees that, prior to the beginning of any work by the Contractor or Subcontractors, as the case may be, the Contractor will furnish to the Owner for himself and for each subcontractor a certificate from insurance company showing issuance of workman's compensation coverage for the State or a certificate from the State Workman's Board showing proof of liability to pay compensation directly.

1.13 EMPLOYER'S PROTECTIVE LIABILITY

A. Further, the Contractor shall maintain such other insurance (with limits as shown below) to protect the Contractor, the Owner, and the Architect/Engineer from any claims for property damage or personal injury, including death, which may arise out of operations under the Contract. The Contractor shall furnish the Owner certificates and policies of such insurance (as specified below) before the work begins.

B. Below is listed the additional insurance coverage which shall be procured by the Contractor at his own expense:

1. The Contractor’s Public Liability Insurance, Property Damage and Vehicle Liability Insurance shall be in an amount not less than $1,000,000.00 combined single limits for injuries and property damage, for any one occurrence. There shall also be aggregate limits for injuries and property damage, for any one occurrence. There shall also be an aggregate limit of $2,000,000.00 and a $1,000,000.00 “umbrella”.
2. Owners Contractors Protective (OCP) shall be provided in the name of the Owner and for a minimum of $1,000,000.00.
3. The insurance as specified above shall contain a “per project endorsement” such that the above coverage shall apply to this specific project.

C. ADDITIONAL NAMED INSURED

1. The owner and TLM Associates, Inc. shall be named as additional named insured parties on all contractor liability policies for the project.

1.14 BUILDER’S RISK INSURANCE

General Conditions Article 6.04 *Property Insurance* shall be deleted from the specifications in its entirety.

Builder’s Risk is required as specified.

1.15 PERFORMANCE BOND AND PAYMENT BOND

A. The Contractor shall furnish a Performance Bond and a Labor and Materials Payment Bond in an amount equal to 100% of the Contract Sum as security for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract. Bond shall be furnished through an agent domiciled and legally authorized to do business in the state in which the work is to be performed and delivered to the Owner not later than the date of execution of the contract. Surety Company shall be one acceptable to the Owner and Architect.

1.16 BUSINESS LICENSE

A. The Contractor shall acquire, at no expense to the Owner, a City and/or County Business License as applicable.

1.17 BUILDING PERMIT

A. Prior to initiating work, the Contractor shall acquire a permit from the Building Department as applicable.

PART 2 - PRODUCTS

N/A

PART 3 - EXECUTION

N/A

END OF SECTION 00 72 10

SECTION 00 72 13 - GENERAL CONDITIONS

The American Institute of Architects A201-2017, Articles 1 through 15, pages 1 through 40 is hereby made a part of the specification.

END OF SECTION 00 72 13

SECTION 00 81 00 – SUPPLEMENTARY CONDITIONS
Modifications to General Conditions

Introduction: The following supplements modify, delete and/or add to the General Conditions. Where any article, paragraph or subparagraph in the General Conditions is supplemented by one of the following paragraphs, the provisions of such article, paragraph or subparagraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any article, paragraph or subparagraph in the General Conditions is amended, voided, or superseded by any of the following paragraphs, the provisions of such article, paragraph or subparagraph not so amended, voided, or superseded shall remain in effect.

Supplements and Changes to the General Conditions, A.I.A. Form A201 2017 Edition.

ARTICLE 1 - CONTRACT DOCUMENTS

1.2 Execution, Correlation, Intent, and Interpretations:

Add the following to 1.2.1 - Later claims for extra compensation for labor, materials, and equipment which could have been foreseen shall not be recognized.

ADD 1.2.4 as follows:

1.2.4 If any error, discrepancy, or variances are found in the documents, the Contractor shall notify the Architect before beginning the work involved. The Architect will make correction, interpretation, or clarification promptly, basing his decision on the intent of the Documents.

ARTICLE 3 - CONTRACTOR

3.4 Labor and Materials: Add the following:

3.4.4 All material delivered to the job site shall be so stored and handled as to preclude inclusion of any foreign substances or causing of any discoloration therein and to prevent any damage thereto which might reduce its effectiveness as part of the work.

3.4.5 All work as described or required shall be executed in neat, skillful, workmanlike manner in accordance with best recognized trade practices. Only competent workmen who satisfactorily perform their duties shall be employed on work.

3.4.6 Trade Names: Where trade names appear in the specifications, they are used to indicate standards of quality. However, this is intended to be an open specification (except as otherwise designated), accessible to any reputable manufacturer whose product, in Architect's opinion, is equal to that named or described and meets requirements of Contract Documents. The Architect, however, shall be sole judge of products submitted as being equal to those specified in respect to comparative qualities, and his decision shall be final and conclusive.

3.4.7 No asbestos containing materials may be used in this project nor may asbestos containing building materials be included as a building element.

3.9 Superintendent: Add the following:

3.9.4 Contractor's Superintendent shall devote his full time to this project and shall maintain his office on job site. He shall direct, coordinate and supervise all work under this contract and shall inspect all materials delivered to project. He shall ascertain whether or not they comply with contract requirements and shall reject all nonconforming materials. He shall have all nonconforming materials removed immediately from the project site.

3.14 Cutting and Patching of Work: Add the following:

3.14.3 Cutting and patching shall be the responsibility of the subcontractor requiring access to an area such as the mechanical contractor or electrical contractor needing to get to their respective equipment or lines.

3.14.4 Patch work shall be performed by the appropriate subcontractor engaged in a given craft or trade; that is, the plaster subcontractor shall do all patching of plaster; ceramic tile subcontractor shall patch ceramic tile, etc.

3.14.5 The cost of required patching shall be the responsibility of that subcontractor requiring access.

3.14.6 Patching of all finishes shall match existing to meet Architect's approval.

3.15 Cleaning Up: Add to 3.15.1 the following: He shall replace any broken glass, remove stains, spots, marks and dirt from decorated work, clean hardware, remove paint spots and smears from all surfaces, clean fixtures and wash all concrete and tile.

ARTICLE 7 - CHANGES IN THE WORK

7.3 Construction Change Directives - Add after Clause 7.3.6 the following:

A "reasonable" allowance for overhead and profit shall be defined as follows:

(1) For the subcontractor, 11% of the net extra cost of the work he performs.
(2) For the Contractor, 5-1/2% of the net extra cost of the work performed by subcontractors.
(3) For the Contractor, 11% of the net extra cost of the work he performs with his own forces.

9.3.1 Application for Payments: Add to 9.3.1 the following:

Ninety-five percent (95%) of value of work executed and ninety-five percent (95%) of value of materials properly stored on site, less previous payments, shall be paid each month by Owner to Contractor based on Architect's approval of Application for Payment. Approved forms are A.I.A. forms G702 and G703, 1992 Edition.

9.8 Substantial Completion

Add to 9.8.2 the following:

9.8.2.1 Upon notification by the Contractor that the work is sufficiently complete for Architect's inspection, the architect will, within a reasonable time conduct an inspection. As a result of this inspection the Architect will issue a list of items (Punch List) to the Contractor which requires completion or correction.

9.8.2.2 After the Architect has inspected the project and provided the Contractor with a "Punch List", and the Contractor has corrected those items listed in the "Punch List", the Contractor shall notify the Architect of corrections and ask for a final inspection.

9.8.2.3 When the Architect makes his final inspection to verify those corrections and perhaps finds that some of the items which were previously listed have not been corrected, the Architect may elect to retain the full amount of the dollar estimate of the "Punch List". This retainage will be paid upon final completion requirements as specified in 9.10 of the General Conditions. See Specification Section 01 77 00 – Closeout Procedures for Re-Inspection fees.

10.2 Safety of Persons and Property: Add the following, 10.2.9:

All work shall be considered under the care, custody, or control of the Contractor until completion and acceptance by the Owner and Architect.

ARTICLE 11 - INSURANCE AND BONDS

11.1.1 Supplement as follows: Workman's Compensation and Employer's Liability.

The Contractor agrees to comply with the provisions of the Workman's Compensation Laws of the State in which the work is performed and to require all subcontractors likewise to comply. The Contractor agrees that, prior to the beginning of any work by the Contractor or Subcontractors, as the case may be, the Contractor will furnish to the Owner for himself and for each subcontractor a certificate from insurance company showing issuance of workman's compensation coverage for the State, or a certificate from the State Workman's Board showing proof of liability to pay compensation directly.

Employer's Protective Liability: $100,000.00 per person - $300,000.00 each occurrence for Property Damage.

$300,000.00 per person - $500,000.00 each occurrence for Bodily Injury Liability.

Further, the Contractor shall maintain such other insurance (with limits as shown below) to protect the Contractor, the Owner, and the Architect from any claims for property damage or personal injury, including death, which may arise out of operations under the Contract. The Contractor shall furnish the Owner certificates and policies of such insurance (as specified below) before the work begins.

Below is listed the additional insurance coverage which shall be procured by the Contractor at his own expense.

1. The Contractor's General Liability Insurance shall be in an amount not less than $1,000,000.00 combined single limits for injuries and property damage, for any one occurrence, with a $2,000,000.00 aggregate.

1B. There shall also be a $1,000,000.00 "umbrella".

1C. Vehicle - $1,000,000.00 Combined Single Limit occurrence, including Hired and Non-Owned Auto Liability.

2. Owners Contractors Protective (OCP) shall be provided in the name of the Owner and for a minimum of $1,000,000.00 per occurrence $2,000,000 aggregate.

ADD 11.1.5 as follows:

The Owner and TLM Associates, Inc. shall be additional named insureds under the Contractor's insurance policy or policies and the Certificate of Insurance shall so state.

ADD 11.1.6 as follows:

The insurance as specified above shall contain a **"per project endorsement"** such that the above coverages shall apply to this specific project.

When such hazard exists and before any earth moving or excavating equipment is used on the premises, the Contractor or Subcontractor involved shall provide coverage for liability arising from the destruction of property below the surface of the ground (U coverage).

When explosives are used or when such hazard exists or becomes present on the premises, the contractor or Subcontractor shall purchase insurance covering all liability arising from blasting or explosion (X & C Coverage). The Architect shall be notified 72 hours (excluding weekends and holidays) prior to the use of explosives.

11.3 Property Insurance – Add the following:

11.3.1.6 Builder's Risk Insurance shall be purchased by the **Contractor** at his own expense and shall cover fire, extended coverage, vandalism, and malicious mischief. Said insurance policy to be in the name of the Owner, Architect, the Contractor, and the Subcontractor "as their interests may appear" and to cover the full value of the work in sufficient amount to cover fully the value of the work performed and material on the site. This insurance will not be applicable to any tools or equipment when such tools and equipment are not part of the structure being constructed. The Contractor shall be responsible for the securing and maintaining of fire insurance and other insurance on any tools, equipment, or supplies which are to remain his property.

Change 11.4.1 to read as follows:

11.4.1 The Contractor shall furnish a Performance Bond and a Labor and Materials Payment Bond in an amount equal to 100% of the Contract Sum as security for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract. Form of Instruments shall be A.I.A. A-311, February 1970 Edition; no substitutes. Bond shall be furnished through an agent domiciled and legally authorized to do business in the State in which the work is to be performed and delivered to the Owner not later than the date of execution of the contract. Surety company shall be one acceptable to the Owner and Architect.

ARBITRATION

References to Arbitration shall be removed from the General Conditions. These deletions are located as follows: 8.3.1, 11.3.10, 13.1.1, 15.3.2 and the entirety of 15.4.

ADDITIONAL CONDITIONS

FIRE RATED ASSEMBLIES

A. The Contractor shall be responsible for providing assemblies which conform to fire ratings indicated. He shall coordinate the work of subcontractor and suppliers involved in floor assemblies, roof assemblies, wall and partition assemblies required to be fire rated and shall submit evidence that such assemblies conform to fire ratings indicated. No claims for extra compensation for work required to conform to fire ratings shall be recognized.

B. The Architect shall furnish to the Contractor required sets of plans and specifications properly sealed, for use in obtaining a building permit. It shall be the responsibility of the Architect to ensure that the plans are in agreement with the local codes.

C. The Contractor shall be responsible for obtaining approvals of the plans from all governmental agencies having jurisdiction.

EXECUTION OF CONTRACT

A. Subsequent to the award and within ten days after the prescribed forms are presented for signature the successful bidder shall execute and deliver to the Owner a contract in the form furnished in such number of counterparts as the Owner may require.
B. The failure of the successful bidder to execute such contract and to supply the required bonds within ten days after the prescribed forms are presented for signature, or within such extended period as the Architect may grant based upon reasons determined adequate by the Owner shall constitute a default, and the Owner may either award the Contract to the next responsible bidder or re-advertise for bids, and may charge against the bidder the difference between the amount of the bid and the amount for which a contract for the work is subsequently executed, irrespective of whether the amount thus due exceeds the amount of the bid guaranty.

PRE-CONSTRUCTION CONFERENCE

A. Either before or soon after the actual award of the contract (but in any event prior to the start of construction), the Contractor or his representative shall attend a pre-construction conference with representatives of the Owner and the Architect. The conference will serve to acquaint the participants with the general plan of contract administration and requirements under which the construction operation is to proceed and will inform the Contractor of the obligations imposed on him and his subcontractors.

B. The date, time and place of the conference will be furnished to the Contractor by the Architect.

LAWS AND REGULATIONS

A. The bidder's attention is directed to the fact that all applicable State Laws, municipal ordinances and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout and they will be deemed to be included in the contract the same as though herein written out in full.

B. The Contractor and all subcontractors shall further comply with applicable building codes as referenced in the various sections of the specifications.

C. The Contractor shall include, on the bid form, a statement to the fact that the Contractor is an Equal Opportunity Employer, and that the Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin.

PROJECT SUPERINTENDENT: The Contractor will employ a qualified superintendent to run the project, with at least 4 years previous experience as a superintendent.

END OF SECTION 00 81 00

SECTION 00 81 10 - SPECIAL CONDITIONS

Time for Completion: The Work shall be commenced at the time stipulated in the Notice to Proceed to the Contractor and shall be fully completed within the number of days specified on the Bid Form.

Liquidated Damages: As actual damages for any delay in completion are impossible of determination, the Contractor and his sureties shall be liable for and shall pay to **Wayne County, TN** the sum of **$0.00 (zero dollars)** fixed, agreed, and liquidated damages for each calendar day of delay until the work is completed and accepted.

END OF SECTION 00 81 10

DIVISION 1

GENERAL REQUIREMENTS

SECTION 01 11 13 – SUMMARY OF WORK

PART 1 - GENERAL

1.1 The General Conditions of the Contract and Supplementary General Conditions of the Contract of this specification are herein made a part of this section of the specifications. The Contractor and Subcontractor shall carefully examine all drawings and all sections of the specifications so as to properly coordinate his work with the work of others.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. The work of this contract comprises of

1. General Building Construction
2. Interior Finishes
3. Mechanical and Plumbing Systems
4. Electrical Systems

B. The Scope of Work includes the following but is not limited to only the following:

1. Remove and replace ceilings and lighting as indicated (ADD Alternate No. 1).
2. New HVAC units.
3. Add new solid surface to some existing cabinets as indicated.
4. Moving furniture as required to perform renovation work.
5. New parking.
6. Interior door replacement.
7. Pharmacy renovation.

1.3 CONTRACTOR'S DUTIES

A. Except as specifically noted, provide and pay for labor, materials, and equipment, tools, construction equipment and machinery, water, heat and utilities required for construction, other facilities and services necessary for proper execution and completion of work.

B. Pay legally required sales, consumer and use taxes.

C. Secure and pay for, as necessary for proper execution and completion of work and as applicable at time of receipt of bids, Permits, Government Fees and Licenses.

D. Give required notices.

E. Comply with codes, ordinances, rules, regulations, orders, and other legal requirements of public authorities which bear on performance of work.

F. Promptly submit written notice to Designer of observed variance of Contract Documents from legal requirements. It is not the Contractor's responsibility to make certain that drawings and specifications comply with codes and regulations.

G. Appropriate modifications to contract documents will adjust necessary changes. Assume responsibility for work known to be contrary to requirements without notice.

H. Enforce strict discipline and good order among employees. Do not employ or work unfit persons or persons not skilled in assigned work.

1.4 CONTRACTS

A. Construct work under single lump sum contract.

1.5 SPECIAL ORDER MATERIALS

A. The Contractor shall be advised that certain products, materials, and equipment may be available on special order basis only; and shall place his order for same with the manufacturer early so as not to delay the work.

1.6 CONTRACTOR USE OF PREMISES

A. Confine operations at site to areas permitted by Law, Ordinances, Permits and Contract Documents.

B. Do not unreasonably encumber site with materials or equipment.

C. Do not load structure with weight that will endanger structure.

D. Assume full responsibility for protection and safekeeping of products stored on premises.

E. Move any stored products which interfere with operations of Owner or other Contractor.

F. Obtain and pay for use of additional storage or work areas for needed operations.

1.7 EXAMINATION OF SURFACES

A. All Contractors shall examine all surfaces on which, or against which, their work is to be applied and shall notify the Designer of any defects that they may discover which, in their opinion would be detrimental to the proper installation of their product. Installation of material by the Contractors shall be considered as indication of acceptance of the surface by them.

1.8 COMPLETION

A. It is the intent of these specifications and the Contract Documents that each and every fixture, piece of equipment, appliance, and any other related articles shown on the drawings or specified herein, as required for the proper completion of the work, shall be completely installed, connected, wired, and made satisfactorily operable for use and service for which it was intended. The manufacturer or vendor of any fixture, equipment, or appliance shall see to it that all connections, whether mechanical or wired, are properly built-in or attached to the article when or before it reaches the job site so it will operate with the connections prepared therefore in the building. Nevertheless, and notwithstanding any omission or failure on the part of the manufacturer or vendor to provide suitable connections, it shall be, and it is the responsibility of the Contractor to install and connect such articles.

END OF SECTION 01 11 13

SECTION 01 21 16 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

B. Types of allowances include the following:

1. Lump-sum allowances.
2. Quantity allowances.
3. Contingency allowances.

1.3 DEFINITIONS

A. Allowance: A quantity of work or dollar amount included in the Contract, established in lieu of additional requirements, used to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.

1.4 SELECTION AND PURCHASE

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

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

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

1.5 ACTION SUBMITTALS

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

1.6 INFORMATIONAL SUBMITTALS

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

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

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

1.7 LUMP-SUM ALLOWANCES

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

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

C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.

1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.8 UNIT-COST ALLOWANCES

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

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

C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.

1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.9 CONTINGENCY ALLOWANCES

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

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

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

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

1.10 ADJUSTMENT OF ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, required maintenance materials, and similar margins.

1. Include installation costs in purchase amount only where indicated as part of the allowance.
2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other markups.
3. Submit substantiation of a change in scope of Work, if any, claimed in Change Orders related to unit-cost allowances.
4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

B. Submit claims for increased costs due to a change in the scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.

1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of Work has changed from what could have been foreseen from information in the Contract Documents.
2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - EXECUTION

2.1 EXAMINATION

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

2.2 PREPARATION

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

2.3 SCHEDULE OF ALLOWANCES

A. General Contingency Allowance

1. Include in the Base Bid a Lump Sum General Contingency Allowance of $25,000.00.
2. Include in the Base Bid a Lump Sum Contingency Allowance of $8,000.00. This is for the 12’ x 24’ metal storage building.

END OF SECTION 01 21 16

SECTION 01 21 46 – WEATHER DELAYS

PART 1 - GENERAL

1.1 EXTENSION OF CONTRACT TIME

A. If the basis exists for an extension of time in accordance with paragraph 8.3 of the Conditions, an extension of time on the basis of weather may be granted only for the number of Weather Delay Days in excess of the number of days listed as the Standard Baseline for that month.

1.2 STANDARD BASELINE FOR AVERAGE CLIMATIC RANGE

A. The Owner has reviewed weather data available from the National Oceanic and Atmospheric Administration and determined a Standard Baseline of average climatic range for the State of Tennessee.

B. Standard Baseline shall be regarded as the normal and anticipatable number of calendar days for each month during which construction activity shall be expected to be prevented and suspended by cause of adverse weather. Suspension of construction activity for the number of days each month as listed in the Standard Baseline is included in the Work and is not eligible for extension of Contract Time.

C. Standard Baseline is as follows:

Jan - 12
Feb - 11
Mar - 8
Apr - 7
May - 7
Jun - 6
Jul - 7
Aug - 5
Sep - 4
Oct - 5
Nov - 6
Dec - 11

1.3 ADVERSE WEATHER AND WEATHER DELAY DAYS

A. Adverse Weather is defined as the occurrence of one or more of the following conditions which prevents exterior construction activity or access to the site within twenty-four (24) hours:

B. Precipitation (rain, snow, or ice) in excess of one-tenth inch (0.10") liquid measure

C. Temperatures which do not rise above that specified for the day's construction activity by 10: 00 a.m., if any is specified.

D. Sustained wind in excess of twenty-five (25) m.p.h.

E. Standing snow in excess of one inch (1.00")

F. Adverse Weather may include, if appropriate, "dry-out" or "mud" days when all the following conditions are met:

1. For rain days above the standard baseline.
2. Only if there is a hindrance to site access or sitework, such as excavation, backfill, and footings.
3. At a rate no greater than 1 make-up day for each day or consecutive days of rain beyond the standard baseline that total 1.0 inch or more, liquid measure, unless specifically recommended otherwise by the Designer.
4. A Weather Delay Day may be counted if adverse weather prevents work on the project for fifty percent (50%) or more of the contractor's scheduled work, including a weekend day or holiday if Contractor has scheduled construction activity that day.

1.4 DOCUMENTATION AND SUBMITTAL

A. Submit daily jobsite work logs showing which and to what extent construction activities have been affected by weather on a monthly basis.

B. Submit actual weather data to support claim for time extension obtained from nearest NOAA weather station or other independently verified source approved by Designer at beginning of project.

C. Use Standard Baseline data provided in this Section when documenting actual delays due to weather in excess of the average climatic range.

D. Organize claim and documentation to facilitate evaluation on a basis of calendar month periods and submit in accordance with the procedures for claims established in paragraph 4.3 of the Conditions.

E. If an extension of the Contract Time is appropriate, it shall be affected in accordance with the provisions of Article 7 of the Conditions, and the applicable General Requirements.

END OF SECTION 01 21 46

SECTION 01 23 00 - ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include, as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation, whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.

C. Execute accepted alternates under the same conditions as other Work of the Contract.

D. Schedule: Part 2.1 "Schedule of Alternates" Article is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - EXECUTION

2.1 Schedule of Alternates

A. ADD Alternate No. 1: LED Lighting
   1. Coordinate with sheet E2.1 for LED lighting notes. Replace existing fixture with LED lighting fixtures. LED lighting for Pharmacy 110 should be included in base bid.

B. ADD Alternate No. 2: Ceiling Insulation
   1. Provide and install 4" batt insulation above the ceiling throughout the building for energy efficiency.

END OF SECTION 01 23 00

SECTION 01 25 00 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required to meet other Project requirements but may offer advantages to Contractor or Owner.

1.4 ACTION SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Documentation: Show compliance with requirements for substitutions and the following as applicable:

a. Statement indicating why specified product or fabrication, or installation method cannot be provided, if applicable.
b. Coordination of information, including a list of changes or revisions needed to other parts of the work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size,

durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from applicable code organization.
j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within fifteen (15) days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within fifteen (15) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.

    a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
    b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than fifteen (15) days prior to time required for preparation and review of related submittals.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Requested substitution provides sustainable design characteristics that specified product provided.
c. Substitution request is fully documented and properly submitted.
d. Requested substitution will not adversely affect Contractor's construction schedule.
e. Requested substitution has received necessary approvals of authorities having jurisdiction.
f. Requested substitution is compatible with other portions of the work.
g. Requested substitution has been coordinated with other portions of the work.
h. Requested substitution provides specified warranty.
i. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Architect will consider requests for substitution if received within thirty (30) days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Architect.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include

compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

b. Requested substitution does not require extensive revisions to the Contract Documents.
c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
d. Substitution request is fully documented and properly submitted.
e. Requested substitution will not adversely affect Contractor's construction schedule.
f. Requested substitution has received necessary approvals of authorities having jurisdiction.
g. Requested substitution is compatible with other portions of the work.
h. Requested substitution has been coordinated with other portions of the work.
i. Requested substitution provides specified warranty.
j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

END OF SECTION 01 25 00

SECTION 01 26 63 – CHANGE ORDER PROCEDURES

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Promptly implement change order procedures.

1. Provide full written data required to evaluate changes.
2. Maintain detailed records of work done on a time-and-material / force account basis.
3. Provide full documentation to Architect on request.

B. Designate in writing the member of Contractor's organization:

1. Who is authorized to accept changes in the work.
2. Who is responsible for informing others in the Contractor's employ of the authorization of changes in the work.

C. Owner will designate in writing the person who is authorized to execute Change Orders.

1.2 RELATED REQUIREMENTS

A. Agreement: The amounts of established unit prices.

B. Conditions of the Contract:

1. Methods of determining cost or credit to Owner resulting from changes in Work made on a time and material basis.
2. Contractor's claims for additional costs.

C. Specification Section 01 29 76 – Payment Procedures

1.3 DEFINITIONS

A. Change Orders: See General Conditions

B. Architect's Supplemental Instructions: A written order, instructions, or interpretations, signed by Architect making minor changes in the Work not involving a change in Contract Sum or Contract Time.

1.4 PRELIMINARY PROCEDURES

A. Owner or Architect may initiate changes by submitting a Proposal Request to Contractor. Request will include:

1. Detailed description of the Change, Products, and location of the change in the Project.
2. Supplementary or revised Drawings and Specifications.
3. The projected time span for making the change and a specific statement as to whether overtime work is, or is not, authorized.
4. A specified period of time during which the requested price will be considered valid.
5. Such request is for information only, and is not an instruction to execute the changes, nor to stop Work in progress.

B. On request, provide additional data to support time and cost computations:

1. Labor required.
2. Equipment required.
3. Products required:
    a. Recommended source of purchase and unit cost.
    b. Quantities required.
4. Taxes, insurance, and bonds.
5. Credit for work deleted from Contract, similarly documented.
6. Overhead and profit.
7. Justification for any change in Contract Time.

C. Support each claim for additional costs, and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal, plus additional information.

1. Name of the Owner's authorized agent who ordered the work, and date on the order.
2. Dates and times work was performed, and by whom.
3. Time record, summary of hours worked, and hourly rates paid.
4. Receipts and invoices for:
    a. Equipment used, listing dates and times of use.
    b. Products used, listing of quantities.
    c. Subcontracts.

1.5 PREPARATION OF CHANGE ORDERS

A. Architect will prepare each Change Order.

B. Form: Change order: AIA Document G701 – 2001 Change Order.

C. Change Order will describe changes in the Work, both deletions, with attachments of revised Contract Documents to define details of the change.

D. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

1.6 LUMP-SUM / FIXED PRICE CHANGE ORDER

A. Content of Change Orders will be based on, either:

1. Architect's Proposal Request and Contractor's responsive Proposal as mutually agreed between Owner and Contractor.
2. Contractor's Proposal for a change, as recommended by Architect.

B. Owner and Architect will sign and date the Change Order as authorization for the Contractor to proceed with the changes.

C. Contractor may sign and date the Change Order to indicate agreement with the terms therein.

1.7 UNIT PRICE CHANGE ORDER

A. Content of Change Orders will be based on, either:

1. Architect's definition of the scope of the required changes.
2. Contractor's Proposal for a change, as recommended by Architect.
3. Survey of complete work.

B. The amount of the unit prices to be:

1. Those stated in the Agreement.
2. Those mutually agreed upon between Owner and Contractor.

C. When quantities of each of the items affected by the Change Order can be determined prior to start of the work:

1. Owner and Architect will sign and date the Change Order as authorization for Contractor to proceed with the changes.
2. Contractor may sign and date the Change Order to indicate agreement with the terms therein.

D. When quantities of the items cannot be determined prior to start of the work:

1. Architect or Owner will issue a construction change authorization directing Contractor to proceed with the change on this basis of unit prices and will cite the applicable unit prices.
2. At completion of the change, Architect will determine the cost of such work based on the unit prices and quantities used. Contractor shall submit documentation to establish the number of units of each item and any claims for a change in Contract Time.
3. Architect will sign and date the Change Order to indicate their agreement with the terms therein.
4. Owner and Contractor will sign and date the Change Order to indicate their agreement with the terms therein.

1.8 CORRELATION WITH CONTRACTOR'S SUBMITTALS

A. Periodically revise Request for Payment forms to record each change as a separate item of Work, and to record the adjusted Contract Sum.

B. Periodically revise the construction Schedule to reflect each change in Contract Time.

C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

END OF SECTION 01 26 63

SECTION 01 29 00 – PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Submit Applications for Payment to Architect in accordance with the schedule established by Conditions of the Contract and Agreement between Owner and Contractor.

1.2 FORMAT AND DATA REQUIRED

A. Submit applications typed on AIA Document G702 (or other approved format), Application for Payment, with itemized data typed on 8-1/2" x 11" white paper continuation sheets.

B. Provide itemized data on continuation sheet. Format, schedules, line items and values: Those of the Schedule of Values accepted by Architect.

1.3 PREPARATION OF APPLICATION FOR EACH PROGRESS PAYMENT

A. Application Form:

1. Fill in required information, including that for Change Order executed prior to date of submittal of application.
2. Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.
3. Execute certification with signature of a responsible officer of Contractor's firm.

B. Continuation Sheets:

1. Fill in total list of all scheduled component items of Work, with item number and scheduled dollar value for each item.
2. Fill in dollar value in each column for each scheduled line item when work has been performed or products stored.
3. Round off values to nearest dollar or as specified for Schedule of Values.
4. List each Change Order executed prior to date of submission, at the end of the continuation sheets.
5. List by Change Order Number, and description, as for an original component item of work.

1.4 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

A. When the Owner or the Architect requires substantiating data, Contractor shall submit suitable information, with a cover letter identifying:

1. Project

2. Application number and date
3. Detailed list of enclosures
4. For stored products:
    a. Item number and identification as shown on application.
    b. Description of specific material.

B. Submit one copy of data and cover letter for each copy of application.

1.5 PREPARATION OF APPLICATION FOR FINAL PAYMENT

A. Fill in Application form as specified for progress payments.

B. Use continuation sheet for presenting the final statement of accounting as specified in Specification Section 01 77 00 – Closeout Procedures.

1.6 SUBMITTAL PROCEDURE

A. Submit Applications for Payment to Architect at the times stipulated in the Agreement.

B. Number: Five copies of each Application.

C. When the Architect finds Application properly completed and correct, he will transmit certificate for payment to Owner, with copy to Contractor.

END OF SECTION 01 29 00

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project, including, but not limited to, the following:

1. General coordination procedures.
2. RFIs.
3. Digital project management procedures.
4. Project meetings.

B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.

1.3 DEFINITIONS

A. RFI: Request for Information. Request from Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.

B. Key Personnel Names: Within fifteen (15) days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at the Project site. Identify individuals and their duties and responsibilities, list addresses, cellular telephone numbers, and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office. Keep list current at all times.

1.5 GENERAL COORDINATION PROCEDURES

A. Coordination: Contractor shall coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Coordination: Contractor shall coordinate construction operations with those of other subcontractors and entities to ensure efficient and orderly installation of each part of the Work.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components with other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

C. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their work is required.

D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

1.6 REQUEST FOR INFORMATION (RFI)

A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
   1. Coordinate and submit RFIs in a prompt manner to avoid delays.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

   1. Project name.
   2. Project number.
   3. Date
   4. Name of Contractor
   5. Name of Architect
   6. RFI number, numbered sequentially.
   7. RFI subject.
   8. Specification Section number and title and related paragraphs, as appropriate.
   9. Drawing number and detail references, as appropriate.
   10. Field dimensions and conditions, as appropriate.
   11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
   12. Contractor's signature.
   13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

       a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Forms: AIA Document G716 or Software-generated form with substantially the same content as indicated above, acceptable to Architect.

   1. Attachments shall be electronic files in PDF format.

D. Architect’s Action: Architect will review each RFI, determine action required, and respond. Allow seven (7) working days for Architect's response for each RFI. RFIs received by Architect after 1: 00 p.m. will be considered as received the following working day.

   1. The following Contractor-generated RFIs will be returned without action:

      a. Requests for approval of submittals.
      b. Requests for approval of substitutions.
      c. Requests for approval of Contractor's means and methods.
      d. Requests for coordination information already indicated in the Contract Documents.
      e. Requests for adjustments in the Contract Time or the Contract Sum.
      f. Requests for interpretation of Architect's actions on submittals.
      g. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect additional information.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Specification Section 01 26 63 – Change Orders Procedures.

    a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within ten (10) days of receipt of the RFI response.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log bi-weekly. Include the following:

1. Project name.
2. Name and address of Contractor.
3. Name and address of Architect.
4. RFI number, including RFIs that were returned without action or withdrawn.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's response was received.
8. Identification of related Minor Change in the work, Construction Change Directive, and Proposal Request, as appropriate.
9. Identification of related Field Order, work Change Directive, and Proposal Request, as appropriate.

F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven (7) days if Contractor disagrees with response.

1.7 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Entity responsible for conducting meetings will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including three (3) days of the meeting.

B. Preconstruction Conference: Architect will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than fifteen (15) days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other

concerned parties shall attend the conference. Participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the work.

2. Agenda: Discuss items of significance that could affect progress, including the following

    a. Responsibilities and personnel assignments.
    b. Tentative construction schedule.
    c. Phasing.
    d. Critical work sequencing and long lead items.
    e. Designation of key personnel and their duties.
    f. Lines of communications.
    g. Procedures for processing field decisions and Change Orders.
    h. Procedures for RFIs.
    i. Procedures for testing and inspecting.
    j. Procedures for processing Applications for Payment.
    k. Distribution of the Contract Documents.
    l. Submittal procedures.
    m. Sustainable design requirements.
    n. Preparation of Record Documents.
    o. Use of the premises and existing building.
    p. Work restrictions.
    q. Working hours.
    r. Owner's occupancy requirements.
    s. Responsibility for temporary facilities and controls.
    t. Procedures for disruptions and shutdowns.
    u. Construction waste management and recycling.
    v. Parking availability.
    w. Office, work, and storage areas.
    x. Equipment deliveries and priorities.
    y. Security.
    z. Progress cleaning.

3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at the Project site before each construction activity when required by other Sections and when required for coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

    a. Contract Documents.
    b. Options.
    c. Related RFIs.

d. Related Change Orders.
e. Purchases.
f. Deliveries.
g. Submittals.
h. Sustainable design requirements.
i. Review of mockups.
j. Possible conflicts.
k. Compatibility requirements.
l. Time schedules.
m. Weather limitations.
n. Manufacturer's written instructions.
o. Warranty requirements.
p. Compatibility of materials.
q. Acceptability of substrates.
r. Temporary facilities and controls.
s. Space and access limitations.
t. Regulations of authorities having jurisdiction.
u. Testing and inspecting requirements.
v. Installation procedures.
w. Coordination with other work.
x. Required performance results.
y. Protection of adjacent work.
z. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than thirty (30) days prior to the scheduled date of Substantial Completion.

1. Conduct the conference to review requirements and responsibilities related to Project closeout.
2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with the Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:

a. Preparation of Record Documents.
b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.

c. Procedures for completing and archiving web-based Project software site data files.
d. Submittal of written warranties.
e. Requirements for preparing operations and maintenance data.
f. Requirements for delivery of material samples, attic stock, and spare parts.
g. Requirements for demonstration and training.
h. Preparation of Contractor's punch list.
i. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
j. Submittal procedures.
k. Responsibility for removing temporary facilities and controls.

4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

E. Progress Meetings: Conduct progress meetings at regular monthly intervals.

1. Coordinate dates of meetings with preparation of payment requests.
2. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with the Project and authorized to conclude matters relating to the Work.
3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

1) Review schedule for next period.

b. Review present and future needs of each entity present, including the following:
1) Sequence of operations.
2) Status of submittals.
3) Deliveries.
4) Off-site fabrication.
5) Access.
6) Site use.
7) Temporary facilities and controls.
8) Progress cleaning.
9) Quality and work standards.
10) Status of correction of deficient items.
11) Field observations.

12) Status of RFIs.
13) Status of Proposal Requests.
14) Pending changes.
15) Status of Change Orders.
16) Documentation of information for payment requests.

4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting, where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

END OF SECTION 01 31 00

SECTION 01 32 16 – CONSTRUCTION PROGRESS SCHEDULE

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Promptly after award of the Contract, prepare and submit to Architect estimated construction progress schedules for the Work, with sub-schedules of related activities which are essential to its progress.

B. Submit revised progress schedules periodically.

1.2 FORM OF SCHEDULES

A. Prepare schedules in the form of a horizontal bar chart.

B. Provide separate horizontal bars for each trade or operation.

C. Horizontal time scale: Identify the first workday of each week.

D. Scale and spacing: To allow space for notations and future revisions.

E. Minimum sheet size: 8-1/2" x 11"

F. Format of listings: The chronological order of the start of each item of work.

G. Identification of listings: By major specification section numbers.

1.3 CONTENT OF SCHEDULES

A. Construction Progress Schedule:

1. Show the complete sequence of construction by activity.

B. Show the dates for the beginning and completion of each major element of construction. Where applicable, specifically list:

1. Clearing.
2. Excavation.
3. Various installations.
4. Subcontractor work.
5. Equipment installation.
6. Landscaping.

C. Show projected percentage of completion for each item, as of the first day of each month.

D. Submittals Schedule for Shop Drawings, Product data and samples. Show:

1. The dates for Contractor's submittals.
2. The dates approved submittals will be required for the Architect.

E. Prepare and submit sub-schedules for each separate stage of work.

F. Provide sub-schedules to define critical portions of prime schedules.

1.4 PROGRESS REVISIONS

A. Indicate progress of each activity to date of submissions.

B. Show changes occurring since previous submission of schedule:

1. Major changes in scope.
2. Activities modified since previous submission.
3. Revised projections of progress and completion.
4. Other identifiable changes.

C. Provide a narrative report as needed to define:

1. Problem areas, anticipated delays, and the impact on the schedule.
2. Corrective action recommended, and its effect.
3. The effect of changes on the schedules of other subcontractors.

1.5 SUBMISSIONS

A. Submit initial schedules within fifteen (15) days after award of Contract.

B. Engineer will review schedules and return review copy within ten (10) days after receipt.

C. If required, resubmit within seven (7) days after return of review copy.

D. Submit revised progress schedules with each application for payment.

E. Submit the number of opaque reproductions which the Contractor requires, plus two copies which will be retained by the Architect.

1.6 DISTRIBUTION

A. Distribute copies of the reviewed schedules to:

1. Job site files.
2. Subcontractors.
3. Other concerned parties.

B. Instruct recipients to report promptly to the Contractor, in writing, any problems anticipated by the projections shown in the schedules.

END OF SECTION 01 32 16

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

B. Related Requirements:

1. Specification Section 01 29 00 – Payment Procedures for submitting Applications for Payment and the schedule of values.
2. Specification Section 01 31 00 – Project Management and Coordination for submitting coordination drawings and subcontract list and for requirements for web-based Project software.
3. Specification Section 01 32 16 – Construction Progress Schedule for submitting schedules and reports, including Contractor's construction schedule.
4. Specification Section 01 40 00 – Quality Requirements for submitting test and inspection reports, and schedule of tests and inspections.
5. Specification Section 01 77 00 – Closeout Procedures for submitting closeout submittals and maintenance material submittals.
6. Specification Section 01 78 23 – Operation and Maintenance Data for submitting operation and maintenance manuals.
7. Specification Section 01 78 39 – Project Record Documents for submitting record Drawings, record Specifications, and record Product Data.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.4 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal Schedule: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal Schedule: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule as required to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:

    a. Scheduled Date for First Submittal.
    b. Specification Section Number and Title.
    c. Submittal Category: Action; Informational.
    d. Name of Subcontractor.
    e. Description of the work covered.
    f. Scheduled date for Architect's Final Release or Approval.
    g. Scheduled Dates for Purchasing.
    h. Scheduled Date of Fabrication.
    i. Scheduled Dates for Installation.
    j. Activity or Event Number.

1.5 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Architect.
4. Name of Construction Manager.
5. Name of Contractor.
6. Name of firm or entity that prepared submittal.
7. Names of subcontractors, manufacturer, and supplier.
8. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier and alphanumeric suffix for resubmittals.
9. Category and type of submittal.

10. Submittal purpose and description.
11. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
12. Drawing number and detail references, as appropriate.
13. Indication of full or partial submittal.
14. Location(s) where product is to be installed, as appropriate.
15. Other necessary identification.
16. Remarks.
17. Signature of transmitter.

B. Options: Identify options requiring selection by Architect.

C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

D. Paper Submittals:

1. Place a permanent label or title block on each submittal item for identification; include name of firm or entity that prepared submittal.
2. Provide a space approximately 6 by 8 inches (150 by 200 mm) on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Action Submittals: Submit three (3) paper copies of each submittal unless otherwise indicated. Architect will return two (2) copies.
4. Informational Submittals: Submit two (2) paper copies of each submittal unless otherwise indicated. Architect will not return copies.
5. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
6. Transmittal for Submittals: Assemble each submittal individually and appropriately for transmittal and handling.

E. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

F. Submittals Utilizing Web-Based Project Software: Prepare submittals as PDF files or other format indicated by Project management software.

1.6 SUBMITTAL PROCEDURES

A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Email: Prepare submittals as PDF package and transmit to Architect by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Architect.

    a. Architect will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.

2. Web-Based Project Management Software: Prepare submittals in PDF form, and upload to web-based Project management software website. Enter required data in web-based software site to fully identify submittal.
3. Paper: Prepare submittals in paper form and deliver to Architect.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections, so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect’s receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow fifteen (15) days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow fifteen (15) days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow twenty-one (21) days for initial review of each submittal.
5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow fifteen (15) days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.

a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.

D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block, and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

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

1.7 SUBMITTAL REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

a. Manufacturer's catalog cuts.
b. Manufacturer's product specifications.
c. Standard color charts.
d. Statement of compliance with specified referenced standards.
e. Testing by recognized testing agency.
f. Application of testing agency labels and seals.
g. Notation of coordination requirements.
h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

a. Wiring diagrams that show factory-installed wiring.
b. Printed performance curves.
c. Operational range diagrams.
d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before Shop Drawings, and before or concurrently with Samples.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

    a. Identification of products.
    b. Schedules.
    c. Compliance with specified standards.
    d. Notation of coordination requirements.
    e. Notation of dimensions established by field measurement.
    f. Relationship and attachment to adjoining construction clearly indicated.
    g. Seal and signature of professional engineer if specified.

2. Paper Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm)**,** but no larger than 30 by 42 inches (750 by 1067 mm).

    a. Two (2) opaque (bond) copies of each submittal. Architect will return one (1) copy.
    b. Three (3) opaque copies of each submittal. Architect will retain two (2) copies; remainder will be returned.

C. Samples: Submit Samples for review of type, color, pattern, and texture for a check of these characteristics with other materials.

1. Transmit Samples that contain multiple, related components, such as accessories together in one submittal package.
2. Identification: Permanently attach label on unexposed side of Samples that includes the following:

    a. Project name and submittal number.
    b. Generic description of Sample.
    c. Product name and name of manufacturer.
    d. Sample source.
    e. Number and title of applicable Specification Section.
    f. Specification paragraph number and generic name of each item.

3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics and identification information for record.
4. Web-Based Project Management Software: Prepare submittals in PDF form, and upload to web-based Project software website. Enter required data in web-based software site to fully identify submittal.
5. Paper Transmittal: Include paper transmittal, including complete submittal information indicated.
6. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

7. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units, showing the full range of colors, textures, and patterns available.
   a. Number of Samples: Submit one (1) full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

8. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured, and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

   a. Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
   b. If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three (3) sets of paired units that show approximate limits of variations.

D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

   1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
   2. Manufacturer and product name, and model number if applicable.
   3. Number and name of room or space.
   4. Location within room or space.

E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.

G. Certificates:

1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
2. Installer Certificates: Submit written statements on manufacturer's letterhead, certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead, certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
4. Material Certificates: Submit written statements on manufacturer's letterhead, certifying that material complies with requirements in the Contract Documents.
5. Product Certificates: Submit written statements on manufacturer's letterhead, certifying that product complies with requirements in the Contract Documents.
6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of AWS B2.1 / B2.1M on AWS forms. Include names of firms and personnel certified.

H. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for substrate preparation and primers required.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

    a. Name of evaluation organization.
    b. Date of evaluation.
    c. Time period when report is in effect.
    d. Product and manufacturers' names.
    e. Description of product.
    f. Test procedures and results.

g. Limitations of use.

1.8 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit three (3) paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

1.9 CONTRACTOR'S REVIEW

A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

1.10 ARCHITECT'S REVIEW

A. Action Submittals: Architect will review each submittal, indicate corrections or revisions required, and return.

1. PDF Submittals: Architect will indicate, via markup on each submittal, the appropriate action.

2. Paper Submittals: Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.

3. Submittals by Web-Based Project Management Software: Architect will indicate, on Project management software website, the appropriate action.

B. Informational Submittals: Architect will review each submittal and will not return it or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Architect will return without review submittals received from sources other than Contractor.

F. Submittals not required by the Contract Documents will be returned by Architect without action.

END OF SECTION 01 33 00

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

C. Mockups: Full-size physical assemblies that are constructed either as freestanding temporary built elements or as part of permanent construction. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation

tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on the project site, consisting of multiple products, assemblies, and subassemblies.

D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the work, to verify performance or compliance with specified criteria.

E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

F. Source Quality-Control Tests and Inspections: Tests and inspections that are performed at the source (e.g., plant, mill, factory, or shop).

G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

I. Installer / Applicator / Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade or trades.

J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five (5) previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

A. Referenced Standards: If compliance with two or more standards or requirements is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for clarification before proceeding.

B. 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 Architect for a decision before proceeding.

1.5 INFORMATIONAL SUBMITTALS

A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.

B. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility submitted to authorities having jurisdiction before starting work on the following systems:

1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality assurance plan prepared by the Architect.
2. Primary wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality assurance plan prepared by the Architect.

C. Testing Agency Qualifications: For testing agencies specified in "1.8 – QUALITY ASSURANCE" Article below to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

D. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Entity responsible for performing tests and inspections.
3. Description of test and inspection.
4. Identification of applicable standards.
5. Identification of test and inspection methods.
6. Number of tests and inspections required.
7. Time schedule or time span for tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

1.6 CONTRACTOR'S QUALITY-CONTROL PLAN

A. Quality-Control Plan, General: Submit quality-control plan within ten (10) days of Notice to Proceed, and not less than five (5) days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor’s construction schedule.

B. Quality-Control Personnel Qualifications: Engage qualified personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.

1. Project quality-control manager may also serve as Project Superintendent.

C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:

1. Contractor-performed tests and inspections, including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections. Distinguish source quality-control tests and inspections from field quality-control tests and inspections.
2. Special inspections required by authorities having jurisdiction.

E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring the work into compliance with standards of workmanship established by Contract requirements and approved mockups.

F. Monitoring and Documentation: Maintain testing and inspection reports, including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming Work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.7 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, telephone number, and email address of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample-taking and testing and inspection.
11. Comments or professional opinion on whether tested or inspected work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of technical representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement of whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement of whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the work.

1.8 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those

performed for installations of the system, assembly, or product that is similar in material, design, and extent to those indicated for this Project.

F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged in the activities indicated.

1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

G. Testing and Inspecting Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented in accordance with ASTM E329, and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect, demonstrate, repair, and perform service on installations of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following Contractor's responsibilities, including the following:

1. Contractor responsibilities include the following:

a. Provide test specimens representative of proposed products and construction.
b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
e. When testing is complete, remove test specimens, assemblies, and mockups, do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect with copy to Contractor.

Interpret tests and inspections, and state in each report whether tested and inspected Work complies with or deviates from the Contract Documents.

K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
   1. Build mockups in location indicated or, if not indicated, as directed by Architect.
   2. Notify Architect seven (7) days in advance of dates and times when mockups will be constructed.
   3. Employ supervisory personnel who will oversee mockup construction. Employ workers who will be employed during the construction at the Project.
   4. Demonstrate the proposed range of aesthetic effects and workmanship.
   5. Obtain Architect's approval of mockups before starting corresponding work, fabrication, or construction.

      a. Allow seven (7) days for initial review and each re-review of each mockup.

   6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
   7. Demolish and remove mockups when directed unless otherwise indicated.

1.9 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

   1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform.
   2. Payment for these services will be made from testing and inspection allowances as authorized by Change Orders.
   3. Costs for retesting and reinspecting construction that replaces or is necessitated by Work that failed to comply with the Contract Documents will be charged to Contractor**,** and the Contract Sum will be adjusted by Change Order.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not.

   1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
   2. Where services are indicated as Contractor’s responsibility, engage a qualified testing agency to perform these quality-control services.

      a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

3. Notify testing agencies at least twenty-four (24) hours in advance of time when Work that requires testing or inspection will be performed.
4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Specification Section 01 33 00 – Submittal Procedures.

D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the work, and submittal of written reports.

E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced work that failed to comply with the Contract Documents.

F. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

G. Associated Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.

5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspection equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's Construction Schedule. Update and submit with each Application for Payment.

1. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.10 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

1.11 REPAIR AND PROTECTION

A. General: On completion of testing, inspection, sample-taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching.

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

SECTION 01 42 00 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 DEFINITIONS

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

B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "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."

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.

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

G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.

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

I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

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

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS, NAMES, AND ADDRESSES OF ORGANIZATIONS

A. (AASHTO)

1. American Association of State Highway and Transportation Officials
   444 North Capitol Street,
   Washington, D.C. 20001

B. ANSI)

1. American National Standards Institute
   (Formerly American Standards Association - ASA)
   1430 Broadway
   New York, New York 10018

C. (AREA)

1. American Railroad Engineering Association
   2000 "L" Street, N.W.
   Washington, D.C. 20036

D. (ASCE)

1. American Society of Civil Engineers
   345 East 47th Street
   New York, New York 10017

E. (ASME)

1. American Society of Mechanical Engineers
   345 East 47th Street
   New York, New York 10017

F. (ASTM)

1. American Society of Testing and Materials
   1916 Race Street
   Philadelphia, Pennsylvania 19103

G. (AWWA)
   1. American Water Works Association
      6666 W. Quincy Avenue
      Denver, Colorado 80235

H. (FHWA)
   1. Federal Highway Administration
      Federal Building, U. S. Courthouse
      Nashville, Tennessee 37202

I. (FSS)
   1. Federal Specification and Standards
      General Services Administration
      Specifications and Consumer Information
      Distribution Section (WFSIS)
      Washington Navy Yard, Building 197
      Washington, D.C. 20407

J. (NACE)
   1. National Association of Coatings Engineers

K. (NCAC)
   1. 2002 North Carolina Accessibility Code with 2004 Amendments

L. (NIOSH)
   1. National Institute for Occupational Health and Safety

M. (SSPC)
   1. Steel Structures Painting Council

N. (TDOEC)
   1. Tennessee Department of Environment and Conservation
      TERRA Building
      150 9th Avenue North
      Nashville, Tennessee 37219

O. (TDOT)
   1. Tennessee Department of Transportation
      James K. Polk Building
      505 Deaderick Street
      Nashville, Tennessee 37219

END OF SECTION 01 42 00

SECTION 01 45 29 – TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Contractor will employ and pay for the services of an Independent Testing Laboratory to perform specified testing.

1. Contractor shall cooperate with the laboratory to facilitate the execution of its required services.
2. Employment of the laboratory shall in no way relieve the contractor's obligations to perform the work of the contract.
3. The Independent Laboratory shall be approved by the Engineer.

1.2 RELATED REQUIREMENTS

A. Conditions of the contract: Inspections and testing required by laws, ordinances, rules, regulations, orders, or approvals of public authorities.

B. Respective sections of specifications: Certification of products.

C. Testing laboratory inspection, sampling and testing is required for, but not necessarily limited to:

1. Earthwork
2. Pavement
3. Waterline construction
4. Concrete
5. Coating

1.3 LABORATORY DUTIES

A. Cooperate with engineer and contractor; provide qualified personnel after due notice.

B. Perform specified inspections, sampling and testing of materials and methods of construction:

1. Comply with specified standards.
2. Ascertain compliance of materials with requirements of Contract Documents.

C. Promptly notify engineer and contractor of observed irregularities or deficiencies of work or products.

D. Promptly submit written report of each test and inspection; one copy each to engineer, Owner, contractor, and one copy to record documents file. Each report shall include:

1. Date issued.
2. Project title and contract number.
3. Testing laboratory name, address, and telephone number.
4. Name and signature of laboratory inspector.
5. Date and time of sampling inspection.
6. Record of temperature and weather conditions.
7. Date of test.
8. Identification of product and specification section.
9. Location of sample or test in the Project.
10. Type of inspection or test.
11. Results of tests and compliance or lack thereof with contract documents.
12. Interpretation of test results, when requested by engineer.

E. Perform additional tests as required by engineer or the Owner.

F. Limitations of Authority of Testing Laboratory: Laboratory is not authorized to:

1. Release, revoke, alter or enlarge on requirements of contract documents.
2. Approve or accept any portion of the work.
3. Perform any duties of the contractor.

1.4 CONTRACTOR'S RESPONSIBILITIES

A. Cooperate with laboratory personnel, provide access to work, to assist in testing operations as required.

B. Secure and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used and which require testing.

C. Provide to the laboratory the preliminary design mix proposed to be used for concrete, and other materials mixes which require pre-qualification testing by the testing laboratory.

D. Furnish copies of products' test reports as required.

E. Furnish incidental labor and facilities:

1. To provide access to work to be tested
2. To obtain and handle samples at the project site or at the source of the product to be tested.
3. To facilitate inspections and tests.
4. For storage and curing of test samples.

F. Notify laboratory sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.

G. Employ and pay for the services of a separate, equally qualified independent testing laboratory to perform additional inspections, sampling and testing required:

1. For the contractor's convenience.
2. When initial tests indicate work does not comply with contract documents.

H. Make arrangements with laboratory and pay for additional samples and test required for Contractor’s convenience.

I. Responsible for other testing, which is to be supplied by contractor.

J. Provide other testing, which is to be supplied by contractor.

END OF SECTION 01 45 29

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.3 USE CHARGES

A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's forces, Architect, testing agencies, and authorities having jurisdiction.

B. Water Service: Contractor may use water service at no charge as long as the privilege is not abused. Pay all tap fee and permit cost.

C. Electric Power Service: Contractor will pay electric power service use charges for electricity used by all entities for construction operations.

D. Gas Service: Contractor to pay for tap fee and permit cost. All gas usage shall be paid for by Owner unless the privilege is abused.

1.4 INFORMATIONAL SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

B. Erosion- and -Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

C. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage, including delivery, handling, and storage provisions for materials subject to water absorption or water damage, discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water damaged Work.

1. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.

1.5 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

C. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC / ANSI A117.1.

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

1. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect, and construction personnel office activities.

B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

1. Store combustible materials apart from building.

2.2 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment:

1. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of eight (8) at each return air grille in system and remove at end of construction and clean HVAC system as required in Specification Section 01 77 00 – Closeout Procedures.

C. Air Filtration Units: HEPA primary and secondary filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the work. Relocate and modify facilities as required by progress of the work.

1. Locate facilities to limit site disturbance as specified in Specification Section 01 11 13 – Summary of Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.

1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.

C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.

D. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

E. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

F. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.

G. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

1. Connect temporary service to Owner's existing power source, as directed by Owner.

H. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Provide one telephone number for each field office.

1. At each telephone, post a list of important telephone numbers.

    a. Police and fire departments.
    b. Ambulance service.
    c. Contractor's home office.
    d. Architect's office.
    e. Engineers' offices.
    f. Owner's office.
    g. Principal subcontractors' field and home offices.

2. Provide superintendent with cellular telephone or portable two-way radio for use when away from field office.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Parking: Use designated areas of Owner's existing parking areas for construction personnel.

D. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

E. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.

F. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1. Comply with work restrictions specified in Specification Section 01 11 13 – Summary of Work.

B. Temporary Erosion and Sedimentation Control: Comply with requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from the project site during the course of the project.
4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

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

F. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and 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. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each workday.

H. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

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

J. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.

1. Prohibit smoking in construction areas.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection if required by local fire officials. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 MOISTURE AND MOLD CONTROL

A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.

B. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:

1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
2. Use permanent HVAC system to control humidity.
3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.

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

3.6 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

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

D. Termination and Removal: 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. Materials and facilities that constitute temporary facilities are property of Contractor.
2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Specification Section 01 77 00 – Closeout Procedures.

END OF SECTION 01 50 00

SECTION 01 56 00 - TEMPORARY BARRIERS

PART 1 - GENERAL

The General Conditions of the Contract and Supplementary General Conditions of the Contract of this specification are herein made a part of this section of the specifications. The Contractor and subcontractor shall carefully examine all drawings and all sections of the specifications so as to properly coordinate his work with the work of others.

1.1 REQUIREMENTS INCLUDED

A. Furnish, install, and maintain suitable barriers as required to prevent public entry, and to protect the work, existing facilities, trees, and plants from construction operations; remove when no longer needed, or at completion of work.

PART 2 - PRODUCTS

2.1 MATERIALS - GENERAL

A. Materials may be new or used, suitable for the intended purpose, but must not violate requirements of applicable codes and standards.

2.2 FENCING

A. Materials to Contractor's option, minimum fence height 6 feet.

2.3 BARRIERS

A. Materials to Contractor's option, as appropriate to serve required purpose.

PART 3 - EXECUTION

3.1 GENERAL

A. Install facilities of a neat and reasonable uniform appearance, structurally adequate for required purposes.

B. Maintain barriers during entire construction period.

C. Relocate barriers as required by progress of construction.

3.2 FENCES

A. Prior to start of work at the project site, install enclosure fence with suitably locked entrance gates.

B. Locate as shown on drawings.

3.3 TREE AND PLANT PROTECTION

A. Preserve and protect existing trees and plants at site which are designated to remain, and those adjacent to site.

B. Consult with Architect and remove agreed-on roots and branches which interfere with construction.

C. Employ qualified tree surgeon to remove, and to treat cuts.

D. Provide temporary barriers to a height of six feet, around each, or around each group, of trees and plants.

E. Protect root zones of trees and plants:

1. Do not allow vehicular traffic or parking.
2. Do not store materials or products.
3. Prevent dumping of refuse or chemically injurious materials or liquids.
4. Prevent puddling or continuous running water.

F. Carefully supervise excavating, grading, and filling, and subsequent construction operations, to prevent damage.

G. Replace, or suitably repair, trees and plants designated to remain which are damaged or destroyed due to construction operations.

3.4 REMOVAL

A. Completely remove barricades, including foundations, when construction has progressed to the point that they are no longer needed and when approved by the Engineer.

B. Clean and repair damage caused by installation, fill and grade areas of the site to required elevations and slopes, and clean the area.

END OF SECTION 01 56 00

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

1.3 DEFINITIONS

A. Products: Items obtained for incorporating into the work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

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. Salvaged items or items reused from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved through the 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. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

C. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. Published attributes and characteristics of basis-of-design product establish salient characteristics of products.

1.4 SUBMITTALS

A. Product List: Submit a list, in tabular form, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.

1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
2. Form: Tabulate information for each product under the following column headings:

a. Specification Section number and title.

b. Generic name used in the Contract Documents.

c. Proprietary name, model number, and similar designations.

d. Manufacturer's name and address.

e. Identification of items that require early submittal approval for scheduled delivery date.

3. Initial Submittal: Within fourteen (14) days after date of commencement of the work, submit six (6) copies of initial product list. Include a written explanation for omissions of data and for variations from Contract requirements.

a. At Contractor's option, initial submittal may be limited to product selections and designations that must be established early in Contract period.

4. Completed List: Within sixty (60) days after date of commencement of the work, submit six (6) copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
5. Architect's Action: Architect will respond in writing to Contractor within 15 days of receipt of completed product list. Architect's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Architect's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.

B. Substitution Requests: Submit three (3) copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use CSI Form 13.1A.
2. Documentation: Show compliance with the requirements for substitutions and the following, as applicable:

a. Statement indicating why specified material or product cannot be provided.

b. Coordination information, including a list of changes or modifications needed to other parts of the work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.

c. Detailed comparison of significant qualities of proposed substitution with those of the work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.

e. Samples, where applicable or requested.

f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.

g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

h. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.

i. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.

j. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven (7) days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

a. Form of Acceptance: Change Order

b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

C. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor, through Construction Manager, of approval or rejection of proposed comparable product request within fifteen (15) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.

    a. Form of Approval: As specified in Specification Section 01 33 00 – Submittal Procedures.

    b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.

D. Basis-of-Design Product Specification Submittal: Comply with requirements in Specification Section 01 33 00 – Submittal Procedures. Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.

2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store cementitious products and materials on elevated platforms.
5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.
8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.4 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.

1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Refer to Divisions included between 02 through 16 for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Specification Section 01 77 00 – Closeout Procedures.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. 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.
3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

B. Product Selection Procedures:

1. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2.2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
2. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
3. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.

    a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, 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, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

C. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution does not require extensive revisions to the Contract Documents.
2. Requested substitution is consistent with the Contract Documents and will produce indicated results.
3. Substitution request is fully documented and properly submitted.
4. Requested substitution will not adversely affect Contractor's Construction Schedule.
5. Requested substitution is compatible with other portions of the work.
6. Requested substitution provides specified warranty.
7. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

2.2 COMPARABLE PRODUCTS

A. Conditions: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require extensive revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

END OF SECTION 01 60 00

SECTION 01 60 10 – MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.1 The General Conditions of the Contract and Supplementary General Conditions of the Contract of this specification are herein made a part of this section of the specifications. The Contractor and subcontractor shall carefully examine all drawings and all sections of the specifications so as to properly coordinate his work with the work of others.

1.2 REQUIREMENTS INCLUDED

A. Materials and equipment incorporated into the work:

1. Conform to applicable specifications and standards.
2. Comply with size, make, type and quality specified, or as specifically approved in writing by the Architect.
3. Manufactured and Fabricated Products:

    a. Design, fabricate and assemble in accord with the best engineering and shop practices.
    b. Manufacture parts of duplicate units to standard sizes and gages, to be interchangeable.
    c. Two more items of the same kind shall be identical, by the same manufacturer.
    d. Products shall be suitable for service conditions.
    e. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.

4. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.3 REUSE OF EXISTING MATERIAL

A. Except as specifically indicated or specified, materials and equipment removed from the existing structure, if any, 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 that require off-site storage, restoration, or renovation. Pay all costs for such work.

1.4 MANUFACTURER'S INSTRUCTIONS

A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including two copies to Engineer.

B. Maintain one set of complete instructions at the job site during installation and until completion.

C. Handle, install, connect, clean, condition, and adjust products in strict accord with such instructions and in conformity with specified requirements.

1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Architect for further instructions.
2. Do not proceed with work without clear instructions.

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

1.5 TRANSPORTATION AND HANDLING

A. Arrange deliveries of products in accord with construction schedules, coordinate to avoid conflict with work and conditions at the site.

1. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that products are properly protected and undamaged.

B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

1.6 STORAGE AND PROTECTION

A. Store products in accord with manufacturer's instructions with seals and labels intact and legible.

1. Store products subject to damage by the elements in weather tight enclosures.
2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.

B. Exterior storage:

1. Store fabricated products above the ground, on blocking or skids prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.

2. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
3. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to ensure that products are maintained under specified conditions, and free from damage or deterioration.

C. Protection after installation: Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove when no longer needed.

1.7 SUBSTITUTIONS AND PRODUCT OPTIONS

A. Products list: Within thirty (30) days after Contract date, submit to Architect a complete list of major products proposed to be used, with the name of the manufacturer and the installing subcontractor.

B. Contractor's Options:

1. For products specified only by reference standard, select any product meeting that standard.
2. For products specified by naming several products or manufacturers, select any one of the products or manufacturers named, which complies with the specifications.
3. For products specified by naming one or more products or manufacturers and "or equal", Contractor must submit a request for substitutions for any product or manufacturer not specifically named.
4. For products specified by naming only one product and manufacturer, there is no option.

C. Substitutions:

1. For a period of thirty (30) days after Contract date, Architect will consider written requests from Contractor for substitution of products.
2. Submit a separate request for each product, supporting with complete data, with drawings and samples as appropriate, including:

    a. Comparison of qualities of the proposed substitution with that specified.
    b. Changes required in other elements of the work because of the substitution.
    c. Effect on the construction schedule.
    d. Cost data comparing the proposed substitution with the product specified.
    e. Any required license fees or royalties.
    f. Availability of maintenance service, and source of replacement materials.

3. Architect shall be the judge of the acceptability of the proposed substitution.

D. Contractor's representation: At the request for a substitution constitutes a representation that Contractor:

1. Has investigated the proposed product and determined that it is equal to or superior in all respects to that specified.
2. Will provide the same warranties or bonds for the substitution as for the product specified.
3. Will coordinate the installation of an accepted substitution into the work and make such other changes as may be required to make the work complete in all respects.
4. Waives all claims for additional costs, under his responsibility, which may subsequently become apparent.

E. Architect will review requests for substitutions with reasonable promptness, and notify Contractor, in writing, of the decision to accept or reject the requested substitution.

END OF SECTION 01 60 10

SECTION 01 73 29 – CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other work.

1.4 SUBMITTALS

A. Cutting and Patching Proposal: Submit a proposal describing procedures at least ten (10) days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:

1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
3. Products: List products to be used and firms or entities that will perform the work.
4. Dates: Indicate when cutting and patching will be performed.
5. Utility Services and Mechanical / Electrical Systems: List services / systems that cutting and patching procedures will disturb or affect. List services / systems that will be relocated and those that will be temporarily out of service. Indicate how long services / systems will be disrupted.
6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.5 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety. Operating elements include the following:

1. Primary operational systems and equipment.
2. Air or smoke barriers.
3. Fire-suppression systems.
4. Mechanical systems piping and ducts.
5. Control systems.
6. Communication systems.
7. Conveying systems.
8. Electrical wiring systems.

C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:

1. Water, moisture, or vapor barriers.
2. Membranes and flashings.
3. Exterior curtain-wall construction.
4. Equipment supports.
5. Piping, ductwork, vessels, and equipment.
6. Noise- and vibration-control elements and systems.

D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

E. Cutting and Patching Conference: Before proceeding, meet at the Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.6 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering, and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
5. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

    a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces4. Delete or revise first subparagraph below to suit Project.

4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.

5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
6. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01 73 29

SECTION 01 74 00 – CLEANING

PART 1 - GENERAL

1.1 The General Conditions of the Contract and Supplementary General Conditions of the contract of this specification are herein made a part of this section of the specifications. The Contractor and subcontractor shall carefully examine all drawings and all sections of the specifications so as to properly coordinate his work with the work of others.

1.2 REQUIREMENTS INCLUDED:

A. Execute cleaning, during progress of the work, and at completion of the work, as required by General Conditions.

1.3 REQUIREMENTS OF REGULATORY AGENCIES:

A. Safety Standards: Maintain project in accordance with the OSHA safety standards, as stipulated under the Occupational Safety and Health Act of 1970 and printed May 29, 1971, in the Federal Register.

B. Fire Protection: Store volatile waste in covered metal containers and remove from premises daily.

C. Pollution Control: Conduct cleanup and disposal operations to comply with local ordinances and anti-pollution laws.

D. Burning and burying of rubbish and waste materials on the project site is not permitted.

E. Disposal of volatile fluid wastes (such as mineral spirits, oil, or paint thinner) in storm or sanitary sewer systems or into streams or waterways is not permitted.

PART 2 - PRODUCTS

2.1 Cleaning Materials:

A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.

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

PART 3 - EXECUTION

3.1 DURING CONSTRUCTION:

A. Oversee cleaning and ensure that structure and grounds are maintained free from accumulations of waste materials and rubbish.

B. Sprinkle dusty debris with water.

C. Once weekly (or more often as required by accumulation) clean up site and access and dispose of waste materials, rubbish, and debris.

D. Provide 55-gallon containers and locate on site for collection of waste materials, rubbish, and debris. Provide trash receptacles on each floor of the structure. Each subcontractor is then responsible for collecting and depositing his debris in the collection facilities.

E. Do not allow waste materials, rubbish, and debris to accumulate and become an unsightly or hazardous condition.

F. Subcontractors are required to collect and remove from the job site their own liquid waste, asbestos, and other waste requiring special handling for disposal. The Contractor must keep all work areas, passageways, and stairs in and around the project free from debris at all times.

G. Remove waste materials, rubbish and debris from the site and legally dispose of at public or private dumping areas off the Owner's property, at least once a week.

H. Lower waste materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.

I. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

3.2 FINAL CLEANING:

A. Use experienced workmen, or professional cleaners for final cleaning.

B. At completion of construction and just prior to acceptance or occupancy, conduct a final inspection of exposed interior and exterior surfaces.

C. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials, from interior and exterior surfaces. Coordinate with requirements specified under the various sections of these specifications.

D. Repair, patch, and touch-up marred surfaces to match adjacent finishes. Coordinate with requirements specified under the various sections of these specifications.

E. Broom-clean paved surfaces.

F. Maintain cleaning until the structure, or portion thereof, is occupied by the Owner.

G. At the completion of the work under this contract, all areas and premises where work has been performed (and where access areas have been used) shall be left in the clean condition specified, subject to approval of the Architect/Engineer.

END OF SECTION 01 74 00

SECTION 01 74 19 – CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Disposing of nonhazardous construction waste.

1.3 DEFINITIONS

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

B. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

1.4 WASTE MANAGEMENT PLAN

A. General: Develop plan consisting of waste identification, waste reduction work plan, and cost/ revenue analysis. Indicate quantities by weight or volume but use same units of measure throughout waste management plan.

B. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

1. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.

C. Cost / Revenue Analysis: Indicate total cost of waste disposal as if there was no waste management plan and net additional cost or net savings resulting from implementing waste management plan. Include the following:

1. Total quantity of waste.
2. Estimated cost of disposal (cost per unit). Include hauling and tipping fees and cost of collection containers for each type of waste.

3. Total cost of disposal (with no waste management).
4. Savings in hauling and tipping fees that are avoided.
5. Handling and transportation costs. Include cost of collection containers for each type of waste.
6. Net additional cost or net savings from waste management plan.

PART 2 - EXECUTION

2.1 PLAN IMPLEMENTATION

A. General: Implement waste management plan as approved by Architect and Owner. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

1. Comply with Specification Section 01 50 00 – Temporary Facilities and Controls for operation, termination, and removal requirements.

B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.

C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
2. Comply with Specification Section 01 50 00 – Temporary Facilities and Controls for controlling dust and dirt, environmental protection, and noise control.

2.2 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION 01 74 19

SECTION 01 77 00 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 0 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS

A. Closeout is hereby defined to include general requirements near end of Contract Time, in preparation for final acceptance, final payment, normal termination of contract, occupancy by Owner and similar actions evidencing completion of the work. Specific requirements for individual units of work are specified in sections of any Divisions included between 2 through 16. Time of closeout is directly related to "Substantial Completion", and therefore may be either a single time period for entire work or a series of time periods for individual parts of the work which have been certified as substantially complete at different dates. That time variation (if any) shall be applicable to other provisions of this section.

1.3 PREREQUISITES TO SUBSTANTIAL COMPLETION

A. Prior to requesting Architect's inspection for certification of substantial completion (for either entire work or portions thereof), complete the following and list known exceptions in request:

1. In progress payment request, coincident with or first following date claimed, show either 100% completion for portion of work claimed as "substantially complete", or list incomplete items, value of incompletion, and reasons for being incomplete.
2. Include supporting documentation for completion as indicated in these contract documents.
3. Submit statement showing accounting of changes to Contract Sum.
4. Advise Owner of pending insurance changeover requirements.
5. Submit specific warranties, workmanship / maintenance bonds, maintenance agreements, final certifications, and similar documents.
6. Obtain and submit releases enabling Owner's full and unrestricted use of the work and access to services and utilities, including (where required) occupancy permits, operating certificates, and similar releases.
7. Submit record drawings, maintenance manuals, final project photographs, damage or settlement survey, property survey, and similar final record information.
8. Deliver tools, spare parts, extra stocks of materials, and similar physical items to Owner.
9. Make final changeover of locks and transmit keys to Owner and advise Owner's personnel of changeover in security provisions.

10. Complete startup testing of systems, and instructions of Owner's operating / maintenance personnel. Discontinue (or change over) and remove from project site temporary facilities and services, along with construction tools and facilities, mockups, and similar elements.
11. Complete final cleaning up requirements, including touchup painting of marred surfaces.
12. Touchup and otherwise repair and restore marred exposed finishes.

1.4 INSPECTION PROCEDURES

A. Upon receipt of Contractor's request, Architect will either proceed with inspection or advise Contractor of prerequisites not fulfilled. Following initial inspection, Architect will either prepare certificate of substantial completion or advise Contractor of work which must be performed prior to issuance of certificate; and repeat inspection when requested and assured that work has been substantially completed. Results of completed inspection will form initial "punch list" for final acceptance.

1.5 PREREQUISITES TO FINAL ACCEPTANCE

A. Prior to requesting Architect's final inspection for certification of final acceptance and final payment, as required by General Conditions, complete the following and list known exceptions (if any) in request:

1. Submit final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
2. Submit updated final statement, accounting for additional (final) changes to Contract Sum.
3. Submit certified copy of Architect's final punch list of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, endorsed, and dated by Architect.
4. Submit final meter readings for utilities, measured record of stored fuel, and similar data as of time of substantial completion or when Owner took possession of and responsibility for corresponding elements of the work.
5. Submit consent of surety.
6. Submit final liquidated damages settlement statement, acceptable to Owner.
7. Revise and submit evidence of final, continuing insurance coverage complying with insurance requirements.
8. Submit copy of Notice of Termination acceptance letter from the Tennessee Department of Environment and Conservation.

1.6 REINSPECTION PROCEDURE

A. Upon receipt of Contractor's notice that the work has been completed, including punch list items resulting from earlier inspections, and accepting incomplete items delayed because of acceptable circumstances, Architect will reinspect the work. Upon completion of reinspection, Architect will either prepare certificate of final acceptance or advise Contractor of work not completed or obligations not fulfilled as required for final acceptance. If necessary, procedure will be repeated.

1.7 RECORD DOCUMENT SUBMITTALS

A. Specific requirements for record documents are indicated in individual sections of these specifications. Other requirements are indicated in General Conditions. General submittal requirements are indicated in "Submittals" sections. Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire resistive location; provide access to record documents for Architect's reference during normal working hours.

B. Record Drawings

1. Maintain a whiteprint set (blue line or black line) of contract drawings and shop drawings in clean, undamaged condition, with markup of actual installations which vary substantially from the work as originally shown. Mark whichever drawing is most capable of showing "field" condition fully and accurately; however, where shop drawings are used for markup, record a cross-reference at corresponding location on working drawings. Mark with red erasable pencil and, where feasible, use other colors to distinguish between variations in separate categories of work. Markup new information, which is recognized to be of importance to Owner, but was for some reason not shown on either contract drawings or shop drawings. Give particular attention to concealed work, which would be difficult to measure and record at a later date. Note related change order numbers where applicable. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates, and other identification on cover of each set.

C. Record Specifications

1. Maintain one copy of specifications, including addenda, change orders and similar modifications issued in printed form during construction, and markup variations (of substance) in actual work in comparison with text of specifications and modifications as issued. Give particular attention to substitutions, selection of options, and similar information on work where it is concealed or cannot otherwise be readily discerned at a later date by direct observation. Note related record drawing information and product data, where applicable. Upon completion of markup, submit to Architect for Owner's records.

D. Record Sample Submittal

1. Immediately prior to date(s) of substantial completion, Architect (and including Owner's personnel where desired) will meet with Contractor at site and will determine which (if any) of submitted samples maintained by Contractor during progress of the work are to be transmitted to Owner for record purposes. Comply with Architect's instructions for packaging, identification marking, and delivery to Owner's sample storage space.

E. Miscellaneous Record Submittals

1. Refer to other sections of these specifications for requirements of miscellaneous record keeping and submittals in connection with actual performance of the work. Immediately prior to date(s) of substantial completion, complete miscellaneous records, and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to Architect for Owner's records.

F. Maintenance Manuals

1. Organize maintenance and operating manual information into suitable sets of manageable size and bind into individual binders properly identified and indexed (thumb tabbed). Include emergency instructions, spare parts listing, copies of warranties, wiring diagrams, recommended "turnaround" cycles, inspection procedures, shop drawings, product data, and similar applicable information. Bind each manual of each set in a heavy-duty 2", 3-ring vinyl covered binder, and include pocket folders for folded sheet information. Mark identification on both front and spine of each binder.

PART 2 - EXECUTION

2.1 CLOSEOUT PROCEDURES

A. General Operating / Maintenance Instructions

B. Arrange for each installer of work requiring continuing maintenance or operation, to meet with Owner's personnel, at project site, to provide basic instructions needed for proper operation and maintenance of entire work. Include instructions by manufacturer's representatives where installers are not expert in the required procedures. Review maintenance manuals, record documentation, tools, spare parts and materials, lubricants, fuels, identification system, control sequences, hazards, cleaning and similar procedures and facilities. For operational equipment, demonstrate startup, shutdown, emergency operations, noise and vibration adjustments, safety, economy / efficiency adjustments, energy effectiveness, and similar operations. Review maintenance and operations in relation with applicable warranties, agreements to maintain, bonds, and similar continuing commitments.

2.2 FINAL CLEANING

A. Special cleaning for specific units of work is specified in sections of any Divisions included between 2 through 16. General cleaning during progress of work is specified in General Conditions and as temporary services in the Specification Section 01 50 00 – Temporary Facilities and Controls. Provide final cleaning of the work, at time indicated, consisting of cleaning each surface or unit of work to normal "clean" condition expected for a first-class building cleaning and maintenance program. Comply with manufacturer's instructions for cleaning operations. The following are examples, but not by way of limitation, of cleaning levels required:

1. Remove labels which are not required as permanent labels.
2. Clean transparent materials, including mirrors and window / door glass, to a polished condition, removing substances which are noticeable as vision obscuring materials. Replace broken glass and damaged transparent materials.
3. Clean exposed exterior and interior hard surfaced finishes, to a dirt-free condition, free of dust, stains, films and similar noticeable distracting substances. Except as otherwise indicated, avoid disturbance of natural weathering of exterior surfaces. Restore reflective surfaces to original reflective condition.
4. Wipe surfaces of mechanical and electrical equipment clean; remove excess lubrication and other substances.
5. Remove debris and surface dust from limited access spaces including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
6. Clean concrete floors in non-occupied spaces broom clean.
7. Vacuum clean carpeted surfaces and similar soft surfaces.
8. Clean plumbing fixtures to a sanitary condition, free of stains including those resulting from water exposure.
9. Clean food service equipment to a condition of sanitation ready and acceptable for intended food service use.
10. Clean light fixtures and lamps so as to function with full efficiency.
11. Clean project site (yard and grounds), including landscape development areas, of litter and foreign substances. Sweep paved areas to a broom clean condition; remove stains, petrochemical spills, and other foreign deposits. Rake grounds which are neither planted nor paved, to a smooth, even textured surface.

2.3 REMOVAL OF PROTECTION

A. Except as otherwise indicated or requested by Architect, remove temporary protection devices and facilities which were installed during course of the work to protect previously completed work during remainder of construction period.

2.4 COMPLIANCES

A. 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.

B. 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.

END OF SECTION 01 77 00

SECTION 01 77 19 – CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 DATA BINDERS Generally

A. Provide two complete sets. Provide commercial quality three ring binders with durable plastic covers. Identify project and type of data on face and side of binder. If multiple binders are required, identify as consecutively numbered volumes, identifying original documents as set number one. Provide information required by Contract Documents organized as outlined below. Include related documents under the heading to which each is most closely related.

B. Provide introductory information:

1. Cover sheet giving complete project title and number, Contractor's name, address, phone number, name of project superintendent, and related general information.
2. Table of Contents identifying material in Binder and identifying missing materials to be added later or certifying completeness of Binder. Reference and bind separately any over-size documents that cannot be neatly folded and included in this binder.

C. Provide Product Data as outlined below:

1. Detailed Table of Contents for this part
2. For each system or product: names, addresses, and telephone numbers of supplier, installer, and maintenance service company; drawing and specification reference; building location; manufacturer and model number.
3. Description of unit and component parts, clearly identifying the specific product or part installed. When manufacturer's cut sheets are used for product identification, plainly mark specific items included in Work and mark out items not included in Work.
4. Related information required by Contract Documents, or furnished with items included in Project, that Owner may use for maintenance, operation, repair, renovation, or additions to work.

D. Provide Operating and Maintenance Data as outlined below for mechanical and electrical systems, equipment, and products:

1. Detailed Table of Contents for this part
2. Manufacturer's printed operating and maintenance instructions supplemented with drawings and text to clearly illustrate proper operation and a logical sequence of maintenance procedures.
3. Servicing and lubrication schedule with list of lubricants.
4. Manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
5. As-installed control diagrams by controls manufacturer.
6. Installers' coordination drawings with as-installed color-coded piping diagrams and wiring diagrams.
7. Charts of valve tag numbers with the location and function of each valve.

8. Circuit directories of panel boards.
9. Instructions for care, with a list of manufacturer's recommended types of cleaning agents and methods.
10. List materials and parts furnished for the Owner's use.
11. Copy of the list of persons who received demonstration and training.

1.2 PROJECT DATA BINDERS

A. Add to introductory information a complete listing of subcontractors and material suppliers, including dollar amount, company name, address, phone number, local representative, and information regarding minority-owned business status.

B. Provide certificates and acceptance information:

1. Detailed Table of Contents for this part
2. Certificate of Substantial Completion
3. Use and Occupancy Permits
4. Certificate(s) of Inspection or letter(s) of acceptance from:
5. Fire Marshal
6. Department of Labor for boilers, pressure vessels, or elevators
7. Public Health Authorities
8. Other governing authorities as apply
9. Guarantees, warranties, bonds, certifications, maintenance agreements, and related documents
10. Detailed Table of Contents for this part
11. Contractor's warranty of the work
12. Guarantees, warranties, and bonds, executed by the respective vendors, manufacturers, suppliers and subcontractors
13. Certifications
14. Maintenance Agreements and Service Contracts

C. Complete information for each item:

1. Product or work item, and scope of installation
2. Name of provider, with name of responsible principal, address, and telephone number
3. Beginning date and duration
4. Information about instances which might affect validity, and proper procedure in case of failure.

D. Construction Record Documents: The record copy of Contract Documents required by paragraph 3.11 of the Conditions shall be kept in good condition for submittal to Designer upon completion of construction activity. In the course of the work, Contractor shall legibly mark these documents to record actual conditions of work, including: location, depth, and identification of new and existing underground items, location by dimension and identification of utilities, valves, tap points, equipment, service access, test points, and related features, field changes in dimensions and detail, changes by addenda, change orders, and construction change directives, description and details of features for maintenance, service, replacement, or expansion of the work.

END OF SECTION 01 77 19

SECTION 01 78 23 – OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory.
2. Emergency manuals.
3. Operation manuals for systems, subsystems, and equipment.
4. Maintenance manuals for the care and maintenance of products, materials, and finishes systems and equipment.

1.3 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 SUBMITTALS

A. Initial Submittal: Submit two (2) draft copies of each manual at least fifteen (15) days before requesting inspection for Substantial Completion. Include a complete operation and maintenance directory. Architect will return one copy of draft and mark whether general scope and content of manual are acceptable.

B. Final Submittal: Submit one copy of each manual in final form at least fifteen (15) days before final inspection. Architect will return copy with comments within fifteen (15) days after final inspection.

1. Correct or modify each manual to comply with Architect's comments. Submit three (3) copies of each corrected manual within fifteen (15) days of receipt of Architect's comments.

1.5 COORDINATION

A. Where operation and maintenance documentation include information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

A. Organization: Include a section in the directory for each of the following:

1. List of documents.
2. List of systems.
3. List of equipment.
4. Table of contents.

B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.

C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.

D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 MANUALS, GENERAL

A. 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 the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.

5. Name, address, and telephone number of Contractor.
6. Name and address of Architect.
7. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include a comprehensive table of contents for all volumes in each volume of the set.

D. 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.

1. 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.

   a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.

   b. In first subparagraph below, insert special requirements such as indicating five-digit Section number on bottom of spine for identification.

   c. 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.

4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

   a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.

   b. 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.

2.3 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.
3. Emergency procedures.

B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. Fire.
2. Flood.
3. Gas leak.
4. Water leak.
5. Power failure.
6. Water outage.
7. System, subsystem, or equipment failure.
8. Chemical release or spill.

C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

D. Emergency Procedures: Include the following, as applicable:

1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions.
2. Performance and design criteria if Contractor is delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.

8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

B. Descriptions: Include the following:

1. Product name and model number.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed and identify color-coding where required for identification.

2.5 PRODUCT MAINTENANCE MANUAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.

2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name, and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:

1. Standard printed maintenance instructions and bulletins.
2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions
2. Troubleshooting guide
3. Precautions against improper maintenance

4. Disassembly; component removal, repair, and replacement; and reassembly instructions
5. Aligning, adjusting, and checking instructions
6. Demonstration and training videotape, if available

E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.

B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.

G. Do not use original Project Record Documents as part of operation and maintenance manuals.

1. Comply with requirements of newly prepared Record Drawings in Specification Section 01 78 39 – Project Record Documents.

H. Comply with Specification Section 01 77 00 – Closeout Procedures for schedule for submitting operation and maintenance documentation.

END OF SECTION 01 78 23

SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.
2. Record specifications.
3. Record Product Data.
4. Miscellaneous record submittals.

1.3 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one (1) set of marked-up record prints.
2. Number of Copies: Submit copies of Record Drawings as follows:

a. Initial Submittal:

1) Submit one (1) paper-copy set of marked-up record prints.
2) Submit PDF electronic files of scanned record prints and one (1) set of file prints.
3) Submit Record Digital Data Files and one (1) set of plots.
4) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.

b. Final Submittal:

1) Submit three (3) paper-copy sets of marked-up record prints.
2) Submit PDF electronic files of scanned Record Prints and three (3) sets of file prints.
3) Print each drawing, whether or not changes and additional information were recorded.

c. Final Submittal:

1) Submit one (1) paper-copy set of marked-up record prints.
2) Submit Record Digital Data Files and three (3) sets of Record Digital Data File plots.
3) Plot each drawing file, whether or not changes and additional information were recorded.

B. Record Specifications: Submit one (1) paper copy of Project's Specifications, including addenda and Contract modifications.

C. Record Product Data: Submit one (1) paper copy of each submittal.

1. Where record Product Data is required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit one (1) paper of each submittal.

E. Reports: Submit written report weekly indicating items incorporated into Project Record Documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

1.4 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
b. Accurately record information in an acceptable drawing technique.
c. Record data as soon as possible after obtaining it.
d. Record and check the markup before enclosing concealed installations.
e. Cross-reference record prints to corresponding photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

a. Dimensional changes to Drawings.
b. Revisions to details shown on Drawings.
c. Depths of foundations.
d. Locations and depths of underground utilities.
e. Revisions to routing of piping and conduits.
f. Revisions to electrical circuitry.
g. Actual equipment locations.

h. Duct size and routing.
i. Locations of concealed internal utilities.
j. Changes made by Change Order.
k. Changes made following Architect's written orders.
l. Details not on the original Contract Drawings.
m. Field records for variable and concealed conditions.
n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:

1. Format: Same digital data software program, version, and operating system as for the original Contract Drawings.
2. Format: DWG Version Microsoft Windows operating system.
3. Format: Annotated PDF electronic file with comment function enabled.
4. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
5. Refer instances of uncertainty to Architect for resolution.
6. Architect will furnish Contractor with one set of digital data files of the Contract Drawings for use in recording information.

    a. See Specification Section 01 31 00 – Project Management and Coordination for requirements related to use of Architect's digital data files.
    b. Architect will provide data file layer information. Record markups in separate layers.

C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Format: Annotated PDF electronic file with comment function enabled.
3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
4. Identification: As follows:

    a. Project name.

b. Date.
c. Designation "PROJECT RECORD DRAWINGS."
d. Name of Architect.
e. Name of Contractor.

1.5 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation, where installation varies from that indicated in Specifications, addenda, and Contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
5. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

B. Format: Submit record specifications as annotated PDF electronic file scanned PDF electronic file of marked-up paper copy of Specifications.

1.6 RECORD PRODUCT DATA

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and revisions to Project Record Documents as they occur; do not wait until end of Project.

B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

C. Format: Submit Record Product Data as scanned PDF electronic file(s) of marked-up paper copy of Product Data.

1. Include Record Product Data directory organized by Specification Section number and title, electronically linked to each item of Record Product Data.

1.7 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as PDF electronic file scanned PDF electronic file(s) of marked-up miscellaneous record submittals.

1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

1.8 MAINTENANCE OF RECORD DOCUMENTS

A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

END OF SECTION 01 78 39

DIVISION 2

EXISTING CONDITIONS

SECTION 02 41 19 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Demolition and removal of selected site elements.
3. Salvage of existing items to be reused or recycled.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.

B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage.

C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 PREINSTALLATION MEETINGS

A. Pre-Demolition Conference:

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review structural load limitations of existing structure.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and require protection.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For refrigerant recovery technician.

B. Engineering Survey: Submit engineering survey of condition of building.

C. Proposed Protection Measures: Submit report, including Drawings, that indicate the measures proposed for protecting individuals and property, for environmental protection, for dust control and for noise control. Indicate proposed locations and construction of barriers.

D. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Use of elevator and stairs.
5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

E. Pre-Demolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Comply with Specification Section 01 32 33 "Photographic Documentation." Submit before Work begins.

F. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

G. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.7 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

1.8 QUALITY ASSURANCE

A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.9 FIELD CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

1. Before selective demolition, Owner will remove the following items:

a. To Be Determined

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. Hazardous materials will be removed by Owner before start of the Work.
2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

E. Hazardous Materials: Present in buildings and structures to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.

1. Hazardous material remediation is specified elsewhere in the Contract Documents.
2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
3. Owner will provide material safety data sheets for suspected hazardous materials that are known to be present in buildings and structures to be selectively demolished because of building operations or processes performed there.

F. Historic Areas: Demolition and hauling equipment and other materials shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection.

G. Storage or sale of removed items or materials on-site is not permitted.

H. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

1.10 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties. Notify warrantor before proceeding. Existing warranties include the following:

B. Notify warrantor on completion of selective demolition and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project Closeout.

1.11 COORDINATION

A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

C. Steel Tendons: Locate tensioned steel tendons and include recommendations for de-tensioning.

D. Verify that hazardous materials have been remediated before proceeding with building demolition operations.

E. Survey of Existing Conditions: Record existing conditions by use as determined by the Architect.

1. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
2. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2 PREPARATION

A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services / Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

B. Existing Services / Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
2. Arrange to shut off utilities with utility companies.
3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.

    a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
    b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
    c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
    d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
    e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.

f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.4 PROTECTION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Cover and protect furniture, furnishings, and equipment that have not been removed.
5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Specification Section 01 50 00 – Temporary Facilities and Controls.

B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

C. Remove temporary barricades and protections where hazards no longer exist.

3.5 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering, and chopping. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of

hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.

5. Maintain fire watch during and for at least one (1) hour after flame-cutting operations.
6. Maintain adequate ventilation when using cutting torches.
7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
10. Dispose of demolished items and materials promptly. Comply with requirements in Specification Section 01 74 19 – Construction Waste Management and Disposal.

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

C. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

D. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch (19 mm) at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.

B. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.

C. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.

D. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.

E. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings." Do not use methods requiring solvent-based adhesive strippers.

F. Roofing: Remove no more existing roofing than what can be covered in one day by new roofing so that building interior remains watertight and weathertight. See Section for new roofing requirements.

1. Remove existing roof membrane, flashings, copings, and roof accessories.
2. Remove existing roofing system down to substrate.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction and recycle or dispose of them according to Specification Section 01 74 19 – Construction Waste Management and Disposal.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
4. Comply with requirements specified in Specification Section 01 74 19 – Construction Waste Management and Disposal.

B. Burning: Do not burn demolished materials.

3.8 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.9 SELECTIVE DEMOLITION SCHEDULE

A. Indicated on Drawings. (Minor)

END OF SECTION 02 41 19

DIVISION 6

WOODS, PLASTICS & COMPOSITES

SECTION 06 41 16 - PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Plastic-laminate-faced architectural cabinets.
2. Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-faced architectural cabinets unless concealed within other construction before cabinet installation.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product, including panel products, high-pressure decorative laminate adhesive for bonding plastic laminate, fire-retardant-treated materials and cabinet hardware and accessories.

1. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.

B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.

1. Show details full size.
2. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
3. Show locations and sizes of cutouts and holes for electrical switches and outlets and other items installed in architectural plastic-laminate cabinets.

C. Samples for Initial Selection:

1. Plastic laminates.
2. PVC edge material.
3. Thermoset decorative panels.

1.4 QUALITY ASSURANCE

A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.

B. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver cabinets until painting and similar operations that could damage woodwork have been completed in installation areas. If cabinets must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.6 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install cabinets until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

B. Environmental Limitations: Do not deliver or install cabinets until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 deg F (16 and 32 deg C) and relative humidity between 43 and 70 percent during the remainder of the construction period.

C. Field Measurements: Where cabinets are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1. Locate concealed framing, blocking, and reinforcements that support cabinets by field measurements before being enclosed, and indicate measurements on Shop Drawings.

D. Established Dimensions: Where cabinets are indicated to fit to other construction, establish dimensions for areas where cabinets are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

1.7 COORDINATION

A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that cabinets can be supported and installed as indicated.

B. Hardware Coordination: Distribute copies of approved hardware schedule specified in Section 08 71 11 "Door Hardware (Descriptive Specification)" to fabricator of architectural woodwork; coordinate Shop Drawings and fabrication with hardware requirements.

PART 2 - PRODUCTS

2.1 PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of architectural plastic-laminate cabinets indicated for construction, finishes, installation, and other requirements.
   1. The Contract Documents contain selections chosen from options in the quality standard and additional requirements beyond those of the quality standard. Comply with those selections and requirements in addition to the quality standard.

B. Grade: Premium.

C. Regional Materials: Plastic-laminate cabinets shall be manufactured within 500 miles (800 km) of Project site.

D. Certified Wood: Plastic-laminate cabinets shall be made from wood products certified as "FSC Pure" or "FSC Mixed Credit" according to FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship," and FSC STD-40-004, "FSC Standard for Chain of Custody Certification."

E. Type of Construction: Frameless.

F. Cabinet, Door, and Drawer Front Interface Style: Flush overlay.

G. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by woodwork quality standard.

   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

      a. Abet Laminati, Inc.
      b. Formica Corporation.
      c. Lamin-Art, Inc.
      d. Panolam Industries International, Inc.
      e. Wilsonart International; Div. of Premark International, Inc.

H. Laminate Cladding for Exposed Surfaces:

   1. Horizontal Surfaces: Grade HGS.
   2. Postformed Surfaces: Grade HGP.
   3. Vertical Surfaces: Grade VGS.
   4. Edges: PVC edge banding, 0.12 inch (3 mm) thick, matching laminate in color, pattern, and finish.

5. Pattern Direction: Vertically for drawer fronts, doors, and fixed panels.

I. Materials for Semiexposed Surfaces:

1. Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, NEMA LD 3, Grade VGS.

a. Edges of Plastic-Laminate Shelves: PVC edge banding, 0.12 inch (3 mm) thick, matching laminate in color, pattern, and finish.
b. Edges of Thermoset Decorative Panel Shelves: PVC or polyester edge banding.
c. For semiexposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, NEMA LD 3, Grade VGS.

2. Drawer Sides and Backs: Thermoset decorative panels with PVC or polyester edge banding.
3. Drawer Bottoms: Thermoset decorative panels.

J. Dust Panels: 1/4-inch (6.4-mm) plywood or tempered hardboard above compartments and drawers unless located directly under tops.

K. Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces: High-pressure decorative laminate, NEMA LD 3, Grade BKL.

L. Drawer Construction: Fabricate with exposed fronts fastened to subfront with mounting screws from interior of body.

1. Join subfronts, backs, and sides with glued rabbeted joints supplemented by mechanical fasteners.

M. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
1. As selected by Designer from laminate manufacturer's full range in the following categories:

a. Solid colors, matte finish.
b. Wood grains, matte finish.
c. Patterns, matte finish.

2.2 WOOD MATERIALS

A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.

1. Wood Moisture Content: 8 to 13 percent.

B. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.

1. Composite Wood and Agrifiber Products: Products shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
2. Medium-Density Fiberboard: ANSI A208.2, Grade 130, made with binder containing no urea formaldehyde.
3. Particleboard: ANSI A208.1, Grade M-2, made with binder containing no urea formaldehyde.
4. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for test methods 3.3, 3.4, 3.6, 3.8, and 3.10.

2.3 CABINET HARDWARE AND ACCESSORIES

A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets except for items specified in Section 08 71 11 "Door Hardware."

B. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 100, self-closing.

C. Back-Mounted Pulls: BHMA A156.9, B02011.

D. Wire Pulls: Back mounted, solid metal, 4 inches (100 mm) long, 5/16 inch (8 mm) in diameter.

E. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081.

F. Shelf Rests: BHMA A156.9, B04013; metal, two-pin type with shelf hold-down clip.

G. Drawer Slides: BHMA A156.9.
1. Grade 1HD-100 and Grade 1HD-200: Side mounted; full-extension type; zinc-plated-steel ball-bearing slides.
2. For drawers not more than 3 inches (75 mm) high and not more than 24 inches (600 mm) wide, provide Grade 2.
3. For drawers more than 3 inches (75 mm) high but not more than 6 inches (150 mm) high and not more than 24 inches (600 mm) wide, provide Grade 1HD-100.
4. For drawers more than 6 inches (150 mm) high or more than 24 inches (600 mm) wide, provide Grade 1HD-100.
5. For computer keyboard shelves, provide Grade 1HD-100.

H. Door Locks: BHMA A156.11, E07121.

I. Drawer Locks: BHMA A156.11, E07041.

J. Door and Drawer Silencers: BHMA A156.16, L03011.

K. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
1. Satin Stainless Steel: BHMA 630.

L. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

2.4 MISCELLANEOUS MATERIALS

A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln dried to less than 15 percent moisture content.

B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.

C. Adhesives: Do not use adhesives that contain urea formaldehyde.

D. Adhesives: Use adhesives that meet the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

E. Adhesive for Bonding Plastic Laminate: PVA.

1. Adhesive for Bonding Edges: Hot-melt adhesive.

2.5 FABRICATION

A. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.

B. Fabricate cabinets to dimensions, profiles, and details indicated.

C. Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

1. Notify Designer seven days in advance of the dates and times woodwork fabrication will be complete.
2. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements before disassembling for shipment.

D. Shop-cut openings to maximum extent possible to receive hardware, appliances, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

PART 3 - EXECUTION

3.1 PREPARATION

A. Before installation, condition cabinets to average prevailing humidity conditions in installation areas.

B. Before installing cabinets, examine shop-fabricated work for completion and complete work as required.

3.2 INSTALLATION

A. Grade: Install cabinets to comply with same grade as item to be installed.

B. Assemble cabinets and complete fabrication at Project site to the extent that it was not completed in the shop.

C. Install cabinets level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm).

D. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

E. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork.

1. Use filler matching finish of items being installed.

F. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.

1. Install cabinets with no more than 1/8 inch in 96-inch (3 mm in 2400-mm) sag, bow, or other variation from a straight line.
2. Fasten wall cabinets through back, near top and bottom, and at ends not more than 16 inches (400 mm) o.c.

3.3 ADJUSTING AND CLEANING

A. Repair damaged and defective cabinets, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.

B. Clean, lubricate, and adjust hardware.

C. Clean cabinets on exposed and semiexposed surfaces.

END OF SECTION 06 41 16

DIVISION 7

THERMAL & MOISTURE PROTECTION

SECTION 07 92 00 – JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.2 SUMMARY

A. The extent of each form and type of joint sealer is indicated on drawings and by provisions of this section.

B. The applications for joint sealers as work of this section include the following:

1. Concrete construction joints.
2. Interior wall/ceiling joints.
3. Gasketing of assemblies.

C. Refer to sections of Divisions 23 and 26 for joint sealers in mechanical and electrical work; not work of this section.

D. General Performance: Except as otherwise indicated, joint sealers are required to establish and maintain airtight and waterproof continuous seals on a permanent basis, within recognized limitations of wear and aging as indicated for each application. Failures of installed sealers to comply with this requirement will be recognized as failures of materials and workmanship.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's product specifications, handling/installation/curing instructions, and performance tested data sheets for each elastomeric product required.

B. Certified Tests: With product data submit certified test reports for elastomeric sealants on aged performances as specified, including hardness, stain resistance, adhesion, cohesion or tensile strength, elongation, low-temperature flexibility, compression set, modulus of elasticity, water absorption, and resistance (aging, weight loss, deterioration) to heat and exposures to ozone and ultraviolet.

1.4 PROJECT CONDITIONS

A. Environmental Limitations: Do not proceed with installation of liquid sealants under unfavorable weather conditions. Install elastomeric sealants when temperature is in lower third of temperature range recommended by manufacturer for installation.

PART 2 - PRODUCTS

A. ACCEPTABLE MANUFACTURERS:

1. General: Manufacturers listed in this article include those known to produce the indicated category of prime joint sealer material, either as a nominally pure generic product or as an equivalent-performance modification thereof or proprietary product.

B. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

1. Manufacturers of Elastomeric Sealants (Liquid):

a. Dow Corning Corp., Midland, MI
b. General Electric Co., Waterford, NY
c. W. R. Meadows, Inc., Elgin, IL
d. Sonneborn/Contech, Inc., Minneapolis, MN
e. Tremco, Inc., Cleveland, OH

2. Manufacturers of Non-Elastomeric Sealants/ Caulks (Liquid/Tape):

a. W. R. Meadows, Inc., Elgin, IL
b. Sonneborn/Contech, Inc., Minneapolis, MN
c. Tremco, Inc., Cleveland, OH

3. Manufacturers of Joint Fillers/Sealant Backers:

a. Dow Chemical Co., Midland, MI
b. W. R. Meadows, Inc., Elgin, IL
c. Sonneborn/Contech, Inc., Minneapolis, MN

2.2 MATERIALS

A. General Sealer Requirements: Provide colors indicated or, if not otherwise indicated, as selected by Designer from a minimum of 100 of the manufacturer's standard colors. Select materials for compatibility with joint surfaces and other indicated exposures, and except as otherwise indicated select modulus of elasticity and hardness or grade recommended by manufacturer for each application indicated. Where exposed to foot traffic, select non tracking materials of sufficient strength and hardness to withstand stiletto heel traffic without damage or deterioration of sealer system.

B. Elastomeric Sealants:

1. Multi-Component Polyurethane Sealant: Except as otherwise indicated, provide manufacturer's standard, non-modified, 2-or-more-part, polyurethane-based, elastomeric sealant; complying with either ASTM C 920 Type M Class 25, or FS TT-S-00227E Class A; self-leveling grade/type where used in joints of surfaces subject to traffic, otherwise non-sag grade/type.

2. Single-Component Polyurethane Sealant: Except as otherwise indicated, provide manufacturer's standard, non-modified, one-part, polyurethane-based, air-curing, elastomeric sealant; complying with either ASTM C 920 Type S Class 25, or FS TT-S-00230C Class A; self-leveling grade/type where used in joints of surfaces subject to traffic, otherwise nonsag grade/type.
3. Bituminous Modification: Where joint surfaces contain or are contaminated with bituminous materials, provide manufacturer's modified type sealant which is compatible with joint surfaces (modified with coal tar or asphalt as required).
4. Single-Component Silicon Rubber Sealant: Except as otherwise indicated, provide manufacturer's standard, non-modified, one- part, silicone-rubber-based, air-curing, nonsag, elastomeric sealant; complying with either ASTM C 920 Type S Class 25 Grade NS, or FS TT-S-001543A Class A Type Non-sag.
5. Sanitary Interior Type: Where indicated and where applied in high-humidity or wet service, provide manufacturer's mold/mildew-resistant, acid type sealant for application to nonporous sealant bond surfaces.

C. Non-Elastomeric Sealants and Caulking Compounds:

1. Single-Component Acrylic Sealant: Provide acrylic terpolymer, solvent-based, one-part, thermo-plastic sealant compound; solids not less than 95% acrylic; recommended by manufacturer for general use as an exposed building construction sealant.
2. Performance Standard: Comply with either ASTM C 920 Type S Class 12-1/2 Grade NS, or FS TT-S-00230C Class B Type Non- sag.

D. Joint Fillers, Pavement Types:

1. Bituminous and Fiber Joint Filler: Provide resilient and non- extruding type pre-molded bituminous-impregnated fiberboard units complying with ASTM D 175l; FS HH-F-341, Type I; or AASHTO M 213.

E. Gaskets:

1. Hollow Neoprene Pavement Gasket: Provide hollow or compartmentalized neoprene extrusion, designed to withstand compression to 40% of normal width without extrusion from joint, and will full recovery; with heavy, durable top member, suitable for long-term exposure to severe traffic abrasion and contamination; hardness of approximately 55 Shore A; comply with ASTM D 2628.

2.3 MISCELLANEOUS MATERIALS:

A. Joint Primer/Sealer: Provide type of joint primer/sealer recommended by sealant manufacturer for joint surfaces to be primed or sealed.

B. Bond Breaker Tape: Provide polyethylene tape or other plastic tape as recommended by sealant manufacturer, to be applied to sealant-contact surfaces where bond to substrate or joint filler must be avoided for proper performance of sealant. Provide self- adhesive tape where applicable.

C. Sealant Backer Rod: Provide compressible rod stock of polyethylene foam, polyurethane foam, polyethylene jacketed polyurethane foam, butyl rubber foam, neoprene foam or other flexible, permanent, durable nonabsorptive material as recommended by sealant manufacturer for back-up of and compatibility with sealant. Where used with hot-applied sealant, provide heat-resistant type which will not be deteriorated by sealant application temperature as indicated.

PART 3 - EXECUTION

3.1 INSPECTION:

A. Installer must examine substrates, (joint surfaces) and conditions under which joint sealer work is to be performed and must notify Contractor of unsatisfactory conditions. Do not proceed with joint sealer work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

3.2 JOINT PREPARATION:

A. Clean joint surfaces immediately before installation of gaskets, sealants, or caulking compounds. Remove dirt, insecure coatings, moisture, and other substrates which could interfere with seal of gasket or bond of sealant or caulking compound. Etch concrete and masonry joint surfaces as recommended by sealant manufacturer.

B. Roughen vitreous and glazed joint surfaces as recommended by sealant manufacturer.

C. Prime or seal joint surfaces where indicated, and where recommended by sealant manufacturer. Confine primer/sealer to areas of sealant bond; do not allow spillage or migration onto adjoining surfaces.

3.3 INSTALLATION:

A. Comply with manufacturer's printed instructions except where more stringent requirements are shown or specified, and except where manufacturer's technical representative directs otherwise.

B. Set joint filler units at depth or position in joint as indicated to coordinate with other work, including installation of bond breakers, backer rods and sealants. Do not leave voids or gaps between ends of joint filler units.

C. Install sealant backer rod for liquid-applied sealants, except where shown to be omitted or recommended to be omitted by sealant manufacturer for application indicated.

D. Install bond breaker tape where required by manufacturer's recommendations to ensure that liquid-applied sealants will perform as intended.

E. Employ only proven installation techniques, which will ensure that sealants are deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of joint bond surfaces equally on opposite sides. Except as otherwise indicated, fill sealant rabbet to a slightly concave surface, slightly below adjoining surfaces. Where horizontal joints are between a horizontal surface and vertical surface, fill joint to form a slight cove, so that joint will not trap moisture and dirt.

F. Install liquid-applied sealant to depths as recommended by sealant manufacturer but within the following general limitations, measured at center (thin) section of beads; (not applicable to sealants in lapped joints):

G. For sidewalks, pavements and similar joints sealed with elastomeric sealants and subject to traffic and other abrasion and indentation exposures, fill joints to a depth equal to 75% of joint width, but neither more than 5/8" deep nor less than 3/8" deep.

H. For normal moving joints sealed with elastomeric sealants but not subject to traffic, fill joints to a depth equal to 50% of joint width, but neither more than ½" deep nor less than 1/4" deep.

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

J. Spillage: Do not allow sealants or compounds to overflow from confines of joints, or to spill onto adjoining work, or to migrate into voids of exposed finishes. Clean adjoining surfaces by whatever means may be necessary to eliminate evidence of spillage.

K. Do not overheat or reheat hot-applied sealants; discard (do not use).

L. Recess exposed edges of gaskets and exposed joint fillers slightly behind adjoining surfaces, unless otherwise shown, so that compressed units will not protrude from joints.

M. Bond ends of gaskets together with adhesive or "weld" by other means as recommended by manufacturer to ensure continuous watertight and airtight performance. Miter-cut and bond ends at corners unless molded corner units are provided.

N. Install fire-resistant foamed-in-place filler in openings where indicated, and at thicknesses indicated. Dam bottom of vertical openings and one side of horizontal openings with temporary containment forms or, where required to achieve fire-resistance ratings, provide permanent mineral composition board forms. On horizontal penetrations, provide partial face containment forms where required for foam placement. Allow installed fillers to cure 24 hours; remove temporary forms; trim ragged edges with sharp knife; inspect and fill voids with additional filler to form uniform thickness of filler.

3.4 CURE AND PROTECTION:

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

manner which will minimize increases in modulus of elasticity and other accelerated aging effects. Replace or restore sealants which are damaged or deteriorated during construction period.

END OF SECTION 07 92 00

DIVISION 8

OPENINGS

SECTION 08 11 13 – HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

A. Extent of standard steel doors and frames is shown and scheduled on drawings.

1.3 QUALITY ASSURANCE:

A. Provide doors and frames complying with Steel Door Institute "Recommended Specifications: Standard Steel Doors and Frames" (SDI-100) and as herein specified.

B. Manufacturer: Provide standard steel doors and frames by a single firm specializing in production of this type of work.

C. Provide steel doors and frames by one of the following:

1. Ceco Corp..
2. Republic Builders Prod. Corp.
3. Steelcraft Mfg. Co.
4. Or approved equal.

1.4 SUBMITTALS:

A. Product Data: Submit manufacturer's specifications for fabrication and installation, including data substantiating that products comply with requirements.

B. Shop Drawings: Submit for fabrication and installation of steel doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of finish hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.

C. Provide schedule of doors and frames using same reference numbers for details and openings as those on contract drawings.

1.5 DELIVERY, STORAGE AND HANDLING:

A. Deliver hollow metal work cartoned or crated to provide protection during transit and job storage. Provide additional sealed plastic wrapping for factory finished doors.

B. Inspect hollow metal work upon delivery for damage. Minor damages may be repaired provided finish items are equal in all respects to new work and acceptable to Designer; otherwise, remove and replace damaged items as directed.

C. Store doors and frames at building site under cover. Place units on wood sills at least 4" high, or otherwise store on floors in manner that will prevent rust and damage. Avoid use of non_ vented plastic or canvas shelters which could create humidity chamber. If cardboard wrapper on door becomes wet, remove carton immediately. Provide 1/4" spaces between stacked doors to promote air circulation.

PART 2 - PRODUCTS

2.1 MATERIALS:

A. Hot-Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and oiled, complying with ASTM A 569 and ASTM A 568.

B. Cold-Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A 366 and ASTM A 568.

C. Galvanized Steel Sheets: Zinc-coated carbon steel sheets of commercial quality, complying with ASTM A 526, with ASTM A 525, G60 zinc coating, mill phosphatized.

D. Supports and Anchors: Fabricate of not less than 18 gage galvanized sheet steel.

E. Inserts, Bolts and Fasteners: Manufacturer's standard units, except hot-dip galvanize items to be built into exterior walls, complying with ASTM A 153, Class C or D as applicable.

2.2 SHOP APPLIED PAINT:

A. Primer Rust-inhibitive enamel or paint, either air-drying or baking, suitable as a base for specified finish paints.

2.3 FABRICATION, GENERAL:

A. Fabricate steel door and frame units to be rigid, neat in appearance and free from defects, warp or buckle. Wherever practicable, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory- assembled before shipment, to assure proper assembly at project site.

B. Fabricate exposed faces of doors and panels, including stiles and rails of nonflush units, from only cold-rolled steel.

C. Fabricate frames, concealed stiffeners, reinforcement, edge channels, louvers and moldings from either cold-rolled or hot- rolled steel (at fabricator's option).

D. Fabricate exterior doors, panels, and frames from galvanized sheet steel. Close top and bottom edges of exterior doors as integral part of door construction or by addition of inverted steel channels.

E. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat Phillips heads for exposed screws and bolts.

2.4 FINISH HARDWARE PREPARATION:

A. Prepare doors and frames to receive mortised and concealed finish hardware in accordance with final Finish Hardware Schedule and templates provided by hardware supplier. Comply with applicable requirements of ANSI A 115 series specifications for door and frame preparation for hardware.

B. For concealed overhead door closers, provide space, cutouts, reinforcing and provisions for fastening in top rail of doors or head of frames, as applicable.

C. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied finish hardware may be done at project site.

D. Locate finish hardware as shown on final shop drawings or, if not shown, in accordance with "Recommended Locations for Builder's Hardware," published by Door and Hardware Institute.

2.5 SHOP PAINTING:

A. Clean, treat, and paint exposed surfaces of steel door and frame units, including galvanized surfaces.

B. Clean steel surfaces of mill scale, rust, oil, grease, dirt, and other foreign materials before application of paint.

C. Apply shop coat of prime paint of even consistency to provide a uniformly finished surface ready to receive finish paint.

2.6 STANDARD STEEL DOORS:

A. Provide metal doors of types and styles indicated on drawings or schedules.

2.7 STANDARD STEEL FRAMES:

A. Provide metal frames for doors and other openings, of types and styles as shown on drawings and schedules. Conceal fastenings, unless otherwise indicated.

B. Fabricate frames with mitered corners, fully-welded construction for exterior applications and interior applications.

C. Form exterior frames of hot dip galvanized steel.

D. Door Silencers: Except on weatherstripped frames, drill stops to receive 2 silencers on strike jambs of single-swing frames and 2 silencers on heads of double-swing frames.

E. Manufacturer's "stick-on" silencers will be acceptable in lieu of drilled type.

F. Plaster Guards: Provide 26 gage steel plaster guards or mortar boxes, welded to frame, at back of finish hardware cutouts where mortar or other materials might obstruct hardware operation.

PART 3 - EXECUTION

3.1 INSPECTION:

A. Installer must examine substrate and conditions under which steel doors and frames are to be installed and must notify Contractor in writing of any conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

3.2 INSTALLATION:

A. General: Install standard steel doors, frames, and accessories in accordance with final shop drawings and manufacturer's data, and as herein specified.

B. Placing Frames:

C. Comply with provisions of SDI-105 "Recommended Erection Instructions For Steel Frames", unless otherwise indicated.

D. Except for frames located at in-place concrete or masonry and at drywall installations, place frames prior to construction of enclosing walls and ceilings. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.

E. In plaster or masonry walls constructed with antifreeze additives, protect inside (concealed) faces of door frames using fibered asphalt emulsion coating. Apply approximately 1/8" thick over shop primer and allow to thoroughly dry before handling.

F. In masonry construction, locate 3 wall anchors per jamb at hinge and strike levels. Building-in of anchors and grouting of frames is specified in Section 03 01 0.

G. At in-place concrete or masonry construction, set frames and secure to adjacent construction with machine screws and masonry anchorage devices.

3.3 DOOR INSTALLATION:

A. Fit hollow metal doors accurately in frames, within clearances specified in SDI-100.

3.4 ADJUST AND CLEAN:

A. Prime Coat Touch-up: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.

B. Protection Removal: Immediately prior to final inspection, remove protective plastic wrappings from prefinished doors.

C. Final Adjustments: Check and readjust operating finish hardware items, leaving steel doors and frames undamaged and in complete and proper condition.

END OF SECTION 08 11 13

SECTION 08 14 16 – FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work specified in this section.

1.2 DESCRIPTION OF WORK:

A. Extent and location of each type of wood door is shown on drawings and in schedules.

B. Types of doors required include the following:

1. Solid core flush wood doors with veneer faces.
2. Factory-fitting to frames (prefitting) and factory-preparation for hardware (premachining) for wood doors is included in this section.

1.3 QUALITY ASSURANCE:

A. NWMA Quality Marking: Mark each wood door with NWMA Wood Flush Door Certification Hallmark certifying compliance with applicable requirements of ANSI/NWMA I.S. 1 Series. For manufacturers not participating in NWMA Hallmark Program, a certification of compliance may be substituted for marking of individual doors.

B. Manufacturer: Obtain doors from a single manufacturer to ensure uniformity in quality of appearance and construction, unless otherwise indicated.

1.4 REFERENCES:

A. Comply with the applicable requirements of the following standards unless otherwise indicated:

B. ANSI/NWMA I.S. 1, "Industry Standard for Wood Flush Doors" published by National Woodwork Manufacturers Association (NWMA).

C. AWI Quality Standard: Section 1300 of "Architectural Woodwork Quality Standards" published by the Architectural Woodwork Institute (AWI). Designations for grade and core construction under types of doors refer to this standard.

1.5 SUBMITTALS:

A. Product Data: Submit door manufacturer's product data, specifications and installation instructions for each type of wood door.

B. Include details of core and edge construction, trim for openings and louvers (if any) and similar components.

C. Shop Drawings: Submit shop drawings indicating location and size of each door, elevation of each kind of door, details of construction, location and extent of hardware blocking, fire ratings, requirements for factory finishing and other pertinent data.

D. Specific Product Warranty: Submit written agreement on door manufacturer's standard form signed by Manufacturer, Installer and Contractor, agreeing to repair or replace defective doors which have warped (bow, cup or twist) or which show telegraphing of core construction below in face veneers, or do not conform to tolerance limitations of NWMA and AWI.

E. Warranty shall be in effect during following period of time after date of substantial completion.

F. Solid Core Flush Interior Doors:

1. Five years.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING:

A. Protect wood doors during transit, storage and handling to prevent damage, soiling and deterioration. Comply with the "On- Site Core" recommendations of NWMA pamphlet "Care and Finishing of Wood Doors" and with manufacturer's instructions, and as otherwise indicated.

B. Package doors at factory prior to shipping using method indicated below:

1. Manufacturer's standard method.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS:

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

1. Cal-Wood Door Div., Timberland Ind., Inc.
2. Glen-Mar Door Mfg. Co.
3. Weyerhauser Company.

2.2 MATERIALS AND COMPONENTS:

A. General: Provide wood doors complying with applicable requirements of referenced standards for kinds and types of doors indicated and as specified.

B. Face Panels: Manufacturer's standard 2 or 3-ply face panels, unless otherwise indicated.

C. Exposed Surfaces: Provide kind shown or scheduled and as further specified. Provide same exposed surface material on both faces of each door, unless otherwise indicated.

2.3 GENERAL FABRICATION REQUIREMENTS:

A. Openings: Cut and trim openings through doors and panels as shown. Comply with applicable requirements of referenced standards for kind(s) of doors required.

B. Light Openings: Factory cut openings. Trim openings for non-fire rated doors with solid wood moldings of profile shown.

C. Interior Flush Wood Doors:

1. Solid Core Doors for Transparent Finish:
2. Faces: Natural red oak, plain sliced.
3. Core Construction: PC (Particleboard core).

2.4 SHOP-PRIMING:

A. Shop-prime as follows:

1. Transparent Finish: Prime doors shown or scheduled for transparent finish with stain (if required) and other required pretreatments and first coat of finish as specified in Division 9 "Painting" sections of these specifications.

2.5 SHOP FINISH:

A. Comply with recommendations of AWI for factory finishing of doors, including final sanding immediately before application of finishing materials.

B. Doors shall be factory finished prior to shipping to jobsite.

C. Provide finishes as shown or scheduled and as specified in Division 9 "Painting" sections of these specifications.

D. Prefitting and Preparation for Hardware:

1. Prefit and premachine wood doors at factory.
2. Comply with tolerance requirements of AWI for prefitting. Machine doors for hardware requiring cutting of doors. Comply with final hardware schedules and door frame shop

drawings and with hardware templates and other essential information required to ensure proper fit of doors and hardware.

3. Take accurate field measurements of hardware mortises in metal frames to verify dimensions and alignment before proceeding with machining in factory.

PART 3 - EXECUTION

3.1 INSPECTION:

A. Installer must examine door frames and verify that frames are correct type and have been installed as required for proper hanging of corresponding doors and notify Contractor in writing of conditions detrimental to proper and timely installation of wood doors. Do not proceed with installation until unsatisfactory conditions have been corrected in a manner acceptable to installer.

3.2 INSTALLATION:

A. Condition doors to average prevailing humidity in installation area prior to hanging.

B. Hardware: For installation see drawing. Comply with manufacturer's standards.

C. Manufacturer's Instructions: Install wood doors in accordance with manufacturer's instructions and as shown.

D. Job Fit Doors: Align doors to frame for proper fit and uniform clearance at each edge and machine for hardware. Seal cut surfaces after fitting and machining.

E. Bevel non-rated doors 1/8" in 2" at lock and hinge edges.

F. Prefit Doors: Fit to frames and machine for hardware to whatever extent not previously worked at factory as required for proper fit and uniform clearance at each edge.

G. Clearance: For non-rated doors provide clearances of 1/8" at jambs and heads; 1/8" at meeting stiles for pairs of doors; and 1/2" from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 1/4" clearance from bottom of door to top of threshold.

3.3 ADJUST AND CLEAN:

A. Operation: Rehang or replace doors which do not swing or operate freely, as directed by Architect.

B. Finished Doors: Refinish or replace doors damaged during installation, as directed by Architect.

C. Protection and Completed Work: Advise Contractor of proper procedures required for protection of installed wood doors from damage or deterioration until acceptance of work.

END OF SECTION 08 21 00

SECTION 08 71 00 – DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this section.

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Electromechanical door hardware.
3. Automatic operators.

C. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 70 - National Electrical Code.
4. NFPA 80 - Fire Doors and Windows.
5. NFPA 101 - Life Safety Code.
6. NFPA 105 - Installation of Smoke Door Assemblies.
7. UL/ULC and CSA C22.2 - Standards for Automatic Door Operators Used on Fire and Smoke Barrier Doors and Systems of Doors.
8. State Building Codes, Local Amendments.

D. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:

1. ANSI/BHMA Certified Product Standards - A156 Series.
2. UL10C - Positive Pressure Fire Tests of Door Assemblies.
3. ANSI/UL 294 - Access Control System Units.
4. UL 305 - Panic Hardware.
5. ANSI/UL 437- Key Locks.

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing, fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
3. Content: Include the following information:

    a. Type, style, function, size, label, hand, and finish of each door hardware item.
    b. Manufacturer of each item.
    c. Fastenings and other pertinent information.
    d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    e. Explanation of abbreviations, symbols, and codes contained in schedule.
    f. Mounting locations for door hardware.
    g. Door and frame sizes and materials.
    h. Warranty information for each product.

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Shop Drawings: Details of electrified access control hardware indicating the following:

1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

    a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
    b. Complete (risers, point-to-point) access control system block wiring diagrams.
    c. Wiring instructions for each electronic component scheduled herein.

2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

E. Informational Submittals:

1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

F. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

1.4 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).

C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.

2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

F. Each unit to bear third party permanent label indicating compliance with the referenced testing standards.

G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

1. Function of building, purpose of each area and degree of security required.
2. Plans for existing and future key system expansion.
3. Requirements for key control storage and software.
4. Installation of permanent keys, cylinder cores and software.
5. Address and requirements for delivery of keys.

H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures

I. At completion of installation, provide written documentation that components were applied according to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Warranty Period: Unless otherwise indicated, warranty shall be one year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SCHEDULE DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:

1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.

C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 CONTINUOUS HINGES

A. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 continuous geared hinge. with minimum 0.120-inch thick extruded 6063-T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.

1. Where specified, provide modular continuous geared hinges that ship in two or three pieces and form a single continuous hinge upon installation.
2. Manufacturers:

    a. Pemko (PE).
    b. No Substitution.

2.3 DOOR OPERATING TRIM

A. Door Push Plates and Pulls: ANSI/BHMA A156.6 door pushes and pull units of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.

1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
4. Pulls, where applicable, shall be provided with a 10” clearance from the finished floor on the push side to accommodate wheelchair accessibility.
5. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.
6. Manufacturers:

    a. Rockwood (RO).
    b. No Substitution.

2.4 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.

B. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:

1. Threaded mortise cylinders with rings and cams to suit hardware application.
2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
4. Tubular deadlocks and other auxiliary locks.
5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
6. Keyway: Match Facility Standard.

C. Keying System: Each type of lock and cylinders to be factory keyed.

1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. Existing System: Field verify and key cylinders to match Owner's existing system.

D. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Two (2)
2. Master Keys (per Master Key Level/Group): Five (5).
3. Construction Keys (where required): Ten (10).

E. Construction Keying: Provide construction master keyed cylinders.

F. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

2.5 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.

3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

2.6 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. Exit devices shall have a five-year warranty.
2. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
3. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer’s catalog and template book for specific requirements.
4. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
5. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
6. Flush End Caps: Provide flush end caps made of architectural metal in the same finish as the devices as in the Hardware Sets. Plastic end caps will not be acceptable.
7. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.

    a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
    b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.

8. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
9. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2” wide stiles.
10. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.

11. Rail Sizing: Provide exit device rails factory sized for proper door width application.
12. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed exit devices. Listed manufacturers shall meet all functions and features as specified herein.

1. Manufacturers:

a. Sargent Manufacturing (SA) - 80 Series.
b. No Substitution.

2.7 DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Large Body Cast Iron): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control.

1. Large body cast iron surface mounted door closers shall have a 30-year warranty.
2. Manufacturers:

a. Sargent Manufacturing (SA) - 281 Series.
b. No Substitution.

2.8 ELECTROHYDRAULIC DOOR OPERATORS

A. Electrohydraulic Door Operators (High Traffic): Provide ANSI/BHMA A156.19 Certified Products Directory (CPD) listed low energy operators that meet ANSI/BHMA A156.4 requirements and are UL listed for use on fire rated doors and UL10C certified that comply with requirements for the Americans with Disabilities Act (ADA). Operators shall be verified by GreenCircle to offer energy savings of 19% when compared to similar products to accommodate openings up 250 pounds and 48” wide.

1. Provide operators with features as follows:

    a. Non-handed with push and pull side mounting.
    b. Operates as mechanical surface closer during close cycles, when door is opened manually or if power is off.
    c. Activation by push button, hands-free or radio frequency devices.
    d. On board electronics to collect usage and cycle count data to facilitate preventative maintenance/diagnostics.
    e. Two-year limited warranty.
    f. Wi-Fi interface.
    g. Mounting backplate to simplify and speed up installation.

2. Operators shall have the following functionality:

    a. Adjustable Hold Open: Amount of time a door will stay in the full open position after an activation.
    b. Blow Open for Smoke Ventilation: Door opens when signal is received from alarm system allowing air or smoke to flow through opening. Door will stay open until signal from alarm system is stopped.
    c. Infinite Hold Open: Door will hold open at set position until power is turned off.
    d. Obstruction Detection: Door closes if it hits an obstruction while opening; door will reverse to open position if it hits an obstruction while closing. Door will stop once it hits an obstruction and will rest against the obstruction until removed.
    e. Open Delay: Delays operator opening for locking hardware.
    f. Overload Safety Shut-Off: After two minutes of receiving a door activation signal, inverter times out and door closes to prevent motor/inverter damage.
    g. Presence Detector Input: Input for external sensor to detect presence at door open or close position only.
    h. Push & Go: As the door is manually opened, the operator "senses" movement and opens door to the full-open position.
    i. Selector Mode Switch: Off disables the signal inputs unless Blow Open is activated, on activates the signal inputs, hold open activates the unit (unless Blow Closed is activated) to the hold open position.
    j. Vestibule Delay: When the wall switch is pressed, first door in vestibule will open. Second door will open once vestibule door delay has expired. Delay is adjustable.

3. Manufacturers:

    a. Norton Rixson (NO) - 6000 Series.
    b. No Substitution.

2.9 ARCHITECT SEALS

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.

1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NFPA 252, Standard Methods of Fire Tests of Door Assemblies.

D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

F. Manufacturers:

1. Pemko (PE).
2. No Substitution.

2.10 ELECTRONIC ACCESSORIES

A. Key Switches: Key switches furnished standard with stainless steel single gang face plate with a 12/24VDC bi-color LED indicator. Integral backing bracket permits integration with any 1 1/4" or 1 1/2" mortise type cylinder. Key switches available as momentary or maintained action and in narrow face plate options.

1. Manufacturers:

a. Securitron (SU) - MK Series.
b. No Substitution.

B. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.

1. Manufacturers:

    a. Securitron (SU) - DPS Series.
    b. No Substitution.

2.11 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.12 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. DHI TDH-007-20: Installation Guide for Doors and Hardware.
3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

A. Field Inspection (Punch Report): Reference Division 01 Sections “Closeout Procedures”. Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.

1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

B. Clean adjacent surfaces soiled by door hardware installation.

C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

1. Quantities listed are for each pair of doors, or for each single door.
2. The supplier is responsible for handing and sizing all products.
3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.

Hardware Sets

Set: 1.0

Doors: 100

Description: EXT ALUM PR - NL CVR X EO CVR X PULLS - AUTO OPERATOR X CLOSER

2 Continuous Hinge	CFM_SLF-HD1-M		PE	087100	
1 Concealed Vert Rod Exit, Nightlatch	16 43 AD8410 106 x Less Pull	US32D	SA	087100	
1 Concealed Vert Rod Exit, Exit Only	16 43 AD8410 EO	US32D	SA	087100	
3 Mortise Cylinder	41 GMK (Cam as Required - Match Existing Keyway / Key System)	US32D	SA	087100	
2 Door Pull	RM7511-12 Mtg-Type 12HD (BSP Posts / Ends x US32D Grip)	BSP / 32D	RO	087100	
1 Surface Closer	281 CPS	EN	SA	087100	
1 Automatic Opener	6061 D1 (Drop Plate as Required)	689	NO	087100	⚡
1 Gasketing	By Aluminum Door / Frame Supplier				
2 Sweep	18061CNB		PE	087100	
1 Threshold	273x224AFGT MSES25SS		PE	087100	
1 Wall Switch	700 (Motion Sensor Actuator)		NO	087100	⚡
2 Position Switch	DPS-M - BK		SU	087100	⚡

Notes:
Operational Description: During normal business hours, the latchbolts of the exit devices are dogged down via cylinder dogging allowing for push / pull operation. Assisted entry / egress by waving a hand in front of the motion sensor actuator. During non business hours, the doors are closed and locked. Entry via mechanical key override. Free egress at all times. Auto operator is turned off via the mortise keyswitch located in the lobby.

HARDWARE SETS

Set 2: Single Exit Doors
Door No.: 102A, 119A, 125

(1) Continuous Hinge	CFM95	SLF	PE
(1) Exit Device	16-8804	US32D	SA
(1) Door Closer	TB351 P10	EN	SA
(1) Threshold (Saddle)	950.N-0KB		PE
(1) Door Bottom	315 CN		PE
(1) Gasketing	303 AV		PE
(1) Drip Edge	PFMKO 346 C40	US32D	SA
(1) Lockset	SGTE 64 8205 LN MG	US32D	SA
(3) Silencers	608		RO

*Exception: Door 102A – see note for hardware access control no panic-exit device.

Set 3: Single Door (Non-Rated)
Door No.: 112, 119, 124, 123, 122

(3) Hinges	TA 4 ½ x 4 ½	US32D	MK
(1) Closer	351 UO	EN	SA
(3) Silencers	608		RO
(1) Storeroom Lock	10G04 LP	US26D	SA

Set 4: Single Door
Door No.: 111, 115, 116, 117, 118, 120, 121

(3) Hinges	TA 4 ½ x 4 ½	US32D	MK
(1) Closer	351 UO	EN	SA
(3) Silencers	608		RO
(1) Office Lock	10G04 LP	US26D	SA

* Exception: Door 110 – See note for hardware access control (office lock not required).

Set 5: Single Door
Door No.: 113, 114

(3) Hinges	TA 4 ½ x 4 ½	US32D	MK
(1) Closer	351 UO	EN	SA
(3) Silencers	608		RO
(1) Lock set	10U68	US26D	SA

* Provide the following for door hardware number 102A.
Trilogy PDL3000 PIN/PROX Lock
US26D Finish
Keypad Cylndrical 26D, Satin Chrome
(No Exceptions) Matches owners existing system.

END OF SECTION 08 71 00

DIVISION 9

FINISHES

SECTION 09 51 13 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general conditions of Contract, including General and Supplementary Conditions and Division 1 Specification sections apply to work of this section.

1.2 SUMMARY

A. Section Includes:

1. Acoustical ceiling panels.
2. Exposed grid suspension system.
3. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings.

B. Related Sections:

1. Specification Section 09 29 00 - Gypsum Board
2. Division 26 - Electrical

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM A 1008 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
2. ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
3. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
4. ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
5. ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
6. ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
7. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.
8. ASTM E 1414 Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum.
9. ASTM E 1111 Standard Test Method for Measuring the Interzone Attenuation of Ceilings Systems.
10. ASTM E 1264 Classification for Acoustical Ceiling Products.

11. ASTM E 1477 Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers.
12. ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
13. ASTM E 119 Standard Test Methods for Fire Tests of Building Construction and Material.

B. ASHRAE Standard 62.1-2004, "Ventilation for Acceptable Indoor Air Quality"

C. International Code Council-Evaluation Services - AC 156 Acceptance Criteria for Seismic Qualification Testing of Non-structural Components

D. International Code Council-Evaluation Services - Evaluation Report, ESR-1308, Fire- and Non-Fire-Resistance-Rated Suspended Ceiling Framing Systems

E. ASCE 7 Standard - American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures

F. CISCA Seismic Zones 3 & 4 - Ceilings and Interior Systems Construction Association Guidelines for Seismic Restraint for Direct Hung Suspended Ceiling Assemblies

1.4 SYSTEM DESCRIPTION

A. Seismic Loads: Design and size components to withstand seismic loads in accordance with the International Building Code, Section 1621 for Category D, E, and F.

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's technical data for each type of acoustical ceiling unit and suspension system required.

B. Samples: Minimum 6 inch x 6 inch samples of specified acoustical panel; 8 inch long samples of exposed wall molding and suspension system, including main runner and 4 foot cross tees.

C. Shop Drawings: Layout and details of acoustical ceilings. Show locations of items which are to be coordinated with or supported by the ceilings.

D. Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards. For acoustical performance, each carton of material must carry an approved independent laboratory classification of NRC, CAC, and AC.

E. If the material supplied by the acoustical subcontractor does not have an Underwriter's Laboratory classification of acoustical performance on every carton, subcontractor shall be required to send material from every production run appearing on the job to an independent or NVLAP approved laboratory for testing, at the Designer's or owner's discretion. All products not conforming to manufacturer's current published values must be removed, disposed of, and replaced with complying product at the expense of the Contractor performing the work.

1.6 QUALITY ASSURANCE

A. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer.

B. Fire Performance Characteristics: Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.

1. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 for Class A products.

a. Flame Spread: 25 or less.
b. Smoke Developed: 50 or less.

C. Seismic Performance: Provide acoustical ceiling system that has been evaluated by an independent party and found to be compliant with the 2003 International Building Code, Seismic Category D, E, and F.

1. Tested per International Code Council - Evaluation Services - AC 156 Acceptance Criteria for Seismic Qualification Testing of Non-structural Components as evidenced by International Code Council Evaluation Report, ESR-1308.

D. Handle acoustical ceiling units carefully to avoid chipping edges or damaged units in any way.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical ceiling units carefully to avoid chipping edges or damaged units in any way.

1.8 PROJECT CONDITIONS

A. Space Enclosure:

1. All ceiling products and suspension systems must be installed and maintained in accordance with Armstrong written installation instructions for that product in effect at the time of installation and best industry practice. Prior to installation, the ceiling product must be kept clean and dry, in an environment that is between 32°F (0°C) and 120°F (49°C) and not subject to Abnormal Conditions.
2. Abnormal conditions include exposure to chemical fumes, vibrations, moisture from conditions such as building leaks or condensation, excessive humidity, or excessive dirt or dust buildup.

3. HumiGuard Plus Ceilings: Installation of the products shall be carried out where the temperature is between 32°F (0° C) and 120°F (49° C). It is not necessary for the area to be enclosed or for HVAC systems to be functioning. All wet work (plastering, concrete, etc) must be complete and dry.
4. The ceilings must be maintained to avoid excessive dirt or dust buildup that would provide a medium for microbial growth on ceiling panels. Microbial protection does not extend beyond the treated surface as received from the factory and does not protect other materials that contact the treated surface such as supported insulation materials.

1.9 WARRANTY

A. Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace acoustical panels that fail within the warranty period. Failures include, but are not limited to:

1. Acoustical Panels: Sagging and warping as a result of defects in materials or factory workmanship.
2. Grid System: Rusting and manufacturer's defects.
3. Acoustical Panels with BioBlock Plus or designated as inherently resistive to the growth of micro-organisms: Visible sag and will resist the growth of mold/mildew and gram positive and gram-negative odor and stain causing bacteria.

B. Warranty Period:

1. Acoustical panels: Thirty (30) years from date of substantial completion.
2. Grid: Thirty (30) years from date of substantial completion.

C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.10 MAINTENANCE

A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.

1. Acoustical Ceiling Units: Furnish quality of full-size units equal to 5.0 percent of amount installed.
2. Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 2.0 percent of amount installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. A. Ceiling Panels:

1. Armstrong World Industries, Inc.

2.2 ACOUSTICAL CEILING UNITS

A. Acoustical Panels Type ACT-1:

1. Surface Texture: Medium
2. Composition: Mineral Fiber
3. Color: White
4. Size: 24 x 48 X 3/4in
5. Edge Profile: Lay In for interface with Prelude XL 15/16" Exposed Tee.
6. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton, 0.70.
7. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton, 40.
8. Emissions Testing: Section 01350 Protocol, < 13.5 ppb of formaldehyde when used under typical conditions required by ASHRAE Standard 62.1-2004, "Ventilation for Acceptable Indoor Air Quality"
9. Flame Spread: ASTM E 1264; Class A (UL)
10. Light Reflectance (LR): ASTM E 1477; White Panel: Light Reflectance: 0.85.
11. Dimensional Stability: HumiGuard Plus - Temperature is between 32°F (0° C) and 120°F (49° C). It is not necessary for the area to be enclosed or for HVAC systems to be functioning. All wet work (plastering, concrete, etc) must be complete and dry.
12. Antimicrobial Protection: BioBlock Plus - Resistance against the growth of mold/mildew and gram positive and gram-negative odor and stain causing bacteria.
13. Basis of Design Product: Subject to compliance with requirements, provide Fine Fissured, 1714 as manufactured by Armstrong World Industries; or comparable product by one of the following:

    a. USG Corporation
    b. CertainTeed

2.3 SUSPENSION SYSTEMS

A. Components: Main beams and cross tees in accordance with the International Building Code, Section 1621 for Category D, E and F as described in ESR-1308.

1. Structural Classification: ASTM C 635, Heavy Duty.
2. Color: White and match the actual color of the selected ceiling tile, unless noted otherwise.
3. Basis of Design Product: Subject to compliance with requirements, provide Prelude XL 15/16" Exposed Tee System as manufactured by Armstrong World Industries; or comparable product by one of the following:

    a. USG Corporation

b. CertainTeed

B. Attachment Devices: In accordance with the International Building Code, Section 1621 for Category D, E, and F.

C. Wire for Hangers and Ties: In accordance with the International Building Code, Section 1621.

D. Wall Moldings: In accordance with the International Building Code, Section 1621 for Category D, E. and F or method as described in ESR-1308.

1. Nominal 7/8 inch x 7/8 inch hemmed, pre-finished angle molding (7800) (7802) (7803) (780036) (HD7801)
2. Nominal 15/16 inch x 15/16 inch hemmed, pre-finished angle molding (7809)
3. Nominal 15/16 inch x 15/16 inch x 1/4 inch, pre-finished shadow molding (7877)
4. Nominal 15/16 inch x 15/16 inch x 3/8 inch, pre-finished shadow molding (7878)
5. Nominal 15/16 inch x 15/16 inch x 1/2 inch, pre-finished shadow molding (7897)

E. Accessories:

1. BERC2 - 2 inch Beam End Retaining Clip, 0.034 inch thick, hot-dipped galvanized cold-rolled steel per ASTM A568 - used to join main beam or cross tee to wall molding.
2. SJCG - Seismic Joint Clip, 5 inches x 1-1/2 inch, hot-dipped galvanized cold-rolled steel per ASTM A568. The two-piece unit is designed to accommodate a seismic separation joint. The clip is compatible with 15/16 inch and 9/16 inch grid systems including Prelude, Suprafine, and Silhouette The SJCG is not suitable for use with Vector panel installations.
3. SJMR15 - Seismic Joint Clip - Main Beam, 1 inch x 4 inches, commercial quality cold rolled hot dipped galvanized steel per ASTM A568, chemically cleansed.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out, unless expressly permitted by manufacturer's printed recommendations.

3.2 PREPARATION

A. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders and comply with reflected ceiling plans. Coordinate panel layout with mechanical and electrical fixtures.

B. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.

1. Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

3.3 INSTALLATION (Category D, E, F)

A. Install suspension system and panels in accordance with the International Building Code, Section 1621, except as noted in Section 4.4.3.1 of ESR-1308, and with the authorities having jurisdiction.

B. ESR-1308, Section 4.4.3.1, Alternate Seismic Design Category D, E and F Installation:

1. Under this installation, the runners must be rated heavy-duty and have a minimum simple span uniform load of 16.35 pounds per lineal foot (238 N/m); maximum ceiling weight permitted is 4.0 pounds per square foot (19.5 kg/m2).

a. The BERC-2 clip is used to secure the main runners and cross runners on two adjacent walls to the structure and the two opposite walls to the perimeter trim, as detailed below. A nominal 7/8-inch (22 mm) wall molding is used in lieu of the 2-inch (51 mm) perimeter supporting closure angle required by Section 9.6.2.6.2.2 (b) of ASCE-7 for Seismic Design Categories D, E and F. Except for the use of the BERC-2 clip and the 7/8-inch (22 mm) wall molding and elimination of spreader bars, installation of the ceiling system must be as prescribed by the applicable code.

b. The BERC-2 clip is attached to the wall molding by sliding the locking lances over the hem of the vertical leg of the wall molding. Clips installed on the walls where the runners are fixed are attached to the runner by a sheet metal screw through the horizontal slot in the clip into the web of the runner.

c. Alternate #2:

1) If acceptable to Designer, fixed attachment may be accomplished by pop-riveting the runner to the wall molding.

d. Clips installed on the walls where the runners are not fixed to the runner allow the terminal runner end to move 3/4 inch (19.1 mm) in both directions. BERC-2 clips installed in this manner are an acceptable means of preventing runners from spreading in lieu of spacer bars required in CISCA 3-4, which is referenced in ASCE 7, Section 9.6.2.6.2.2, which is referenced in IBC Section 1621.

C. The SJCG Seismic Separation Joint Clip is to be installed per the manufacturer's instructions, CS-3815.

D. The SJMR15 Seismic Joint Clip Main Beam is to be installed per the manufacturer's instructions, CS-3955.

E. The presence of a hanger wire within 3 inches of an expansion relief joint as called for in ASTM C636 shall be required in addition to the requirements of the International Building Code, Section 16 21 .2.5 and with the authorities having jurisdiction.

1. Only applies when using Prelude XL Fire Guard 15/16ï¿½; Prelude Plus XL Fire Guard 15/16ï¿½; and Suprafine XL Fire Guard 9/16ï¿½ Exposed Tee Systems.

F. For reveal edge panels: Cut and reveal or rabbet edges of ceiling panels at border areas and vertical surfaces.

G. Install acoustical panels in coordination with suspended system, with edges resting on flanges of main runner and cross tees. Cut and fit panels neatly against abutting surfaces. Support edges by wall moldings.

3.4 ADJUSTING AND CLEANING

A. Replace damaged and broken panels.

B. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage.

1. Ceiling Touch-Up Paint, (Item #5760, 8oz. bottles) (Item #5761, quart size cans), "global white" latex paint should be used to hide minor scratches and nicks in the surface and to cover field tegularized edges that are exposed to view.

C. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 09 51 13

SECTION 09 91 23 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

A. Extent of painting work is indicated on drawings and schedules, and as herein specified.

B. Work includes painting and finishing of interior exposed items and surfaces throughout project, except as otherwise indicated.

C. Surface preparation, priming and coats of paint specified are in addition to shop- priming and surface treatment specified under other sections of work.

D. "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.

E. 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, Designer will select these from standard colors or finishes available.

F. Following categories of work are not included as part of field-applied finish work.

1. Pre-Finished 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, pre-finished partition systems, acoustic materials 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, foundation spaces, furred areas, utility tunnels, pipe spaces, duct shafts and elevator shafts.
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.

G. Following categories of work are included under other sections of these specifications:

1. Shop Priming: Unless otherwise specified, shop priming of ferrous metal items is included under various sections for structural steel, metal fabrications, hollow metal work and similar items.

a. Unless otherwise specified, shop priming of fabricated components such as architectural woodwork, wood casework and shop- fabricated or factory-built mechanical and electrical equipment or accessories is included under other sections of these specifications.

H. Mechanical and Electrical Work: Painting of mechanical and electrical work is specified in Divisions 23 and 26, respectively.

I. Do not paint over any code-required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.

1.3 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.

1.4 SUBMITTALS:

A. Product Data: Submit manufacturer's technical information including paint label analysis and application instructions for each material proposed for use.

B. Samples: Prior to beginning work, Designer will furnish color chips for surfaces to be painted. Use representative colors when preparing samples for review. Submit samples for Designer's review of color and texture only. Provide a listing of material and application for each coat of each finish sample.

C. On actual wood surfaces, provide two 4" x 8" samples of natural and stained wood finish. Label and identify each as to location and application.

D. On concrete masonry, provide two 4" square samples of masonry for each type of finish and color, defining filler, prime and finish coat.

1.5 DELIVERY AND STORAGE:

A. 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 manufacturer.
4. Manufacturer's name.
5. Contents by volume, for major pigment and vehicle constituents.
6. Thinning instructions.
7. Application instructions.
8. Color name and number.

B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage of paint in a clean condition, free of foreign materials and residue.

C. Protect from freezing where necessary. Keep storage area neat and orderly. Remove oily rags and waste daily. 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.

1.6 PROJECT CONDITIONS:

A. Apply water-base 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 apply 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.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS:

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products, which may be incorporated in the work, include, but are not limited to, the following:

1. Sherwin Williams
2. PPG

2.2 MATERIALS:

A. Material Quality: Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade produce will not be acceptable.

B. Proprietary names used to designate colors or materials are not intended to imply that products of named manufacturers are required to exclusion of equivalent products of other manufacturers.

C. Federal Specifications establish minimum acceptable quality for paint materials. Provide written certification from paint manufacturer that materials provided meet or exceed these minimums.

D. Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.

E. Lead content in pigment, if any, is limited to contain not more than 0.06% lead, as lead metal based on the total non-volatile (dry film) of paint by weight.

1. This limitation is extended to interior surfaces and those exterior surfaces, such as stairs, decks, porches, railings, windows, and doors, which are readily accessible to children under seven years of age.

PART 3 - EXECUTION

3.1 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. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator.

B. Start of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area.

C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

3.2 SURFACE PREPARATION:

A. General: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.

B. Provide barrier coats over incompatible primers or existing topcoats. Remove and reprime as required. Notify Designer in writing of any anticipated problems in using the specified coating systems with substrates listed. Paint contractor is responsible for verifying conditions of paint substrates and their compatibility with specified topcoat systems.

C. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.

D. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from the cleaning process will not fall onto wet, newly painted surfaces.

E. Cementitious Materials: Prepare Cementitious surfaces of concrete, concrete block, cement plaster and cement-asbestos board to be painted by removing efflorescence, chalk, dust, dirt, grease, oils, and by roughening as required to remove glaze.

1. Determine alkalinity and moisture content of surfaces to be painted by performing appropriate tests. If surfaces are found to be sufficiently alkaline to cause blistering and burning if finish paint, correct this condition before application of paint. Do not paint over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.
2. Clean concrete floor surfaces, scheduled to be painted, with a commercial solution of muriatic acid, or other etching cleaner. Flush floor with clean water to neutralize acid and allow to dry before painting.

F. Wood: Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer, before application of priming coat. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood-filler. Sandpaper smooth when dried.

1. Prime, stain, or seal wood required to be job-painted immediately upon delivery to job. Prime edges, ends, faces, undersides, and backsides of such wood, including cabinets, counters, cases, and paneling.
2. When transparent finish is required, use spar varnish for back priming.
3. Seal tops, bottoms, and cut-outs of unprimed wood doors with a heavy coat of varnish or equivalent sealer immediately upon delivery to job.

G. Ferrous Metals: Clean ferrous surfaces, which are not galvanized or shop-coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.

H. Touch-up shop-applied prime coats wherever damaged or bare, where required by other sections of these specifications. Clean and touch-up with same type shop primer.

I. Galvanized Surfaces: Clean free of oil and surface contaminants with non-petroleum-based solvent.

3.3 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. Do not stir surface film into material. Remove film, and if necessary, strain material before using.

3.4 APPLICATION:

A. General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

B. Provide finish coats, which are compatible with prime paints used.

C. Apply additional coats when undercoats, stains or other conditions show through final coat of paint, until paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

D. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only before final installation of equipment.

E. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.

F. Paint backsides of access panels, and removable or hinged covers to match exposed surfaces.

G. Finish exterior doors on tops, bottoms, and side edges same as exterior faces, unless otherwise indicated.

H. Sand lightly between each succeeding enamel or varnish coat.

I. Omit first coat (primer) on metal surfaces, which have been shop-primed, and touch-up painted, unless otherwise indicated.

J. Scheduling Painting: 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.

K. 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.

L. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.

M. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to those items exposed in mechanical equipment rooms and in occupied spaces.

N. Prime Coats: Apply prime coat of material, which is required to be painted or finished, and which has not been prime coated by others.

1. 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.

O. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

P. Transparent (Clear) Finishes: Use multiple coats to produce glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.

1. Provide satin finish for final coats, unless otherwise indicated.

Q. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not in compliance with specified requirements.

3.5 CLEAN-UP AND PROTECTION:

A. Clean-Up: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each workday.

B. Upon completion of painting work, clean window glass and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

C. Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing, or replacing, and repainting, as acceptable to Designer.

D. Provide "Wet Paint" signs as required to protect newly- painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.

E. At completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

3.6 EXTERIOR PAINT SCHEDULE

A. General: Provide the following paint systems for the various substrates, as indicated.

B. CONCRETE MASONRY UNITS: Flat Acrylic Finish: 2 coats over filler coat with total dry film thickness not less than 2.5 mils, excluding filler coat.

1. Filler Coat:

   a. PPG Speedhide Latex Block Filler 6-7
   b. S.W. PrepRite Latex Block Filler B25W25
   c. Or equal.

2. First and Second Finish Coats:

   a. PPG Speedhide Ext. Latex Flat 6-610XI: Should a satin finish be desired, use PPG Speedhide Ext Satin 6-2045XI or Semi-Gloss 6-900XI.
   b. S.W. A-100 Ext. Latex Flat A-6 Series: Should a satin finish be desired, use SW A-100 Ext Satin A82-100 Series or Gloss A8 Series
   c. Or equal.

C. PRECAST OR TILT UP CONCRETE: High Build Acrylic Finish: 2 finish coats over a primer:

1. Primer Coat:

   a. PPG PermaCrete 4-603 Alkali Resistant Masonry Primer
   b. S.W. Loxon Concrete & Masonry Primer A24W08300 Series
   c. Or equal.

2. First and Second Coats:

   a. PPG PermaCrete 4-22 Series High Build Acrylic Finish
   b. S.W. Loxon Masonry Coating B24W01451 Series

c. Or equal.

D. FERROUS METAL: Gloss Alkyd Enamel: 2 finish coats over primer.

1. Primer Coat (Oil Finish):

a. PPG Multiprime 94-258 Fast Dry 2.8 VOC Universal Primer
b. S.W.Kem Kromik Universal Primer, B50Z
c. Or equal.

2. First and Second Coat Oil System:

a. PPG Industrial Enamel 7-282 Series
b. S.W. Industrial Enamel B54
c. Or equal.

E. FERROUS METAL: Gloss 100% Acrylic DTM Enamel: 2 finish coats over primer.

1. Primer Coat (Acrylic)

a. PPG 90-712 Series Pitt Tech Int/Ext 100% Acrylic DTM Primer Finish
b. S.W. DTM Acrylic Primer B66W1 Series
c. Or equal.

2. First and Second Coat Acrylic System:

a. PPG 90-374 Series Pitt Tech Int/Ext 100% Acrylic DTM Gloss Enamel
b. S.W. DTM Gloss Enamel B66W100 Series
c. Or equal.

F. ZINC-COATED METAL: High Gloss Alkyd Enamel: 2 finish coats over primer.

1. Prime Coat (Acrylic):

a. PPG Pitt Tech DTM Primer Finish 90-712
b. S.W. DTM Acrylic Primer B66W1 Series
c. Or equal.

2. First and Second Coats:

a. PPG Industrial Enamel 7-282 Series
b. S.W. Industrial Enamel B54 Series
c. Or equal.

G. ZINC COATED METAL: Gloss 100% Acrylic DTM Enamel: 2 finish coats over primer.

1. Primer Coat (Acrylic)

a. PPG 90-712 Series Pitt Tech Int/Ext 100% Acrylic DTM Primer Finish
b. S.W. DTM Acrylic Primer B66W1 Series
c. Or equal.

2. First and Second Coats:

a. PPG 90-374 Series Pitt Tech Int/Ext 100% Acrylic DTM Gloss Enamel
b. S.W. DTM Gloss Enamel B66W100 Series
c. Or equal.

H. WOOD: Semi-Gloss 100% Acrylic House Paint: 2 finish coats over a primer.

1. Primer Coat (Acrylic)

a. PPG 17-921 Seal Grip Int/Ext 100% Acrylic Universal Primer
b. S.W. Multi-Purpose Primer B51W00450 Series
c. Or equal.

2. First and Second Coats:

a. PPG Speedhide Ext. Latex Flat 6-610XI: Should a satin finish be desired, use PPG Speedhide Ext Satin 6-2045XI or Semi-Gloss 6-900XI.
b. S.W. A-100 Ext. Latex Flat A-6 Series: Should a satin finish be desired, use SW A-100 Ext Satin A82-100 Series or Gloss A8 Series
c. Or equal.

3.7 INTERIOR PAINT SCHEDULE

A. General: Provide the following paint systems for the various substrates, as indicated.

B. EXPOSED DUCT/ROOF DECKING: Spray dry fog, flat finish: 2 coats sprayed over appropriate primer using recommended size airless sprayer tip at manufacturer recommend mil thickness.

1. Primer Coat: (steel)

a. PPG Multiprime 94-258 2.8 VOC Universal Primer
b. S.W. Kem Kromik Metal Primer B50Z Series
c. Or equal.

2. First and Second Coats:

a. PPG Speedhide Interior Dry-Fog Spray Paint Flat Latex 6-715XI (Flat white)
b. S.W. Waterborne Acrylic Dryfall (B42 Series, Flat White)
c. Or equal.

C. CONCRETE MASONRY UNITS: Semi-Gloss Latex Enamel Finish: 2 coats over filled surface with total dry film thickness not less than 3.5 mils, excluding filler coat.

1. Filler Coat: Block Filler. Apply filler coat at a rate to ensure complete coverage with pores filled.

    a. PPG Speedhide Latex Block Filer 6-7
    b. S.W. PrepRite Latex Block Filler B25W25
    c. Or equal.

2. Latex Finishes:

    a. PPG Speedhide Latex Semi-gloss 6-500 Series
    b. S.W. ProMar 200 B31 Series Semi-gloss
    c. Or equal.

D. CONCRETE MASONRY UNITS- WET AREAS: Above tile in shower rooms, frequent wash areas, kitchen walls and dishwashing areas: Two coats of two component catalyzed epoxy over a block filler.

1. Block Filler:

    a. PPG Perma-Crete 4-100 Concrete Block & Masonry Surface/Filler
    b. S.W. Loxon Block Filler A24W200 Series
    c. Or equal.

2. First and Second Coats:

    a. PPG Aquapon WB 98-1 Series Polyamide Water Based Epoxy
    b. S.W. Pro Industrial Catalyzed Water Based Epoxy B73-300 Series
    c. Or equal.

E. GYPSUM DRYWALL SYSTEMS:

1. Primer Coat:

    a. PPG Speedhide Latex Primer 6-2
    b. S.W. Preprite 200 Wall Primer, B28W200
    c. Or equal.

2. First & Second Coat:

    a. PPG Speedhide Latex Eggshell 6-411 Series
    b. S.W. ProMar 200 Latex Eggshell, B20-220 Series
    c. Or equal.

F. GYPSUM DRYWALL SYSTEMS- RESTROOM WALLS:

1. Primer Coat:

   a. PPG Speedhide Latex Primer 6-2
   b. S.W. Preprite 200 Latex Primer B28W200
   c. Or equal.

2. First & Second Coats:

   a. PPG Pitt Glaze 16-310 Series Glaze WB1 Precatalyzed Eggshell Acrylic Epoxy
   b. S.W. Precatalyzed Water Based Eg-Shel Acrylic Epoxy K45W00151 Series
   c. Or equal.

G. FERROUS METAL: Semi-Gloss Enamel Finish: 2 coats over primer, with total dry film thickness not less than 2.5 mils.

1. Prime Coat:

   a. PPG Multiprime 94-258 2.8 VOC Universal Primer
   b. S.W. Kem Kromik Metal Primer, B50Z
   c. Or equal.

2. First & Second Coat Oil:

   a. PPG Speedhide Alkyd S/G 6-1110
   b. S.W. Promar 200 Alkyd S/9 Enamel, B34-200.
   c. Or equal.

H. FERROUS METAL: Gloss 100% Acrylic DTM Enamel: 2 finish coats over primer.

1. Primer Coat (Acrylic)

   a. PPG 90-712 Series Pitt Tech Int/Ext 100% Acrylic DTM Primer Finish
   b. S.W. DTM Acrylic Primer B66W1 Series
   c. Or equal.

2. First and Second Coats:

   a. PPG 90-374 Series Pitt Tech Int/Ext 100% Acrylic DTM Gloss Enamel
   b. S.W. DTM Gloss Enamel B66W100 Series
   c. Or equal.

I. ZINC-COATED METAL: Semi-Gloss Finish: 2 coats over primer, with total dry film thickness not less than 2.5 mils.

1. Prime Coat:

    a. PPG Pitt-Tech DTM Primer Finish 90-712
    b. S.W. DTM Acrylic Primer B66W1 Series
    c. Or equal.

2. Oil First & Second Coats:

    a. PPG Speedhide Alkyd S/G 6-1110
    b. S.W. Promar 200 Alkyd S/9 Enamel, B34-200
    c. Or equal.

J. ZINC-COATED METAL: Gloss 100% Acrylic DTM Enamel: 2 finish coats over primer.

1. Primer Coat (Acrylic)

    a. PPG 90-712 Series Pitt Tech Int/Ext 100% Acrylic DTM Primer Finish
    b. S.W. DTM Acrylic Primer B66W1 Series
    c. Or equal.

2. First and Second Coats:

    a. PPG 90-374 Series Pitt Tech Int/Ext 100% Acrylic DTM Gloss Enamel
    b. S.W. DTM Gloss Enamel B66W100 Series
    c. Or equal.

K. PAINTED WOODWORK AND HARDBOARD: Semi-Gloss Enamel Finish: 3 coats.

1. Prime Coat:

    a. PPG Seal Grip 17-921 Int/Ext 100% Acrylic Universal Primer
    b. S.W. Preprite Pro Block Acrylic Primer B51W00620 Series
    c. Or equal.

2. Oil Second & Third Coats:

    a. PPG Speedhide Alkyd S/G 6-1110
    b. S.W. Promar 200 Alkyd S/9 Enamel, B34-200
    c. Or equal.

L. STAINED WOODWORK: Stained - Varnish Rubbed Finish: 3 finish coats over stain plus filler on open grain wood.

1. Stain Coat: Interior Oil Stain:

    a. PPG Deft DFT400 Series Premium Oil Based Wood Stain
    b. S.W. Wood Classic Interior Oil Stain, A49-200
    c. Or equal.

2. Second and Third Coats: Oil Rubbing Varnish:

    a. PPG Deft DFT26 Series Defthane Satin Polyurethane
    b. S.W. Wood Classic Fast Dry Oil Varnish A66-300
    c. Or equal.

END OF SECTION 09 91 23

DIVISION 10

SPECIALTIES

SECTION 10 71 13 – EXTERIOR SUN CONTROL DEVICES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Fixed blade extruded-aluminum exterior mounted louvered sunshades including attachment brackets and trim.

1.2 PERFORMANCE REQUIREMENTS

A. Design: Design sunshades, including comprehensive engineering analysis by a qualified engineer, using structural performance requirements and design criteria indicated.

B. Structural Performance: Sunshades shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated without permanent deformation of sunshade components and mounting brackets, or permanent damage to fasteners and anchors.

1. Wind Loads: Determine loads based on a uniform pressure of 30 lb./sq. ft. (1435 Pa), acting perpendicular to sunshade surfaces.
2. Wind Speed Rating: 100 MPH.
3. Design shall meet IBC design criteria.

C. Thermal Movements: Provide sun control system that allows for thermal movements resulting from a maximum change in ambient and surface temperature as indicated without buckling, overstressing of components, failure of connections, or other detrimental effects.

1. Temperature Range: 120° F (49° C) ambient and 180° F (82° C) at material surfaces.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

1. Include technical data demonstrating mounting and fastening methods, material descriptions, construction details, dimensions of assemblies and components, appearance details, and finishes.

B. Shop Drawings: For exterior sunshades and accessories. Include plans, elevations, sections, details, and attachments to other work. Show frame profiles and blade profiles, angles, and spacing.

C. Samples: For each type of metal finish required.

D. Submittal: For sunshades indicated to comply with structural performance requirements and design criteria.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aluminum Extrusions: ASTM B 221M, Alloy 6063-T5.

B. Aluminum Sheet: ASTM B 209M, Alloy 3003 with temper as required for forming.

C. Fasteners: Use types and sizes to suit unit installation conditions.

1. For fastening aluminum, use aluminum or stainless-steel fasteners.

2.2 FABRICATION, GENERAL

A. Fabricate frames, including outriggers, in dimensions as indicated. Include allowances for fabrication and installation tolerances, adjoining material tolerances, and thermal movements.

B. Space the blades as indicated, and the outermost blades within the frame, to create a uniform appearance.

C. Join frame members to each other and to fixed louver blades with threaded fasteners concealed from view.

2.3 FIXED, EXTRUDED-ALUMINUM EXTERIOR SUNSHADES

A. Standard Profile Blade Louvered Sun Control System

1. Basis-of-Design Product: Architectural Louvers Co. (Harray, LLC); Model H6JN. Subject to compliance with requirements, provide the specified product or comparable product by one of the following:

    a. Architectural Louvers – http://www.archlouvers.com – phone: 888-568-8371
    b. Or Approved Equal

2. Frame Depth: 6 inches (152 mm)
3. Trim Profile: Rectangular tube
4. Blade Profile: Narrow profile plain blade. Profile H6JN – 6” deep.
5. Blade Angle: 25%
6. Blade Spacing: 6 inches (152 mm) on center
7. Outrigger Thickness: Not less than 0.125 inch (2.54 mm) for structural shapes, not less than 0.25 inch (6.35 mm) for flat materials.
8. Frame and Blade Nominal Thickness: Not less than 0.080 inch (2.03 mm).

2.4 ALUMINUM FINISHES

A. High-Performance Organic Finish: 3-coat fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

1. Color and Gloss: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Locate and mount sunshades level, plumb, and at indicated alignment with adjacent work.

B. Use fastening and mounting methods in accordance with manufacturer instructions.

C. Use concealed anchorages where possible, with locations as directed by manufacturer instructions.

D. Repair damaged finishes so no evidence remains of corrective work. Return items that cannot be refinished in the field to the factory and refinish entire unit or provide new units.

E. Protect galvanized and unfinished nonferrous-metal surfaces that will be in contact with concrete, masonry, or dissimilar metals from corrosion and galvanic action by applying a heavy coating of bituminous paint.

END OF SECTION 10 71 13

DIVISION 12

FURNISHINGS

SECTION 12 36 61.16 - SOLID SURFACING COUNTERTOPS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Solid surface material countertops.

1.2 ACTION SUBMITTALS

A. Product Data: For countertop materials.

B. Shop Drawings: For countertops and windowsills. Show materials, finishes, edge and backsplash profiles, methods of joining, and cutouts for plumbing fixtures.

1. Show locations and details of joints.
2. Show direction of directional pattern, if any.

C. Samples for Initial Selection: For each type of material exposed to view.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For solid surface material countertops to include in maintenance manuals. Include Product Data for care products used or recommended by Installer and names, addresses, and telephone numbers of local sources for products.

1.5 QUALITY ASSURANCE

A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate countertops similar to that required for this Project, and whose products have a record of successful in-service performance.

B. Installer Qualifications: Fabricator of countertops.

1.6 FIELD CONDITIONS

A. Field Measurements:
   1. Verify dimensions of countertops by final field measurements after base cabinets are installed but before countertop fabrication is complete.

1.7 COORDINATION

A. Coordinate locations of utilities that will penetrate countertops or backsplashes.

PART 2 - PRODUCTS

2.1 SOLID SURFACE COUNTERTOP MATERIALS

A. Solid Surface Material: Homogeneous-filled plastic resin complying with ICPA SS-1.

   1. Basis of Design: Subject to compliance with requirements, provide Corian Solid Surface or approved substitute by one of the following:
      a. Wilsonart Solid Surface
      b. Formica Solid Surface
   2. Colors and Patterns: Architect’s selection for manufacturers full range.

B. Plywood: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.

2.2 COUNTERTOP FABRICATION

A. Fabricate countertops according to solid surface material manufacturer's written instructions and to the AWI/AWMAC/WI's "Architectural Woodwork Standards."

   1. Grade: Premium

B. Configuration:

   1. Front: Straight, slightly eased at top

C. Countertops: 3/4-inch- (19-mm-) thick, solid surface material with front edge built up with same material.

D. Fabricate tops with shop-applied edges unless otherwise indicated. Comply with solid surface material manufacturer's written instructions for adhesives, sealers, fabrication, and finishing.

   1. Fabricate with loose backsplashes for field assembly, if applicable.

E. Joints: Fabricate countertops without joints, where possible.

F. Joints: Fabricate countertops in sections for joining in field.

1. Joint Locations: Not within 18 inches (450 mm) of a sink or cooktop and not where a countertop section less than 36 inches (900 mm) long would result, unless unavoidable.
2. Splined Joints: Accurately cut kerfs in edges at joints for insertion of metal splines to maintain alignment of surfaces at joints. Make width of cuts slightly more than thickness of splines to provide snug fit. Provide at least three splines in each joint.

G. Cutouts and Holes:

1. Undercounter Plumbing Fixtures: Make cutouts for fixtures in shop using template or pattern furnished by fixture manufacturer. Form cutouts to smooth, even curves.

    a. Provide vertical edges, slightly eased at juncture of cutout edges with top and bottom surfaces of countertop and projecting 3/16 inch (5 mm) into fixture opening.

2. Counter-Mounted Plumbing Fixtures: Prepare countertops in shop for field cutting openings for counter-mounted fixtures. Mark tops for cutouts and drill holes at corners of cutout locations. Make corner holes of largest radius practical.
3. Fittings: Drill countertops in shop for plumbing fittings, undercounter soap dispensers, and similar items.

2.3 INSTALLATION MATERIALS

A. Adhesive: Product recommended by solid surface material manufacturer.

B. Sealant for Countertops: Comply with applicable requirements in Specification Section 07 92 00 – Joint Sealants.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates to receive solid surface material countertops and conditions under which countertops will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of countertops.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install countertops level to a tolerance of 1/8 inch in 8 feet (3 mm in 2.4 m), 1/4 inch (6 mm) maximum. Do not exceed 1/64-inch (0.4-mm) difference between planes of adjacent units.

B. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Predrill holes for screws as recommended by manufacturer. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.

C. Fasten sub tops to cabinets by screwing through sub tops into corner blocks of base cabinets. Shim as needed to align sub tops in a level plane.

D. Secure countertops to sub tops with adhesive according to solid surface material manufacturer's written instructions. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.

E. Bond joints with adhesive and draw tight as countertops are set. Mask areas of countertops adjacent to joints to prevent adhesive smears.

1. Install metal splines in kerfs in countertop edges at joints. Fill kerfs with adhesive before inserting splines and remove excess immediately after adjoining units are drawn into position.
2. Clamp units to temporary bracing, supports, or each other to ensure that countertops are properly aligned, and joints are of specified width.

F. Install backsplashes and end splashes by adhering to wall and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears.

G. Install aprons to backing and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears. Fasten by screwing through backing. Predrill holes for screws as recommended by manufacturer.

H. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.

1. Seal edges of cutouts in particleboard sub tops by saturating with varnish.

I. Apply sealant to gaps at walls; comply with Specification Section 07 92 00 – Joint Sealants.

END OF SECTION 12 36 61.16

DIVISION 31

EARTHWORK

SECTION 31 20 00 - EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division l Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Extent of earthwork is indicated on drawings.

B. Preparation of subgrade for building slabs, walks, and pavements is part of this work.

C. Excavation and backfill required in conjunction with underground mechanical, plumbing and electrical utilities and appurtenances is included as part of this work.

D. Definition: "Excavation" consists of removal of material encountered to subgrade elevations indicated and subsequent disposal of materials removed.

1.3 QUALITY ASSURANCE

A. Codes and Standards: Perform excavation work in compliance with applicable requirements of governing authorities.

B. Testing and Inspection Service: Employ, at Contractor's expense, testing laboratory to perform soil testing and inspection service for quality control testing during earthwork operations.

1.4 SUBMITTALS

A. Test Reports-Earthwork: Submit following reports directly to Architect/Engineer from the testing services, with copy to Contractor:

B. Test reports on borrow material(s) to include sieve analysis, material classification, optimum moisture – density curve per ASTM D-698.

C. Tests reports on on-site material being used for fill to include sieve analysis, material classification, optimum moisture – density curve per ASTM D-698.

D. Field density test reports and reports of any undercut, including measured volume.

1.5 JOB CONDITIONS

A. Site Information: Data on indicated subsurface conditions is not intended as representation or warranty of accuracy or continuity between soil borings. It is expressly understood that Owner will not be responsible for interpretations or conclusions drawn therefrom by Contractor. Data is made available purely for convenience of Contractor.

B. Contractor shall visit the site and may, at no cost to the Owner, make additional test borings and/or use other exploratory methods prior to bidding.

C. It is presumed that the contractor inspected the site prior to bidding and to have read and be thoroughly familiar with Plans and Contract Documents (including all addenda). Failure or omission of any Bidder to examine the site, shall in no way relieve the contractor from any obligation with respect to the construction of the project. No consideration will be given any claim based on lack of knowledge of existing conditions.

D. Bidders shall notify the Architect immediately should, during his examination of the site or any of the associated documents, he finds a discrepancy.

E. Existing Utilities: Locate existing utilities in areas of work. Contractor shall provide adequate means of support and protection during earthwork operations for utilities to remain in place. While the Owner's surveyor has attempted to locate and show on the existing conditions drawings the utilities that exist on the site, those shown are not necessarily all that exist. The contractor is responsible for using the "One-Call" system prior to beginning construction. No additional compensation will be allowed for crossing additional utilities which are not in direct conflict with the work or for which in the opinion of the Engineer minor horizontal or vertical changes in the proposed work could be made to avoid the conflict.

F. Should uncharted, or incorrectly charted piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.

G. Do not interrupt existing utilities serving facilities occupied and used by Owner or others, during occupied hours, except when permitted in writing by Architect/Engineer and Owner of the Utility. Provide acceptable temporary utility services prior to interruption.

H. Demolish and completely remove from the site existing underground utilities indicated to be removed. Coordinate with utility companies for shut-off of services if lines are active.

I. Use of Explosives: Explosives are prohibited from use and are not allowed on site unless specifically approved in writing by the Architect/Engineer and Owner.

J. Protection of Persons and Property: Barricade open excavations occurring as part of this work and post with warning lights. Operate warning lights as recommended by authorities.

K. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

L. Trees: Perform excavation by hand within dripline of 8” dbh or larger trees and protect the root system from damage or dry out to the greatest extent possible. Maintain moist condition for root system and cover exposed roots with burlap. Paint root cuts of 1" diameter and larger with emulsified asphalt tree paint.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Definitions:

1. Satisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups GW, GP, GM, SM, SW, SP, GC, SC, ML, and CL.
2. Unsatisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups MH, CH, OL, OH and PT.
3. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, crushed slag, and natural or crushed sand.
4. Drainage Fill: Washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, with 100% passing a l½" sieve and not more than 5% passing a No. 4 sieve.
5. Backfill and Fill Materials: Satisfactory soil materials free of clay, rock, or gravel larger than 2" in any dimension, debris, waste, frozen materials, vegetable, and other deleterious matter.

PART 3 - EXECUTION

3.1 EXCAVATION

A. Removal of Topsoil: Before beginning excavation, topsoil shall be removed from all surfaces to be excavated and all surfaces to receive embankment. The topsoil shall be excavated to a minimum depth of six inches and shall be deposited in storage piles. After achieving final grades less topsoil thickness, topsoil shall be spread on the entire embankment and excavation area except for areas to be paved. All topsoil removed and stored shall be re-spread. On areas which are to receive topsoil, the subgrade shall be scarified to a depth of 2". Topsoil shall be evenly spread and graded to the lines, grades, and typical cross-sections shown on the drawings and as directed by the Engineer. All excavation shall be finished within a tolerance of 0.1 foot of the grades indicated.

B. Excavation is unclassified, and includes excavation to subgrade elevations indicated, regardless of character of materials and obstructions encountered.

C. Excavation includes excavation of pavements, obstructions, debris, underground structures, utilities, and other items indicated to be demolished and removed; together with earth and other materials encountered that are not classified as rock or unauthorized excavation.

D. There is no guarantee that the material required to be excavated from the site is of sufficient quality to be used in any required fill. As indicated above, the contractor should familiarize himself with the site, the quality of excavated materials, and the provided geotechnical data.

E. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be at Contractor's expense.

1. Under footings, foundation bases, or retaining walls, fill unauthorized excavation by extending indicated bottom elevation of footing or base to excavation bottom, without altering required top elevation, Lean concrete fill may be used to bring elevations to proper position, when acceptable to Engineer.
2. Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by Engineer.

F. Additional Excavation: When excavation has reached required subgrade elevations, notify Engineer who will inspect conditions.

1. If unsuitable bearing materials are encountered at required subgrade elevations, carry excavations deeper and replace excavated material as directed by Engineer.
2. Removal of unsuitable material and its replacement as directed shall be paid as indicated in the payment section.

G. Stability of Excavations: Slope sides of excavations to comply with local codes and ordinances having authority. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated.

H. Maintain sides and slopes of excavations in safe condition until completion of backfilling.

I. Shoring and Bracing: Provide materials for shoring and bracing, such as uprights, stringers and cross-braces, in good serviceable condition.

1. Establish requirements for trench shoring and bracing to comply with local codes and authorities.
2. Maintain shoring and bracing in excavations regardless of time excavations will be open. Carry down shoring and bracing as excavation progresses.

J. Dewatering: Prevent surface water and subsurface or ground water from flowing into excavations and from flooding project site and surrounding area.

1. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavation.
2. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rainwater and water removed from excavations to collecting or run-off areas. Do not use trench excavations as temporary drainage ditches.

K. Material Storage: Stockpile satisfactory excavated materials where directed, until required for backfill or fill. Place, grade, and shape stockpiles for proper drainage.

1. Locate and retain soil materials away from edge of excavations.
2. Dispose of excess soil material and waste materials as herein specified.

L. Excavation for Structures: Conform to elevations and dimensions shown within a tolerance of plus or minus 0.05’ and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, other construction, and for inspection.

1. In excavating for footings and foundations, take care not to disturb bottom of excavation. Excavate by hand to final grade just before concrete reinforcement is placed. Trim bottoms to required lines and grades to leave solid base to receive other work.

M. For pile foundation, stop excavations between 6" and 12" above bottom of footing before piles are placed. After piles have been driven, remove loose and displaced material and excavate to final grade leaving solid base to receive concrete pile caps.

N. Excavation for Pavements: Cut or fill surface under pavements to comply with cross-sections, elevations and grades as shown.

O. Excavation for Trenches: Dig trenches to uniform width required for item to be installed, sufficiently wide to provide ample working room Provide 6" to 9" clearance on both sides of pipe or conduit.

1. Excavate trenches to depth indicated or required. Carry depth of trenches for piping to establish indicated flow lines and invert elevations. Beyond building perimeter, keep bottoms of trenches sufficiently below finish grade to avoid freeze-ups.
2. For pipes or conduit 5" or less in nominal size and for flat-bottomed, multiple-duct conduit units, do not excavate beyond indicated depths. Hand excavate bottom cut to accurate elevations and support pipe or conduit on undisturbed soil.
3. For pipes or conduit 6" or larger in nominal size, tanks and other mechanical/electrical work indicated to receive subbase, excavate to subbase depth indicated, or, if not otherwise indicated, to 6" below bottom of work to be supported.
4. Grade bottoms of trenches as indicated, notching under pipe bells to provide solid bearing for entire body of pipe.
5. Backfill trenches with concrete where trench excavations pass within 18" of column or wall footings and which are carried below bottom of such footings, or which pass under wall footings. Place concrete to level of bottom of adjacent footing.
6. Concrete is specified in Division 3.
7. Do not backfill trenches until tests and inspections have been made and backfilling authorized by Engineer. Use care in backfilling to avoid damage or displacement of pipe systems.
8. For piping or conduit less than 2’6" below surface of roadways, provide 4" thick concrete base slab support. After installation and testing of piping or conduit, provide minimum 4" thick encasement (sides and top) of concrete prior to backfilling or placement of roadway subbase.

P. Excavation for Walks: Cut or fill surfaces under sidewalks to comply with elevations and grades shown in the plans. Cross slopes shall comply with ADA regulations. Allow for minimum of 4” of sand under walks.

Q. Cold Weather Protection: Protect excavation bottoms against freezing when atmospheric temperature is less than 35 degrees F (l degree C).

3.2 COMPACTION

A. General: Control soil compaction during construction providing minimum percentage of density specified for each area classification indicated below.

B. Percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum density for soils when exhibit a well-defined moisture density relationship (cohesive soils) determined in accordance with ASTM D 698; and not less than the following percentages of relative density; determined in accordance with ASTM D 2049, for soils which will not exhibit a well-defined moisture-density relationship (cohesionless soils).

1. Moisture contents for cohesive soils shall be within 3% of optimum moisture during placement and compaction.

C. Structures, building slabs, and steps: Compact top 12" of subgrade and each layer of backfill or fill material at 95% maximum density for cohesive material. For fills 5 feet deep or greater thickness increase compaction for the entire fill depth to 97% maximum density for cohesive material. Documents may designate other compaction densities for special areas.

D. Pavements: Compact the top 6" in cut areas and the top 12" of fill material at 100% maximum density for cohesive material. Remove cohesionless materials from this area and backfill with cohesive material compacted to above densities. Compact each layer of fill below the top 12" at 95% of maximum density for cohesive material.

E. Lawn or Unpaved Areas: Compact top 6" of subgrade and each layer of backfill or fill material at 85% maximum density for cohesive soils.

F. Paved Walkways: Excavate subgrade to a minimum of 4 inches below bottom of walkway to allow for sand base. Compact top 6" of subgrade and each layer of backfill, fill material and base at 95% maximum density for cohesive material.

G. Moisture Control: Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during or after compaction operations.

1. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
2. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing, or pulverizing until moisture content is reduced to a satisfactory value.

3.3 BACKFILL AND FILL

A. General: Place acceptable soil material in layers to required subgrade elevations, for each area classification listed below.

B. Under grassed areas, use satisfactory excavated or borrow material.

C. Under building slabs, excavate or use satisfactory fill material to achieve subgrade then place drainage fill material.

D. Under walks and pavements, use subbase material, or satisfactory excavated or borrow material, or combination of both. Use 4” sand under concrete sidewalks.

E. Under steps, use subbase material.

F. Under piping and conduit, use subbase material where subbase is indicated under piping or conduit; shape to fit bottom 90 degrees of cylinder.

G. Backfill excavations as promptly as work permits, but not until completion of the following:

1. Acceptance of construction below finish grade.
2. Inspection, testing, approval, and recording locations of underground utilities.
3. Removal of concrete formwork.
4. Removal of shoring and bracing, and backfilling of voids with satisfactory materials.
5. Removal of trash and debris.
6. Permanent or temporary horizontal bracing is in place on horizontally supported walls.

H. Ground Surface Preparation

1. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow strip or break up sloped surfaces steeper than l vertical to 4 horizontal so that fill material will bond with existing surface.
2. When existing ground surface has a density less than that specified under "Compaction" for an area, break up ground surface, pulverize, moisture condition to optimum moisture content, and compact to required depth and percentage of maximum density.

I. Placement and Compaction

1. Place backfill and fill materials in layers not more than 8" in loose depth for material compacted by heavy compaction equipment, and not more than 6" in loose depth for material compacted by hand operated tampers.
2. Before compaction, adjust moisture as necessary to within specified range. Compact each layer to required density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen or contain frost or ice.
3. Place backfill and fill materials evenly adjacent to structures, piping or conduit to required elevations. Take care to prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping, or conduit to approximately same elevation in each lift.

3.4 GRADING

A. General: Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.

B. Grading Outside Building Lines: Grade areas adjacent to building lines to drain away from structures and to prevent ponding.

C. Finish surfaces free from irregular surface changes, and as follows:

D. Lawn or Unpaved Areas: Finish areas to receive topsoil to within 0.10' of required subgrade elevations except at sidewalks. Finish grades on upper side of walk shall be from the walk to a maximum of 0.1' above sidewalk prior to placement of sod. Finish grades on lower side of walk shall be from the walk to a maximum of 0.1' below after placement of sod.

E. Walks: Shape surface of areas under walks to line, grade, and cross-section, with finish surface not more than 0.10' above or below required subgrade elevation. Finished walk shall be ADA compliant both in running slope and cross slope.

F. Pavements: Shape surface of areas under pavement to line, grade, and cross-section, with finish surface not more than ½" above or below required subgrade elevation. CAUTION: Handicapped parking spaces and access isles shall not exceed 2% in any direction.

G. Grading Surface under Building Slabs: Grade smooth and even, free of voids, compacted as specified, and to required elevation. Provide final grades within a tolerance of ½" when tested with a 10' straightedge.

H. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or relative density for each area classification.

3.5 FIELD QUALITY CONTROL

A. Quality Control Testing During Construction: Allow testing service to inspect and approve subgrades and fill layers before further construction work is performed.

B. Perform field density tests in accordance with ASTM D 2922-91.

C. Paved Areas and Building Slab Subgrade: Make at least one field density test of subgrade for every 5000 square feet of paved area or building slab, but in no case less than 3 tests. In each compacted fill layer, make one field density test for every 5000 square feet of overlaying building slab or paved area, but in no case less than 3 tests.

D. Foundation Wall Backfill: Take at least 2 field density tests, at locations and elevations as directed.

E. If in opinion of Engineer, based on testing service reports and inspection, subgrade or fills which have been placed are below specified density, provide additional compaction, and testing at no additional expense.

3.6 MAINTENANCE

A. Protection of Graded Areas: It is the Contractors responsibility to protect newly graded areas from traffic, overloading, loading under excessive moisture conditions and erosion. Completed and tested areas subsequently deteriorated shall be repaired at the contractor's expense. Keep free of trash and debris.

B. It is the contractor's responsibility to maintain the site during the construction process to prevent excessive rutting, ponding, erosion, and deterioration of the soils around the building. The contractor shall grade and or "back drag" areas around the building on a regular, often daily, basis to direct water away from the building and to prevent the above-mentioned conditions. Specifically, areas to receive later improvements such as sidewalks, shall be protected from deterioration. Any undercut for removal of poor soils for construction of sidewalks, etc. shall be the responsibility of the contractor without additional compensation.

C. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.

D. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to required density prior to further construction.

E. Settling: Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn, or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work and eliminate evidence of restoration to greatest extent possible.

3.7 DISPOSAL OF EXCESS AND WASTE MATERIALS

A. Burning of carbonaceous material on site is allowed only if approved by the local Fire Department and the Owner. Burning shall be in a manner approved by the Fire Department.

B. Removal to Offsite Property: Transport, trash, debris, and waste demolition materials to a location off Owner's property. Disposal shall be in accordance with agreement between contractor and owner of the property used for disposal.

C. Removal to Designated Areas on Owner's Property: Acceptable excess excavated soil may be disposed of on Owner's property if and only if designated. Spread soil as directed by Engineer and fully stabilize against erosion.

3.8 PAYMENT

A. Earthwork: No specific measurement or payment shall be made for Earthwork indicated on the drawings. Payment for earthwork shall be included in lump sum bid.

B. Additional Excavation: Removal of unsuitable materials and its replacement with acceptable on-site material, compaction and testing shall be paid on the basis of cubic yards of material removed at $5.00 per cubic yard. If there is an insufficient amount of on-site material available for backfill, a price shall be negotiated for off-site material.

END OF SECTION 31 20 00

SECTION 31 25 00 – EROSION CONTROL

PART 1 - GENERAL

1.1 WORK INCLUDED

A. This work includes the filing with the State of Tennessee Department of Environment and Conservation (TDEC), or a signing onto, of a "Notice of Intent" (NOI), development, execution and implementation of a site-specific "Storm Water Pollution Prevention Plan" (SWPPP) to control erosion and water pollution during construction, maintenance of a log book for the project, regular inspections by certified personnel of the erosion control measures, revisions of the SWPPP, revisions to the erosion control plan as necessary during construction, and filing of a "Notice of Termination" (NOT) when the site is fully stabilized. The contractor is advised that erosion control prevention is an ongoing continuous process during construction. Any erosion control plans presented by the Engineer shall be considered general in nature and may not apply during all phases of construction. In addition, the erosion control plan may have to be modified or additional features added in the field to accomplish the goal of not allowing sediment to leave the site.

1.2 RELATED WORK

A. Section 01 29 00: Payment Procedures

B. Section 01 77 00: Closeout Procedures

C. Section 32 92 00: Turfs and Grasses

D. Section 32 92 23: Sodding

PART 2 - PRODUCTS

2.1 SEDIMENT STRUCTURES

A. Sediment basins or traps are prepared storage areas constructed to trap and store sediment from erodible areas to protect downstream properties and channels from excessive siltation. Sediment basins shall be designed and constructed in accordance with the current edition of Tennessee Erosion and Sediment Control Handbook.

2.2 SILT FENCES

A. Silt fences are woven geosynthetic materials stapled to hardwood posts spaced six to eight feet apart. They are to be staged on the construction site to filter runoff water and trap sediments on the site. The fences are to be set in 4-inch x 4-inch trenches that are backfilled and compacted to prevent undercutting of the fences.

2.3 SEEDING AND MULCHING

A. Seeding and Mulching consists of fertilizing, seeding, mulching and/or installing erosion control blankets (ECB) as specified elsewhere utilized to prevent erosion. All areas shall be seeded with mulch or ECB within fifteen (15) days of achieving final grade.

2.4 TEMPORARY BERMS

A. A temporary berm is constructed of compacted soil, with or without a shallow ditch, at the top of fill slopes or transverse to centerline on fills.

B. These berms are used temporarily at the top of newly constructed slopes to prevent excessive erosion until permanent controls are installed or slopes stabilized.

2.5 TEMPORARY SLOPE DRAINS

A. A temporary slope drain is a facility consisting of stone gutters, fiber mats, plastic sheets, concrete or asphalt gutters, half-round pipe, metal pipe, plastic pipe, sod or other material acceptable to the Engineer.

B. Temporary slope drains are used to carry water down slopes to reduce erosion.

2.6 CHECK DAMS

A. Check dams are barriers composed of logs and poles, large stones or other materials placed across a natural or constructed drain way.

B. Stone check dams shall not be utilized where the drainage area exceeds fifty (50) acres. Log and pole structures shall not be used where the drainage area exceeds five (5) acres.

2.7 BRUSH BARRIERS

A. Brush barriers shall consist of brush, tree trimmings, shrubs, plants, and other approved refuse from the clearing and grubbing operations.

B. Brush barriers are placed on natural ground at the bottom of fill slopes where the most likely erodible areas are located to restrain sedimentation particles.

2.8 BALED HAY OR STRAW CHECKS

A. Baled hay or straw erosion checks are temporary measures to control erosion and present siltation. Bales shall be either hay or straw containing five (5) cubic feet or more of material.

B. Baled hay or straw checks shall be used where the existing ground slopes toward or away from the embankment along the toe of slopes, in ditches, or other areas where siltation erosion or water run-off is a problem.

PART 3 - EXECUTION

3.1 PERMIT

A. For projects which will ultimately disturb more than one (1) acre, file or sign on to a previously filed “Notice of Intent” with TDEC, including the payment of permit fees at least thirty (30) days prior to beginning of construction.

B. Do not begin work prior to the receipt of the “Notice of Coverage” (NOC) from TDEC.

C. After complete stabilization of the site, the Contractor shall file or assist the Owner in filing a “Notice of Termination” (NOT) with TDEC indicating the end of the earth disturbing activities and full stabilization of the site.

3.2 PLAN AND IMPLEMENTATION

A. The contractor shall develop and implement a storm water pollution plan (SWPPP) specific to the project site that minimizes discharge of soil and other pollutants to waters of the State. The plan shall include but not be limited to a description of the construction activity with a proposed timetable, estimates of total site area and area to be disturbed, estimate of increased impervious area after construction, estimate of runoff volume from a two year 24-hour storm, description of fill material used, and a specific site map with slopes, structural controls, and permanent cover to be established.

B. The plan shall be shown in phases as necessary to reflect the contractors phasing of the construction and partial stabilization, etc.

C. The Owner, contractor, and subcontractors who may impact storm water or site controls shall sign the plan, stating that it meets requirements and is workable. The plan must be kept on site during construction.

D. Should an Erosion Control Plan be presented as part of the project plans, the contractor shall carefully evaluate the plan prior to bidding in relation to his proposed operations and plan of construction and modify the plan accordingly. Prepare revisions to the SWPPP to reflect the proposed changes to the plan. The contractor shall be responsible, at his expense, for maintaining, replacing, and/or modifying controls in the field through the life of the construction project to prevent sediment from leaving the site.

E. The contractor and subcontractors that may impact storm water runoff or structural controls shall sign the following statement:

"I understand the terms and conditions of Rule 1200-4-10-.05 and that I, and my company, as the case may be, am responsible for and legally liable for complying with this and the applicable state and federal laws. I understand that state, EPA or private actions may be taken against me if the terms and conditions of the Rule are not met."

Statements are to be kept on file at the site or nearby.

3.3 DOCUMENTATION

A. Prior to any disturbance on site, the contractor shall provide to the engineer a signed copy of the notice of intent, along with evidence of the inspector certification as required by TDEC. All inspection reports required by regulation shall be attached to each following pay request. Inspection reports shall be in accordance with the current edition of Tennessee Erosion and Sediment Control Handbook.

B. Any changes to the plan shall be accompanied by a change in the SWPPP prepared by the contractor.

C. Prior to the final payment, the contractor shall provide a copy of the “Notice of Termination” (NOT) acceptance letter from the Tennessee Department of Environment and Conservation.

3.4 CONSTRUCTION

A. Designate in writing a specific individual to be responsible for the control of erosion on the site.

B. Clearing and grubbing are to be held to a minimum and phased to minimize exposure of cleared areas. In no case shall cleared areas exceed ten (10) acres without seeding, mulching, installing ECB, sodding or other approved method of minimizing erosion.

C. Adequate erosion and sediment control structures are to be in place prior to any clearing or soil disturbance. They are to be maintained to ensure effectiveness throughout the project. This includes replacement, alteration, and addition of new measures.

D. Inspections of erosion and sediment control structures shall be performed at least two (2) times every calendar week a minimum of 72 hours apart. Based on the results of the inspections, all measures shall be replaced or repaired as needed. Maintain a record book of these checks and repairs and retain for at least three years. Deliver reports to the Tennessee Department of Environment and Conservation (TDEC) as required by the permit.

E. Install a rain gauge on site prior to initiating any clearing. Maintain a rainfall record throughout the life of the project and until the “Notice of Termination” (NOT) is filed with TDEC.

F. Do not disturb vegetation more than ten (10) days prior to initiation of grading or earth moving. Apply vegetation within seven days for unfinished areas that will be left for more than fifteen (15) days. Apply permanent vegetation within fifteen (15) days after completion of grading in any given area, weather permitting.

G. Divert surface water around the construction areas. Filter sediment laden water pumped from excavated work areas.

H. After complete stabilization of all disturbed areas, the contractor shall remove all temporary erosion control measures.

3.5 CONSTRUCTION OF STRUCTURES

A. Temporary Berm

1. A temporary berm shall be constructed of compacted soil, with a minimum width of 24-inches at the top and a minimum height of 12-inches with or without a shallow ditch, constructed at the top of fill slopes or transverse to centerline on fills. Temporary berms shall be graded so as to drain to a compacted outlet at a slope drain. The area adjacent to the temporary berm near the slope drain must be properly graded to enable this inlet to function efficiently and with minimum ponding in this area.
2. All transverse berms required on the downstream side of a slope drain shall extend across the grade to the highest point at approximately a 10-degree angle with a perpendicular to centerline. The top width of these berms may be wider and the side slope flatter on transverse berms to allow equipment to pass over these berms with minimal disruptions. When practical and until final roadway elevations are approached, embankments should be constructed with a gradual slope to one side of the embankment to permit the placement of temporary berms and slope drains on only one side of the embankment.

B. Temporary Slope Drains

1. Temporary slope drains shall consist of stone gutters, fiber mats, plastic sheets, concrete or asphalt gutters, half-round pipe, metal pipe, plastic pipe, flexible rubber, or other materials which can be used as temporary measures to carry water accumulating in the cuts and on the fills down the slopes prior to installation of permanent facilities or growth of adequate ground cover on the slopes.
2. Fiber matting and plastic sheeting shall not be used on slopes steeper than 4:1 except for short distances of 20 feet or less.
3. All temporary slope drains shall be adequately anchored to the slope to prevent disruption by the force of the water flowing in the drains. The base for temporary slope drains shall be compacted and concavely formed to channel the water or hold the slope drain in place. The inlet end shall be properly constructed to channel water into the temporary slope drain. Energy dissipaters, sediment basins or other approved devices shall be constructed at the outlet end of the slope drains to reduce erosion downstream.
4. An ideal dissipater would be dumped rock or a small sediment basin which would slow the water as well as pick up some sediment. All temporary slope drains shall be removed when no longer necessary and the site restored to match the surroundings.

C. Sediment Structures

1. Sediment structures shall be utilized to control sediment at the foot of embankments where slope drains outlet; at the bottom as well as in the ditch lines atop waste sites; in the ditch lines or borrow pits. Sediment structures may be used in most drainage situations to prevent excessive siltation of pipe structures. All sediment structures shall be at least twice as long as they are wide.
2. When use of temporary sediment structures is to be discontinued, all sediment accumulation shall be removed, and all excavation backfilled and properly compacted. The existing ground shall be restored to its natural or intended condition.

D. Check Dams

1. Check dams shall be utilized to retard stream flow and catch small sediment loads. Materials utilized to construct check dams are varied and should be clearly illustrated or explained in the Contractor's erosion control plan.
2. All check dams shall be keyed into the sides and bottom of the channel a minimum depth of 2-feet. A design is not needed for check dams, typical designs are shown in the standard plans.
3. Stone check dams should generally not be utilized where the drainage area exceeds fifty (50) acres. Log and pole structures should generally not be used where the drainage area exceeds five (5) acres.

E. Brush Barriers

1. Brush barriers shall consist of brush, tree trimmings, shrubs, plants, and other approved refuse from the clearing and grubbing operations. The brush barriers shall be constructed approximately parallel to original ground contour.
2. The brush barrier shall be compressed to an approximate height of 3 to 5 feet and an approximate width of 5 to 10 feet. The embankment shall not be supported by the construction of brush barriers.

F. Baled Hay or Straw Erosion Checks

1. Hay or straw erosion checks shall be embedded in the ground 4 to 6-inches to prevent water flowing under them. The bales shall also be anchored securely to the ground by wooden stakes driven through the bales into the ground. Bales can remain in place until they rot or be removed after they have served their purpose, as determined by the Engineer.
2. The Contractor shall keep the checks in good condition by replacing broken or damaged bales immediately after damage occurs. Normal debris clean-out will be considered routine maintenance.

G. Temporary Silt Fences

1. Temporary silt fences shall be placed on the natural ground, at the bottom of fill slopes, in ditches or other areas where siltation is a problem. Silt fences are constructed of wire mesh fence with a covering of burlap or some other suitable material on the upper grade side of the fence and anchored into the soil.
2. The Contractor shall be required to maintain the silt fence in a satisfactory condition for the duration of the project or until its removal is requested by the Engineer. The silt accumulation at the fence may be left in place and seeded, removed, etc. as directed by the Engineer. The silt fence becomes the property of the Contractor whenever the fence is removed.

H. Maintenance

1. The temporary erosion control features installed by the Contractor shall be maintained until no longer needed, permanent erosion control methods are installed, or complete stabilization is achieved.
2. Sediment shall be removed from features prior to reaching 50% capacity of the feature.
3. Once materials are removed they shall become the property of the Contractor.

3.6 REGULATION

A. Allow state or local inspector to enter property at any time to inspect records, controls, or pollution management and to sample at reasonable times. Notify the TDEC, WPC Director of physical alterations that can change or increase the storm water discharge.

3.7 FINES

A. The Contractor shall be responsible for the payment of any fine to the Owner as a result of failure on the part of the Contractor to obtain a permit, develop a (SWPPP), keep records, maintain erosion control features, be signatory to required permits and documents, contain erosion from the site and/or other actions in violation of the State of Tennessee General Permit for Storm Water Discharge from Construction Sites (NPDES Permit).

3.8 PAYMENT

A. All costs associated with erosion and sedimentation control shall be included in the lump sum contract. No separate payment shall be made for temporary erosion control measures, including any changes required to prevent sediment from leaving the site or required by local or state authorities.

END OF SECTION 31 25 00

DIVISION 32

EXTERIOR IMPROVEMENTS

SECTION 32 12 16 – ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Extent of asphalt concrete paving work is shown on drawings.

B. Prepared aggregate base is specified elsewhere.

1.3 JOB CONDITIONS

A. Weather Limitations: Apply prime and tack coats when ambient temperature is above fifty (50) degrees F, and when temperature has not been below thirty-five (35) degrees F for twelve (12)-hours immediately prior to application. Do not apply when aggregate base is wet or contains an excess of moisture.

B. Construct asphalt concrete surface course when atmospheric temperature is above forty (40) degrees F, and when base is dry. Base course may be placed when air temperature is above thirty (30) degrees F and rising.

C. Grade Control: Establish and maintain required lines and elevations.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Use locally available materials and gradations which exhibit a satisfactory record of previous installations. Tennessee Department of Transportation (TDOT) approved materials and mix designs are acceptable.

B. Surface Coarse Aggregate: Crushed stone, crushed gravel, crushed slag, and sharp-edged natural sand.

C. Asphalt Cement: Comply with AASHTO M 320 and Tennessee Department of Transportation procedures.

D. Viscosity Grade: AC-20, AR-80.

E. Tack Coat: Emulsified asphalt; AASHTO M 140 (ASTM D 997) or M 208 (D 2397), SS-1, SS-1h, CSS-1, CSS-1h, TST-1P, CQS-1h, CQS-1hp, TTT-1, or TTT-2.

F. Asphalt-Aggregate Mixture: Provide asphalt-aggregate mixture as recommended by local paving authorities to suit project conditions.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

A. Remove loose material from compacted subbase surface immediately before applying herbicide treatment or prime coat.

B. Prior to placing granular in areas to be paved subgrade shall be proof rolled with a loaded dump truck weighing approximately 30 tons in the presence of the Engineer or his designee.

C. Prior to placing asphalt, the granular base shall be proof rolled with a loaded dump truck weighing approximately 30 tons in the presence of the Engineer or his designee.

D. Notify Contractor of unsatisfactory conditions. Do not begin paving work until deficient subbase areas have been corrected and are ready to receive paving.

3.2 PRIME COAT

A. Apply at rate of 0.20 to 0.50 gal. Per sq. yd., over compacted sub-grade. Apply material to penetrate and seal, but not flood, surface. Cure and dry as long as necessary to attain penetration and evaporation of volatile.

3.3 TACK COAT

A. Material Application Temperatures: SS-01, SS-1h, CSS-1, CSS-1h, TST-1p, CQS-1h, CQS-1hp 60 – 140^0 F; TTT-1 160 - 180^0 F; and TTT-2 120 – 160^0 F.

B. Dilution of asphalt emulsion after leaving the terminal is not ALLOWED. Apply as delivered from the terminal.

C. Apply to clean and dry contact surfaces of previously constructed asphalt or Portland cement concrete and surfaces abutting or projecting into asphalt concrete pavement.

D. Distribute at rate of 0.05 to 0.10 gal. per sq. yd. of surface.

E. Allow to dry until at proper condition to receive paving.

3.4 PLACING MIX

A. General: Place asphalt concrete mixture on prepared surface, spread and strike off. Spread mixture at minimum temperature of 225 degrees F (107 degrees C). Place inaccessible and small areas by hand. Place each course to required grade, cross section, and compacted thickness.

B. Paver Placing: Place in strips not less than ten (10)-feet wide, unless otherwise acceptable to Architect. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete base course for a section before placing surface course.

C. Joints: Make joints between old and new pavements, or between successive days' work, to ensure continuous bond between adjoining works. Construct joints to have same texture, density, and smoothness as other sections of asphalt concrete course. Clean contact surfaces and apply tack coat.

3.5 ROLLING

A. General: Begin rolling when mixture will bear roller weight without excessive displacement.

B. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.

C. Breakdown Rolling: Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling, and repair displaced areas by loosening and filling, if required, with hot material.

D. Second Rolling: Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been thoroughly compacted.

E. Finish Rolling: Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained maximum density.

F. Patching: Remove and replace paving areas mixed with foreign materials and defective areas. Cut out such areas and fill with fresh, hot asphalt concrete. Compact by rolling to maximum surface density and smoothness.

G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.6 FIELD QUALITY CONTROL

A. General: Test in place asphalt concrete courses for compliance with requirements for thickness and surface smoothness. Repair or remove and replace unacceptable paving as directed by Architect/Engineer.

B. Surface Smoothness: Test finished surface of each asphalt concrete course for smoothness, using ten (10)-foot straightedge applied parallel with, and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding the following tolerances for smoothness.

1. Wearing Course Surface: 3/16-inch
2. Binder Course: 3/8-inch

C. Compaction: The density (bulk specific gravity) determination for a compacted asphalt mixture shall be performed in accordance with AASHTO T-166, Method A or C. Asphalt surfaces in parking lots and on private drives shall meet the following density requirements: Average Percent of Maximum Theoretical Density ≥ 92 with no single test lower than 89. For density requirements on all other asphalt surfaces refer to Section 407.15-Compaction of the TDOT Standard Specification for Road and Bridge Construction, latest edition.

END OF SECTION 32 12 16

SECTION 32 31 13– CHAIN LINK FENCING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Provide chain link fencing as shown and specified. The work includes:

1. Standard color coated steel chain link fence systems
2. Gates and related hardware (as required).

B. Related work:

1. Section 31 00 00: Earthwork
2. Refer to site drawings for locations.

1.2 QUALITY ASSURANCE

A. Provide chain link fences and gates as complete units produced by a single manufacturer, including necessary erection accessories, fittings and fastenings

B. Installation: Performed only by the manufacturer or an experienced chain link fence installer approved by the manufacturer

C. Materials and installation shall comply with the following standards:

1. American Society fro Testing and Materials (ASTM)
2. Chain Link Manufacturers Institute (CLMI) and International Fence Industry Association (IFIA)

1.3 SUBMITTALS

A. Submit manufacturer's product data for each type of fencing and finish required

B. Submit shop drawings. Include fence plan layout and details illustrating height, location and sizes of posts, rails, braces, gates and anchorage. Provide hardware list and erection procedures

C. Submit the following material samples in required finish:

1. Fabric, 6-inch square

D. Submit installer's certification that furnished materials meet specification requirements

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver chain link fence materials in the manufacturer's original packaging with tags and labels intact and legible

B. Handle and store material to prevent damage and deterioration

1.5 PROJECT CONDITIONS

A. Do not begin chain link fencing installation before completion of final grading

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products which may be incorporated into the work include, but are not limited to, the following:

1. Galvanized Steel Fencing and Fabric
    a. Allied Tubing and Conduit Corp.
    b. American Fence Corp.
    c. Anchor Fence, Inc.

2.2 MATERIALS

A. Chain link fabric: One (1) piece width, full height, 2-inch mesh, and 9 gauge (0.148-inch) steel wire (measured at metallic core)

1. Finish: Polyvinyl chloride (PVC), plastic resin finish over galvanized steel wire, not less than seven (7) nor more than twenty (20) mils thick
    a. Color of fence and all related components: Black

2. Selvages: Top and bottom selvages knuckled

B. Framework: Provide manufacturer's standard roll-formed shapes, structural shapes, square tubular, or round pipe, except as otherwise indicated

1. Finish: Polyvinyl chloride (PVC), plastic resin finish over galvanizing, not less than ten (10) mils thick. Color matching chain link fabric color. Fusion bonded to all components before fabrication

C. Hardware and accessories: Provide manufacturer's standard hardware and accessories, except as otherwise indicated

1. Finish: Polyvinyl chloride (PVC), plastic resin finish over galvanizing, not less than ten (10) mils thick. Color matching framework color.

2.3 COMPONENTS

A. End, corner and pull posts:

1. 2.375-inch OD steel pipe, 3.65 LBS per lineal foot (4 ft. – 6 ft. Height)

B. Line posts:

1. 1.875-inch OD steel pipe, 2.72 LBS per lineal foot (4 ft. – 6 ft. Height)

C. Gate posts:

1. 2.875-inch OD steel pipe, 5.79 LBS per lineal foot (Gate leaf width – 6 ft. or less)

D. Top and brace rails:

1. 1.625-inch OD steel pipe, 2.27 LBS per lineal foot

E. Bottom rails:

1. 1.625-inch OD steel pipe, 2.27 LBS per lineal foot

F. Gate frames:

1. 1.625-inch OD steel pipe, 2.27 LBS per lineal foot

G. Post braces: Provide bracing assemblies, for fences 6-feet-0-inch high or over, at each end, and gate posts, and at both sides of corner and pull posts

1. Locate horizontal brace at mid-height of fabric
2. Use 1.625-inch OD steel pipe for horizontal brace and 0.375-inch diameter rod with turnbuckle for diagonal truss

2.4 ACCESSORIES

A. Tubular post tops: Weather tight closure caps, one (1) top for each post. Provide tops with openings to accommodate top rails. Finish matching framework finish.

B. Sleeves, stretcher bars, stretcher bar bands, clips, ties, rail ends, fasteners, fittings, and accessories: Provide manufacturer's standard complying with CLMI specifications. Finish matching framework finish.

C. Concrete: ASTM C94 ready-mixed concrete, minimum 28-day compressive strength of 3,000 psi, air entrained 2% to 4%.

2.5 GATES (only as required): Refer to Drawings for locations.

A. Fabricate gate perimeter frames of tubular members assembled by welding or with special fittings at corners. Provide additional horizontal and vertical members to ensure proper operation and for attachment of fabric, hardware and accessories.

B. Gate fabric: Metal and metal finish matching fence fabric.

C. Gate hardware: Provide manufacturer's standard hardware, complete with latches, stops, keepers, and hinges complying with CLMI specifications. Provide hardware of sufficient design and strength for satisfactory gate operation.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine final grades and installation conditions. Do not start chain link fence system work until unsatisfactory conditions are corrected.

3.2 PREPARATION

A. Stake out complete fence line for approval by Landscape Architect/Engineer prior to installation

B. Locate and mark post positions. Space line posts equally and at maximum 10-feet-0-inch on center spacing

C. Provide corner posts at positions where fence changes direction more than ten (10) degrees

3.3 INSTALLATION

A. Install the chain link fence system in accordance with the manufacturer's installation instructions and complying with CLMI specifications

B. Provide a rigid, plumb, finished fence structure with fabric tight and in tension; of the height indicated on the drawings

C. Drill post holes into firm, undisturbed or compacted earth:

1. Hole diameter for line posts: minimum three (3) times the post diameter (OD)
2. Hole diameter for corner and gate posts: minimum four (4) times the post diameter (OD)
3. Hole depth: Minimum three (3)-inches deeper than the post setting depth
4. Post depth: Minimum of 36-inches depth
5. Gate post depth: In accordance with manufacturer's recommendations for gate size indicated, minimum 36-inch depth

6. Remove excavated post hole soil from the site, or dispose of as directed by Landscape Architect

D. Install gate, end, corner, pull and line posts in concrete foundations

E. Place foundation concrete and tamp for consolidation. Align each post both vertically and laterally. Hold in position during concrete placement and finishing operation

1. Trowel finish tops of footings, and slope to direct water away from posts
2. Set keeps, stops, sleeves and other accessories into concrete as required
3. Grout-in posts set into sleeved holes with non-stick exterior type grout

F. Top rails: Install continuously through post caps or extension arms

G. Bottom rails: Provide bottom rails

H. Brace assemblies: Install brace assemblies where required

I. Tension wire: Install tension wires as required before stretching fabric and tie to each post with wire ties or clips

J. Stretch fabric tight between terminal posts. Install on security side of fence, and anchor securely to framework

1. Position bottom of fabric maximum of one (1)-inch above ground level at each post

K. Cut fabric to form continuous piece between terminal posts

1. Pull the fabric taut and clip or tie to posts, top rail and bottom tension wire
2. Install fabric on the side of the fence facing the park
3. Anchor to framework so that the fabric remains in tension after the pulling force is released
4. Bend wire ties to minimize hazard to persons
5. Peen bolt threads to prevent removal of nuts

L. Install gates plumb, level and secure for full opening without interference (as required)

1. Adjust hardware for smooth operation
2. Lubricate where necessary

3.4 CLEANING

A. Perform cleaning during installation of the work and upon completion of the work. Remove from site all debris and equipment. Repair all damage resulting from chain link fence system installation.

B. Touch up any nicks or scratches of the PVC color coating with liquid PVC paint.

END OF SECTION 32 31 13

SECTION 32 92 23 – SODDING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Provide sodded lawns as shown and specified. The work includes:

1. Soil testing and preparation.
2. Installing sod on lawns and other indicated areas.
3. Maintenance.

B. Related work:

1. Section 32 80 00 - Irrigation Systems
2. Section 32 92 19 - Seeding
3. Section 32 92 26 - Sprigging
4. Section 32 93 00 - Trees, Shrubs, and Ground Cover
5. Section 32 94 00 - Landscape Work

1.2 QUALITY ASSURANCE

A. Comply with relevant specifications in Division 32, as well as other divisions.

B. Sod: Comply with American Sod Producers Association (ASPA) classes of sod materials.

1.3 SUBMITTALS

A. Submit sod grower's certification of grass species. Identify source location.

B. Submit soil test report(s) indicating available nutrients in soil and laboratory recommendations for soil amendments, including application rates and formulas for limestone and fertilizer. Application rates and formulas shall be appropriate to actual time of installing sod.

C. Submit data on topsoil and fertilizer.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Cut, deliver, and install sod within a 24-hour period.

1. Do not harvest or transport sod when moisture content may adversely affect sod survival.
2. Protect sod from sun, wind, and dehydration prior to installation.
3. Do not tear, stretch, or drop sod during handing and installation.

1.5 PROJECT CONDITIONS

A. Work notification: Notify Architect/Engineer at least seven (7) working days prior to start of sod installation.

B. Protect existing grades, utilities, paving and other facilities from damage caused by sod installation.

C. Perform sod installation only after planting and other work affecting ground surface has been completed.

D. Restrict traffic from lawn areas until grass is established. Erect signs and barriers as required.

E. Provide hose and lawn watering equipment, including water, as required.

1.6 WARRANTY

A. Provide a uniform stand of grass by watering, mowing, and maintaining lawn areas until Substantial Completion and subsequently, until the end of the Contractor's required maintenance period. Sod shall be warranted through the first full growing season (May-August) after initial installation. Re-sod areas, with specified materials, which fail to provide a uniform stand of grass until all affected areas are accepted by Architect/Engineer.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Sod Type: Certified nursery-grade Hybrid Bermuda Grass.

B. Provide well-rooted, healthy sod, free of diseases, nematodes and soil borne insects. Provide sod uniform in color, leaf texture, density, and free of weeds, undesirable grasses, stones, roots, thatch, and extraneous material; viable and capable of growth and development when planted.

1. Furnish sod, machine stripped, in square pads or strips not more than 3'-0" long or rolls nominally 4'0" wide with uniform soil thickness of 1" to 1 ½" with clean cut edges. Mow sod before stripping.

C. Topsoil soil for Lawn Areas: Fertile, friable, natural topsoil of loamy character, without admixture of subsoil material, obtained from a well-drained arable site, reasonably free from clay, lumps coarse sands, stones, plants roots, sticks, and other foreign materials, with acidity range of between pH 6.0 and 6.8.

1. Identify source location of topsoil proposed for use on the project.
2. Topsoil which exists on the project site, including that which has been stripped and stockpiles during construction, will be acceptable if it meets the requirements of this specification, and if approved by Architect/Engineer.

3. Provide topsoil free of substances harmful to the plants which will be grown in the soil.

D. Fertilizer: Granular, non-burning product composed of not less than 50% organic slow acting, guaranteed analysis professional fertilizer.

1. Type A: Starter Fertilizer, formula in accordance with approved laboratory soil test report(s) and time of application.
2. Type B: Top Dressing Fertilizer, formula in accordance with approved laboratory soil test report(s) and time of application.

E. Ground Limestone: Containing not less than 85% of total carbonates and ground to such fineness that 50% will pass through 100 mesh sieve and 90% will pass through a 20-mesh sieve.

F. Stakes: Softwood, 3/4" diameter x 8" long (or biodegradable material). Metal stakes not allowed.

G. Water: Free of substance harmful to sod growth, Hoses or other methods of transportation furnished by Contractor.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine finish surfaces, grades, topsoil, quality, and depth. Do not start sod installation until unsatisfactory conditions are corrected.

3.2 PREPARATION

A. Limit preparation to areas that will be immediately sodded:

1. Topsoil:
   a. Add topsoil sufficient to add 4” minimum depth of topsoil cover. Loosen topsoil of lawn areas to a minimum depth of 4”. Remove stones over 1” in any dimension and sticks, roots, rubbish, and extraneous matter.
   b. Note that the use of existing, in-place topsoil for sod installations will require the approval of Architect/Engineer in advance and will depend in part on soil test report(s).

2. Grade lawn areas to smooth, free draining and even surface with a loose, uniformly fine texture. Roll and rake; remove ridges and fill depressions as required to drain.
3. Apply limestone at recommended rate in soil test report. Ensure that pH of topsoil is not less than 6.0 or more than 6.8. Distribute evenly by machine and incorporate thoroughly into topsoil.
4. Distribute Type A fertilizer at recommended rate in soil test report.

a. Apply fertilizer by mechanical rotary or drop type distributor, thoroughly and evenly incorporated with soil to a depth of 3" by disking or other approved method. Fertilize areas inaccessible to power equipment with hand tools and incorporate it into soil.

5. Dampen dry soil prior to installing sod.
6. Restore prepared areas to specified condition if eroded, settled, or otherwise disturbed after fine grading and prior to installing sod.

3.3 INSTALLATION

A. Installing Sod:

1. Time of Sod Installation:
   a. Hybrid Bermuda Grass: anytime except when soil is wet, muddy, or frozen.

2. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod strips. Do not overlay edges. Stagger strips to offset joints in adjacent courses. Remove excess sod to avoid smothering of adjacent grass. Provide sod pad top flush with adjacent curbs, walks, drains, and seeded areas.
3. Where sod is installed adjacent to existing lawn areas, new sod shall be recessed so that a level and flush condition exists between existing and new lawn areas.
4. Install initial row of sod in a straight line, beginning at bottom of slopes, perpendicular to direction of the sloped area. Place subsequent rows parallel to and lightly against previously installed row.
5. Peg sod on slopes 3-to-1 or steeper to prevent slippage. Drive pegs through sod, perpendicular to slope, at the rate of 2 pegs per square yard of sod. Top of peg shall be flush to ½" above topsoil pad to facilitate mowing and to prevent any hazardous protrusion of the peg.
6. Water sod thoroughly with a fine spray immediately after laying.
7. Roll with light lawn roller to ensure contact with sub-grade.
   a. Sod indicated areas within contract limits and areas adjoining contract limits. Sod additional areas which are disturbed as a result of construction operations.

3.4 MAINTENANCE

A. Maintain sodded lawns until Substantial Completion, for a minimum period of 30 days after Substantial Completion and thereafter until acceptance of sod.

B. Maintain sodded lawn areas, including watering, spot weeding, mowing, application of herbicides, fungicides, and reinstalling sod until a full, uniform stand of grass free of weeds, undesirable grass species, disease and insects is achieved and accepted by the Architect/Engineer.

C. Water sod thoroughly every 2 to 3 days, as required to establish proper rooting.

1. Repair, rework, and reinstall sod in all areas that have washed out or eroded. Replace unacceptable or dead areas with new sod.
2. Mow lawn areas as soon as lawn top growth reaches a 3” height. Cut back to 2” height. Repeat mowing as required to maintain specified height. Not more than 40% of grass leaf shall be removed at any single mowing.
3. Apply Type B fertilizer to lawns approximately 30 days after installing sod at recommended rate in soil test report. Apply evenly with a mechanical rotary of drop type distributor. Thoroughly water into soil.
4. Apply herbicides as required to control weed growth or undesirable grass species.
5. Apply fungicides and insecticides as required to control diseases and insects.
6. Remove sod pegs.

3.5 ACCEPTANCE/SUBSTANTIAL COMPLETION

A. Inspection to determine acceptance of sodded lawns will be made by the Architect/Engineer, at the time of Substantial Completion of the entire project. The Contractor shall provide notification at least 10 working days before requested inspection date.

1. Sodded areas will be acceptable provided all requirements, including maintenance, have been compiled with, a healthy, even-colored viable lawn is established, free of weeds, undesirable grass species, disease, and insects.
2. If the date of Substantial Completion occurs in the dormant season, lawn areas will be reviewed at the beginning of the next growing season for compliance with this specification.

B. Upon Substantial Completion and acceptance of lawn areas, and at the end of the Contractor’s maintenance period, the Owner will assume lawn maintenance.

3.6 CLEANING

A. Perform cleaning during installation of the work upon completion of the work. Remove from site all excess materials, debris, and equipment. Repair damage resulting from installing sod.

END OF SECTION 32 92 23