PROJECT MANUAL FOR

TERRE HAUTE BOYS AND GIRLS CLUB
RENOVATION
55 SOUTH BROWN AVENUE
TERRE HAUTE, IN 47803

TERRE HAUTE BOYS & GIRLS CLUB
BOBBY MOORE, EXECUTIVE DIRECTOR
DAVID FRIEDRICH, BOARD PRESIDENT

ARCHITECT:
AMANDA JUKES, AIA
SANDERS AND ASSOCIATES INC.
500 SOUTH 7TH STREET
TERRE HAUTE, IN 47807

MARCH 25, 2024

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FOR PROJECT MANUAL

The bid packets items A-U and Appendix A, are available at Rapid Reproductions, Inc. 129 S. 11th St. Terre Haute, IN Phone: 812-238-1681 or at www.sandersandassocplanroom.com.

ITEMS V- EE are not included. These items are Standard AIA Documents (Most current editions) and may be examined at the Architect's office.

INVITATION TO BID

The *Terre Haute Boys and Girls Club* will receive sealed bids for the renovation of their facility located at 55 Brown Avenue, Terre Haute, Indiana until 11:00 AM on the 18th day of April 2024, at the office of the *Terre Haute Boys and Girls Club* located at 924 North 13th Street, Terre Haute, Indiana at which time and place all bids will be publicly opened and read aloud.

Bids will be received on the basis of a single lump sum and alternates for complete construction as described in the Instructions to Bidders. The work is to include all labor, materials, equipment, tools and appliances, transportation, all applicable taxes, permits and everything required for the entire performance and completion of the work in every detail.

All work shall be in strict accordance with this Invitation to Bid and the bidding Contract Documents as prepared by Sanders & Associates, Inc. Any bids received after the above specified time and date will be returned to bidders unopened. Bids shall be accompanied by the General Contractor's Proposal Contents as stated in the specifications.

Bidding and Contract Documents including Drawings and Specifications may be examined in the office of the Architect, Sanders & Associates, Inc., 500 South 7th St., Terre Haute, Indiana, 47807, (812) 232-5256, or at www.Sandersandassocplanroom.com.

Plans and specifications will be available for distribution March 26th, 2024. The plans and specifications must be purchased directly from Rapid Reproductions, 129 S. 11th St., Terre Haute, IN 47807, with no deposit required, or online at www.Sandersandassocplanroom.com . No bids shall be withdrawn for a period of sixty-(60) calendar days after the bid opening without written consent of the Architect.

Do not include sales tax in the bid amount. The Owner is exempt from payment of Indiana Sales Tax and Use Tax. The Owner will furnish the contractor with the necessary exemption number upon request.

A certified check or bank draft, payable to the order of the *Terre Haute Boys and Girls Club* negotiable U.S. Government Bonds (at par value), or a satisfactory Bid Bond executed by the Bidder and acceptable surety, in an amount equal to five percent (5%) of the total amount of the bid shall be submitted with each bid.

Bid Guaranty will be returned to unsuccessful bidders upon selection of the successful bidder. Bid Guaranty of the successful bidder will be returned upon the signing of contracts. Bids may be held not to exceed sixty-(60) days from the date of Bid Opening for the purpose of reviewing the Bids and investigating the qualifications of the Bidders, prior to the award of a Contract.

Contractor receiving award shall furnish at the directive of the Owner, an approved Performance Bond, Labor and Material Payment Bond in an amount at least equal to 100% of the contract amount.

The bidders are requested to meet with the Owner and Architect for a pre-bid conference at the project location (55 Brown Avenue, Terre Haute, IN) on Wednesday, April 3rd at 11:00 AM local time. Contractors shall be aware that this project is covered under the provisions of the Davis-Bacon Prevailing Wages Act. All laborers and mechanics shall be paid at a minimum according to the prevailing wages indicated in the Wage Decision.

The Contractor must ensure that all employees and applicants for employment are not discriminated against because of their race, religion, color, sex, national origin, or individuals with handicaps. Women and Minority Owned Businesses qualified to perform the work contemplated by this solicitation are encouraged to bid.

The time completion of the project shall be **240 days** after the notice to proceed. The *Terre Haute Boys and Girls Club* reserves the right to reject any or all bids or waive any informality in the bidding to the extent permitted by law.

Each bid must be enclosed in a sealed envelope marked:

Bid For: Terre Haute Boys and Girls Club Renovation
Bid opening April 18, 2024 at 11:00 AM
"Name and Address of Bidder"

Agent: Amanda Jukes, Architect
Sanders & Associates, Inc.
500 South 7th Street
Terre Haute, IN 47807
812-232-5256

Dated this 15th day of March

INSTRUCTIONS TO BIDDERS

1. SECURING DOCUMENTS

Copies of the proposed Contract Documents are on file at the following offices:

Architect:
Sanders & Associates, Inc.
500 South 7th Street
Terre Haute, IN 47807

The bid packets, plans and specifications are available online at www.sandersandassocplanroom.com , or at Rapid Reproductions, Inc. 129 S. 11th St., Terre Haute, IN (Phone # 812-238-1681)

Copies of the proposed Contract Documents may be obtained for bidding purposes upon the conditions set forth in the Invitation to Bid.

2. BID FORM

In order to receive consideration, make all bids in strict accordance with the following:

1) Make bids upon the forms provided therefore, with bids as shown properly executed and with all items filled out. Do not change the wording of the Bid Form, and do not add words to the wording of the Bid Form. Unauthorized conditions, limitations or provisions attached to the proposal shall be cause for rejection of the proposal. Alterations by erasure or interlineation must be explained or noted in the bid over the signature of the bidder.
2) No telegraphic bid or telegraphic modification of bid will be considered. No bids received after the time fixed for receiving them will be considered. Late bids will be returned to the sender unopened.
3) Each bid shall be addressed to the Owner, and shall be delivered to the Owner at the address given on or before the day and hour set for opening of the bids. Each bid shall be enclosed in a sealed envelope bearing the title of the work, the name of the bidder, and the date and hour of the bid opening. It is the sole responsibility of the bidder to see that his bid is received on time.

3. EXAMINATION OF DRAWINGS, SPECIFICATIONS, AND SITE OF WORK

Before submitting a bid, each bidder shall carefully examine the Drawings, READ the Specifications and all other proposed Contract Documents, and visit the site of the Work. Each bidder shall fully inform himself prior to bidding as to all existing conditions and limitations under which the Work is to be performed, and he shall include in his bid a sum to cover all costs of all items necessary to perform the work as set forth in the proposed Contract Documents. No allowances will be made to any bidder because of

lack of such examination or knowledge. The submission of a bid will be construed as conclusive evidence that the bidder has made such examination.

4. WITHDRAWAL OF BIDS

Any bidder may withdraw his bid, either personally or by written request, at any time prior to the scheduled time for opening bids. No bidder may withdraw his bid for a period of 60 days after the date set for opening thereof, and all bids shall be subject to acceptance by the Owner during this period.

5. AWARD OR REJECTION OF BIDS

The Contract will be awarded based on the low bid. The Owner also reserves the right to reject the Bid of any bidder who has previously failed to perform properly, or in a timely manner, or to complete an item, contracts of 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, materialmen, or employees. The Contract is intended to be awarded to the apparent and best low bidder. In the case of the acceptance of any alternates, it will be the lowest net or aggregate including the alternates that the Owner accepts. The Owner reserves the right to accept any bid and to waive any formalities.

6. EXECUTION OF AGREEMENT

The form of Agreement which the successful bidder, as Contractor, will be required to execute, is included in the Project Manual:

1) The bidder to whom the contract is awarded by the Owner shall, within 7 days after notice of award and receipt of Agreement form from the Owner, sign and deliver to the Architect all required copies.
2) At or prior to delivery of the signed Agreement, the Contractor shall deliver to the Architect the policies of insurance certificates as required by the Contract Documents. All bonds and policies of insurance shall be approved by the Owner before the successful bidder may proceed with the work.
3) Failure or refusal to furnish bonds or insurance policies or certificates in a form satisfactory to the Owner shall subject the bidder to loss of time from the allowable construction period equal to the time delay in furnishing the required material.

7. INTERPRETATION OF CONTRACT DOCUMENTS PRIOR TO BIDDING

If any person contemplating submitting a bid for construction of the Work is in doubt as to the true meaning of any part of the proposed Contract Documents, or finds discrepancies in or omissions from any part of the proposed Contract Documents, he may submit to the Architect a written request for interpretation thereof not later than five days before bids will be opened.

1) The person submitting the request shall be responsible for its prompt delivery.
2) Interpretation or correction of proposed Contract Documents will be made only by Addendum, and will be mailed or delivered to each bidder of record. All Addenda will be a part of the Contract.
3) The Owner will not be responsible for any other explanations or interpretations of the proposed Documents.

8. CONSTRUCTION TIME AND LIQUIDATED DAMAGES

The Agreement will include a stipulation that work be completed in 270 days. The Agreement will also include a stipulation that liquidated damages will be established in the amount of $100.00 per calendar day after the completion date that the work is not fully completed and certificate of occupancy issued.

9. PERFORMANCE BOND

A performance and payment bond in a penal sum of 100 percent of the contract price; or as may be required or permitted by State law, or an irrevocable line of credit listing *Terre Haute Boys and Girls Club* as the sole beneficiary for 25% of the total construction contract. The line of credit must be issued for the entire construction period plus one (1) year following construction completion.

10. COMPLETION OF SPECIFICATIONS AND PLANS

Upon issue to prospective bidders the physical make-up and content of the plans, specifications and extra proposal forms are intended to be complete for preparing and submitting of proposals. However, the bidder will verify to his own satisfaction that all material issued him is complete. Should he discover that a page, sheet, etc., is missing, he shall notify the Architect in writing and it will be forwarded to him. After bids have been submitted, no claim of ignorance of the requirements of bidding or of construction due to such missing material will be recognized.

11. PROPOSAL CONTENTS

All bids shall include properly executed forms as follows:

1) Bid Security
2) Bid Form
3) Non-Collusion Affidavits*
4) EEO Certificates*
5) Drug Free Work Place Certification*
6) Anti-Lobbying Certificates*
7) Non-Segregated Facilities*
8) Proposed List of Subcontractors (Including Addresses and Phone Numbers)

The general contractor shall submit all the above items with their proposals.

* All subcontractors shall submit these forms before the Notice to Proceed is issued.

12. WAGES

Attention of bidders is called to the fact that no less than minimum salaries and wages must be paid on this project.

13. PRE-BID MEETING

A Pre-Bid meeting will be at the Terre Haute Boys and Girls location at 55 Brown Avenue, Terre Haute, IN on Wednesday, April 3, 2024th at 11:00 AM local time.

Reset Form

CONTRACTOR'S BID FOR PUBLIC WORK - FORM 96

State Form 52414 (R / 9-10) / Form 96 (Revised 2010)
Prescribed by State Board of Accounts

PART I
(To be completed for all bids. Please type or print)

Date *(month, day, year):*_____

1. Governmental Unit (Owner):_____
2. County :_____
3. Bidder (Firm):_____

   Address:_____

   City/State/ZIPcode:_____
4. Telephone Number:_____
5. Agent of Bidder *(if applicable):*_____

Pursuant to notices given, the undersigned offers to furnish labor and/or material necessary to complete the public works project of _____

(Governmental Unit) in accordance with plans and specifications prepared by _____

_____ and dated _____ for the sum of

_____ $_____

The undersigned further agrees to furnish a bond or certified check with this bid for an amount specified in the notice of the letting. If alternative bids apply, the undersigned submits a proposal for each in accordance with the notice. Any addendums attached will be specifically referenced at the applicable page.

If additional units of material included in the contract are needed, the cost of units must be the same as that shown in the original contract if accepted by the governmental unit. If the bid is to be awarded on a unit basis, the itemization of the units shall be shown on a separate attachment.

The contractor and his subcontractors, if any, shall not discriminate against or intimidate any employee, or applicant for employment, to be employed in the performance of this contract, with respect to any matter directly or indirectly related to employment because of race, religion, color, sex, national origin or ancestry. Breach of this covenant may be regarded as a material breach of the contract.

CERTIFICATION OF USE OF UNITED STATES STEEL PRODUCTS
(If applicable)

I, the undersigned bidder or agent as a contractor on a public works project, understand my statutory obligation to use steel products made in the United States (I.C. 5-16-8-2). I hereby certify that I and all subcontractors employed by me for this project will use U.S. steel products on this project if awarded. I understand that violations hereunder may result in forfeiture of contractual payments.

ACCEPTANCE

The above bid is accepted this _____ day of _____, _____, subject to the following conditions: _____

_____

Contracting Authority Members:

_____ _____

_____ _____

_____ _____

PART II

(For projects of $100,000 or more – IC 36-1-12-4)

Governmental Unit: _____

Bidder (Firm) _____

Date *(month, day, year):* _____

These statements to be submitted under oath by each bidder with and as a part of his bid. Attach additional pages for each section as needed.

SECTION I EXPERIENCE QUESTIONNAIRE

1. What public works projects has your organization completed for the period of one (1) year prior to the date of the current bid?

Contract Amount	Class of Work	Completion Date	Name and Address of Owner

2. What public works projects are now in process of construction by your organization?

Contract Amount	Class of Work	Expected Completion Date	Name and Address of Owner

3. Have you ever failed to complete any work awarded to you? _____ If so, where and why?

_____

_____

_____

4. List references from private firms for which you have performed work.

_____

_____

_____

_____

_____

SECTION II PLAN AND EQUIPMENT QUESTIONNAIRE

1. Explain your plan or layout for performing proposed work. *(Examples could include a narrative of when you could begin work, complete the project, number of workers, etc. and any other information which you believe would enable the governmental unit to consider your bid.)*

_____

_____

_____

_____

_____

2. Please list the names and addresses of all subcontractors *(i.e. persons or firms outside your own firm who have performed part of the work)* that you have used on public works projects during the past five (5) years along with a brief description of the work done by each subcontractor.

_____

_____

_____

_____

_____

3. If you intend to sublet any portion of the work, state the name and address of each subcontractor, equipment to be used by the subcontractor, and whether you will require a bond. However, if you are unable to currently provide a listing, please understand a listing must be provided prior to contract approval. Until the completion of the proposed project, you are under a continuing obligation to immediately notify the governmental unit in the event that you subsequently determine that you will use a subcontractor on the proposed project.

_____

_____

_____

_____

_____

4. What equipment do you have available to use for the proposed project? Any equipment to be used by subcontractors may also be required to be listed by the governmental unit.

_____

_____

_____

_____

_____

5. Have you entered into contracts or received offers for all materials which substantiate the prices used in preparing your proposal? If not, please explain the rationale used which would corroborate the prices listed.

_____

_____

_____

_____

_____

SECTION III CONTRACTOR'S FINANCIAL STATEMENT

Attachment of bidder's financial statement is mandatory. Any bid submitted without said financial statement as required by statute shall thereby be rendered invalid. The financial statement provided hereunder to the governing body awarding the contract must be specific enough in detail so that said governing body can make a proper determination of the bidder's capability for completing the project if awarded.

SECTION IV CONTRACTOR'S NON – COLLUSION AFFIDAVIT

The undersigned bidder or agent, being duly sworn on oath, says that he has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to include anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He further says that no person or persons, firms, or corporation has, have or will receive directly or indirectly, any rebate, fee, gift, commission or thing of value on account of such sale.

SECTION V OATH AND AFFIRMATION

I HEREBY AFFIRM UNDER THE PENALTIES FOR PERJURY THAT THE FACTS AND INFORMATION CONTAINED IN THE FOREGOING BID FOR PUBLIC WORKS ARE TRUE AND CORRECT.

Dated at _____ this _____ day of _____, _____

_____
(Name of Organization)

By_____

_____
(Title of Person Signing)

ACKNOWLEDGEMENT

STATE OF _____)
) ss
COUNTY OF_____)

Before me, a Notary Public, personally appeared the above-named _____ and swore that the statements contained in the foregoing document are true and correct.

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

_____
Notary Public

My Commission Expires:_____

County of Residence:_____

BID OF

_____
(Contractor)

_____
(Address)

_____

FOR

PUBLIC WORKS PROJECTS

OF

_____

_____

_____

Filed _____, _____

Action taken _____

_____

BID FORM ATTACHMENT

TERRE HAUTE BOYS & GIRLS CLUB RENOVATION
55 SOUTH BROWN AVENUE
TERRE HAUTE, IN 47803

Bidding Contractors:

1. Pursuant to and in compliance with the invitation to bid and the proposed Contract Documents relating to Project, including any addenda, the undersigned, having become thoroughly familiar with the terms and conditions of the proposed Contract Documents and with the local conditions affecting the performance and costs of the work at the places where the work is to be completed, and having inspected the sites in all particulars, hereby purposes and agrees to fully perform the work within the time stated and in strict accordance with the proposed Contract Documents, including furnishing any and all labor and materials, and to do all of the work required to construct and complete said work in accordance with the Contract Documents, for the following sum of money:

2. I understand that the Owner reserves the right to reject this bid, but that this bid shall remain open and not be withdrawn for a period of sixty days from the date prescribed for its opening.

3. If written notice of the acceptance of this bid is mailed or delivered to the undersigned within thirty days after the date set for the opening of this bid, or at any other time thereafter before it is withdrawn, the undersigned will execute and deliver the Contract Documents to the Architect in accordance with this bid as accepted, and will also furnish and deliver to the Architect, Proof of Insurance Coverage within seven days after personal delivery or after deposit in the mails of the notification of acceptance of this bid.

4. If awarded a contract under this proposal, the undersigned agrees to start work within seven (7) days of the contract signing, Notice of Acceptance, or request for additional information, may be addressed to the undersigned at the address set forth below:

ADDENDA CONFIRMATION

Bidder here with acknowledges receipt and has incorporated the provisions of the following addenda in this bid.

Addendum Number	Date
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

BID FORM

PROJECT: TERRE HAUTE BOYS & GIRLS CLUB RENOVATION

_____ _____

COMPLETE CONSTRUCTION BID (IN WRITING) (IN FIGURES)

ALTERNATES:

OMIT ALL STAGE/MULTI-PURPOSE ROOM MODIFICATIONS – (DEDUCT)

_____ _____

COMPLETE CONSTRUCTION BID (IN WRITING) (IN FIGURES)

Date_____, 2024

_____

(Firm Name)

Official Address:

_____ By: _____

_____ Title: _____

Phone: _____

SUPPLEMENTAL GENERAL CONDITIONS

1. *COPIES OF DOCUMENTS,*

2. *INSURANCE AND BONDS, ARTICLE 11, ADD THE FOLLOWING PARAGRAPHS:*

   A. The Contractor shall not commence work under this contract until he has obtained all insurance required by these specifications and until such insurance has been approved by the Owner, nor shall the Contractor allow any Subcontractor to commence work on his subcontract until all similar insurance required of the Subcontractor has been obtained and approved. Policies expiring on a fixed date before final acceptance of the project must be renewed and evidence of such renewal submitted to the Owner before such date.

   B. The Contractor shall furnish the Owner with satisfactory evidence of the insurance required.

   C. All policies and/or policy certificates shall contain the following clauses:

      1. Worker's Compensation Insurance: The Contractor shall maintain during the life of this contract Worker's Compensation Insurance for all employees employed at the site of the project, and, in case any work is sublet, the Contractor must require the Subcontractor similarly to provide Worker's Compensation Insurance for all of his employees engaged in work under this contract at the site of the project. The Contractor shall provide insurance coverage equal to that provided under the Worker's Compensation Act, for the protection of his employees not otherwise protected. Employer's liability coverage must be maintained in amounts not less than $100,000/$500,000/$100,000.

      2. Public Liability Property Damage: The Contractor shall maintain during the life of this contract Commercial General Liability Insurance. Such coverage shall protect him and any Subcontractor performing work covered by this contract, from claims for damages for personal injury, including accidental death, as well as from claims for property damages, which may arise from operations under this contract, whether such operations be by himself or by any Subcontractor or by anyone directly or indirectly employed by either of them and the amounts of such insurance shall be as follows:

         Commercial General Liability Insurance in an amount not less than $1,000,000 per occurrence for Bodily Injury, Property Damage, Personal and Advertising Injury with a $1,000,000 general aggregate and a $1,000,000 Products and Completed Operations aggregate.

         The Contractor shall require all of its Subcontractors, if not protected under Contractor's insurance policies, to effect and maintain, at their own expense during the entire period of performance and until completion of the subcontract, Commercial General Liability Insurance with a company or companies to the satisfaction of the Owner as follows:

a. Commercial General Liability Insurance in an amount not less than $1,000,000 per occurrences for Bodily Injury, Property Damage, or accidental death with a $1,000,000 general aggregate and a $1,000,000 Products and Completed Operations aggregate.

b. Special hazards not covered under the Commercial General Liability Insurance must be covered on a policy within the amounts as required above.

3. Business Auto Insurance: The Contractor and all Subcontractors shall at all times during the life of this contract, and any other subcontracts, maintain at their own expense, respectively, business auto insurance covering all liability and claims arising from the use and operation, anywhere in the United States, in connection with the performance of the Contract of Subcontracts of automobiles, whether such are owner, hired, or non-owned by the Contractor or Subcontractors. Such auto insurance shall be written with a limit of not less than $1,000,000 per occurrence as a combined single limit for Bodily Injury and Property Damage coverage.

4. Umbrella Liability: The Contractor and all Subcontractors shall maintain during the life of this contract, Umbrella Liability Insurance providing excess coverage over the above specified primary insurance in an amount not less than:

   a. $1,000,000 for contracts UNDER $100,000.00
   b. $2,000,000 for contracts OVER $100,000.00

5. Additional Insurance Requirements: The Contractor and all Subcontractors in connection with the above mentioned Worker's Compensation Insurance shall furnish to the Owner a Compensation Board showing that such insurance is in full force and effect.

   With regard to the above mentioned General Liability Insurance, if in the event of any major change or cancellation of such policy, the Contractor and all Subcontractors shall give a 30 day advance notice to the Owner.

   Also, the Contractor and all Subcontractors shall make the Owner, as stated in the "Instruction to Bidders", additional insured on their Business Auto and General Liability policies with regard to this Contract.

   The Contractor and all Subcontractors shall be required to furnish to the Owner duly executed certificates of insurance showing that all insurance policies required under this contract have been issued and are in full force and effect at all times during the life of this contract and have named the Owner, as stated in the "Instruction to Bidders", additional Insured. These certificates are to include General Liability, including contractual coverage, Business Auto, and Umbrella Liability.

The "Contractor will name the Owner, and any other parties specified, as an "Additional Insured" under the Commercial General Liability Policy. This "Additional Insured" coverage shall be on Form CG2010, or its equivalent, including "completed operations" coverage. The "Additional Insured" coverage provided to the Owner shall be primary coverage, and non contributory as respects the Owners Liability policy.

6. Loss or Damage: The Owner will obtain all Builders Risk Insurance Policies for this project.

7. Indemnification: To the fullest extent permitted by law, the Subcontractor expressly agrees to defend (at Subcontractor's expense and with counsel acceptable to the Contractor), indemnify, and hold harmless Owner, Contractor, Architect, Architect's Consultants, Engineer, Construction Manager, Lender, and any other parties which Contractor has agreed to indemnify as named or referenced in the project contract documents as attached to and made a part of this Subcontract, and their respective Officers, Directors, Shareholders, Employees, Agents, Successors, Affiliates, and assigns from and against any and all claims, suits, losses, causes of action, damages, liabilities, fines, penalties and expenses of any kind whatsoever, including without limitation arbitration or court costs and attorney's fees, arising on account of or in connection with injuries to or the death of any person, or any and all damages to property including loss of use, from or in any manner connected with the work performed by or for the Subcontractor under this Subcontract, caused in whole or in part by the presence of the person or property or the negligent acts or omissions of a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this paragraph. The defense and indemnification obligations under this Subcontract agreement shall not be restricted in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Subcontractor under workers' compensation acts, disability benefits acts, or other employee benefits acts, and shall extend to and include any actions brought by or in the name of any employee of the Subcontractor or any third party to whom Subcontractor may subcontract a part or all of the work.

SUBCONTRACTORS:

A. Prior to the awarding of the Contract, the contractor shall submit to the Owner, in writing, the names of the proposed Subcontractors and major material vendors, the Contractor shall furnish the Owner with full information concerning the proposed Subcontractor's ability and qualifications at the time such Subcontractor is submitted for approval.

B. The Contractor shall be responsible for the acts and omissions of his Subcontractors and of persons either directly or indirectly employed by them as he is for the acts and omissions of persons directly employed by him.

C. Nothing contained in the Contract shall create any contractual relationship between any Subcontractor and the Owner, and no Subcontractor will be recognized as a party to the Contract.

3. TAXES, ARTICLE 3.6 ADD THE FOLLOWING PARAGRAPH:

The Contractor shall pay all unemployment, social security, and other such taxes imposed by local, state, or federal government. The Owner is NOT subject to Indiana Retail Sales Tax and Federal Excise Tax, these taxes should Not be included in the Contractor's bid.

4. PROTECTION AND SAFETY, ARTICLE 16.1, 16.2, 16.2.1, 16.2.2, 16.2.3

OCCUPATIONAL SAFETY AND HEALTH ACTS:

The construction documents, and the joint and several phases of construction hereby contemplated are to be governed at all times by the applicable provisions of the state and federal laws included, but not limited to, the latest amendments of the following:

1. Indiana Occupational Safety and Health Act.

2. Williams-Steiger Occupational Safety and Health Act of 1970, Public Law 81-596; Part 1910-Occupational Safety and Health Standards, Chapter XVII of Title 29, Code of Federal Regulations; Part 1518-Safety and Health Regulations for Construction, Chapter XVII of Title 29, Code of Federal Regulations.

   The Contractor shall assume full responsibility for health and safety at the construction site, including, but not limited to, the above mentioned laws and regulations.

5. PAYMENTS TO CONTRACTOR AND COMPLETION, ARTICLE 15.3. ADD THE FOLLOWING PARAGRAPH:

Progress payments will be made monthly based on an approved Application for Payment, and will include work completed, as well as payment on material and equipment delivered and suitably stored at the site, less retainer of 10% of the amount of each, less the aggregate of previous payments in each case. Contractor must include with application, proof of purchase and delivery of material and equipment stored.

6. SHOP DRAWINGS AND SAMPLES, ARTICLE 9.9, ADD THE FOLLOWING PARAGRAPHS:

See Section 01300 Submittals and Section 01340 Shop Drawings, Product Data, & Samples for information on these items. No material shall be delivered to the project until final approved shop drawings are in the hands of the Owner and Architect and no shop drawings shall be used on the project that do not bear the Architect's stamp of approval.

7. EQUAL EMPLOYMENT OPPORTUNITY:

Attention of Bidders is particularly called to the requirement for ensuring that employees and applicants for employment are not discriminated against because of their race, creed, color, sex or national origin. Attention of Bidders is also particularly called to the requirements for ensuring that, to the greatest extent feasible, in connection with work covered by this contract, opportunities for training and employment be made to lower income residents of the project area and that contract work shall be awarded to business concerns which are located in or owned substantially by residents of the Project Area.

CONTRACTOR'S NON-COLLUSION AFFIDAVIT

The Bidder, by its officers and _____ agents or representatives present at the time of filling this bid, being duly sworn, on their oaths, say that neither they nor any of them have in any way, directly or indirectly, entered into any arrangement or agreement with any other bidder, or with any public offer of the State of Indiana whereby such affiant or affiants or either of them, has paid or is to pay such other bidder or public officer any sum of money, or has given or is to give such other bidder or public officer anything of value whatever, or such affiant or affiants or either of them has not, directly, or indirectly, entered into any arrangement or agreement with any other bidder or bidders, which tends to or does lessen or destroy free competition in the letting of the contract sought for by the attached bids; that no inducement of any form or character other than that which appears up on the face of the bid will be suggested, offered, paid or delivered to any person whomsoever to influence the acceptance of the said bid or awarding of the contract, nor has this bidder any agreement or understanding of any kind whatsoever, with any person whomsoever to pay, deliver to, or share with any other person, in any way or manner, any of the proceeds of the contract sought by this bid.

_____
FIRM NAME

_____
*OWNER-PRESIDENT-PARTNER

_____
PARTNER-VICE PRESIDENT AND/OR SECRETARY/TREASURER

_____
PARTNER

Subscribed and sworn to before me this ___ Day of _____ 20__

Public Notary (signature) _____

(print) _____

Commission expires:_____ Country of Residence:_____

This form **must be signed by the same person(s) who sign(s) the bid.*

SUBCONTRACTOR'S NON-COLLUSION AFFIDAVIT

State of _____
County of _____

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

1) He/She is _____ of _____. Hereinafter referred to as the "Subcontractor";

2) He/She is fully informed respecting the preparation and contents of the subcontractor's Proposal submitted to the subcontractor to _____, the Contractor for certain work in connection with the_____ Contract pertaining to the Project in _____;

3) Such subcontractor's Proposal is genuine and is not a collusive or sham proposal;

4) Neither the subcontractor nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived, or agreed, directly or indirectly, with any other Bidder, firm or person to submit a collusive or sham Proposal in connection with such contractor or to refrain from submitting a Proposal in connection with such contract, or has in any manner, directly or indirectly, sought by unlawful agreement or connivance with any other Bidder, firm or person to fix the price or prices in said subcontractor's Proposal, or to secure through collusion, conspiracy, connivance or unlawful agreement any advantage against the _____ and

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

_____
SIGNATURE

Subscribed and sworn to before me this ___ Day of _____ 20__

Public Notary (signature) _____

(print) _____

Commission expires:_____ Country of Residence:_____

REQUIRMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY

Executive Order 11246

1. The Offeror's or Bidders' attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, and as follows:

Timetable	Goals for minority participation in each trade	Goals for female participation in each trade
Until Further Notice	3.1	6.9

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR part 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the Contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority of female employees of trainees from Contractor to Contractor of from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting for this solicitation. The notification shall list the name, address, and telephone number of the subcontractor, employer identification number of the subcontractor, estimated dollar amount of the subcontract, estimated starting and completion dates of the subcontract, and the geographical area in which the subcontract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is coextensive with the political jurisdiction of the City of Terre Haute, Indiana.

CONTRACTOR
EQUAL EMPLOYMENT OPPORTUNITY
Executive Order 11246
(30 F.R. 12319-25)

Sec. 202. Except in contracts exempted in accordance with Section 204 of this order, all Government contracting agencies shall include in every Government contract hereafter entered into the following provisions:

"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, 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 or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer; 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 a conspicuous place, available to employees and applicants for employment, notices to be provided by the contracting offer setting forth the provision 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, or national origin.

3) The contractor will send to each labor union or representative of workers with which he/she has collective bargaining agreement or other contract or understanding, a notice to be provided by the agency contracting officer, advising the labor union of workers' representative of the contractors' commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

4) The contractor will comply with all provisions of Executive Order No. 1124 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

5) The contract will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor for purposes of investigation to ascertain compliance with each rule, regulation and order.

6) In the event of the contractor's non-compliance with the nondiscrimination clauses of the contract or with any such rules, regulations, or orders, this contract may be cancelled, terminated or suspended in whole or part, the contractor may be declared ineligible for Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

7) The contract will include the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor pursuant to Section 202 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding action with respect to any subcontract or purchase order as the Department may direct as a means of enforcing such provisions including sanctions for non-compliance; Provided however, that in the event the contractor becomes involved in, or is threatened with, litigation with a sub-contractor or vendor as a result of such direction by the Department, the contractor may request the United States to enter into such litigation to protect the interest of the United States.

THIS COMPANY WILL COMPLY WITH THE PROVISIONS OF SECTIONS 202 OF EXECUTIVE ORDER 11246

Name of Firm:_____

Address: _____

Signature: _____

Printed: _____

Date: _____

SUBCONTRACTOR
EQUAL EMPLOYMENT OPPORTUNITY
Executive Order 11246
(30 F.R. 12319-25)

Sec. 202. Except in contracts exempted in accordance with Section 204 of this order, all Government contracting agencies shall include in every Government contract hereafter entered into the following provisions:

"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, 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 or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer; 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 a conspicuous place, available to employees and applicants for employment, notices to be provided by the contracting offer setting forth the provision 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, or national origin.

3) The contractor will send to each labor union or representative of workers with which he/she has collective bargaining agreement or other contract or understanding, a notice to be provided by the agency contracting officer, advising the labor union of workers' representative of the contractors' commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

4) The contractor will comply with all provisions of Executive Order No. 1124 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

5) The contract will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor for purposes of investigation to ascertain compliance with each rule, regulation and order.

6) In the event of the contractor's non-compliance with the nondiscrimination clauses of the contract or with any such rules, regulations, or orders, this contract may be cancelled, terminated or suspended in whole or part, the contractor may be declared ineligible for Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

7) The contract will include the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor pursuant to Section 202 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding action with respect to any subcontract or purchase order as the Department may direct as a means of enforcing such provisions including sanctions for non-compliance; Provided however, that in the event the contractor becomes involved in, or is threatened with, litigation with a sub-contractor or vendor as a result of such direction by the Department, the contractor may request the United States to enter into such litigation to protect the interest of the United States.

THIS COMPANY WILL COMPLY WITH THE PROVISIONS OF SECTIONS 202 OF EXECUTIVE ORDER 11246

Name of Firm:_____

Address: _____

Signature: _____

Printed: _____

Date: _____

CONTRACTOR'S CERTIFICATE REGARDING
DRUG-FREE WORK PLACE

The Contractor certifies that it will provide a drug-free workplace by:

1. Publishing a Statement notifying employees that the unlawful manufacture, distribution, dispensing, possession; or use of a controlled substance is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violation of such prohibition.

2. Establishing an ongoing drug-free awareness program to inform employee about:
    a. The dangers of drug abuse in the workplace
    b. The Contractor's policy of maintaining a drug-free workplace
    c. Any available drug counseling, rehabilitation, and employee assistance programs
    d. The penalties that may be imposed upon employees for drug abuse violation occurring in the workplace

3. Giving each employee to be engaged in the performance of work on this contract a copy of the above required statement.

4. Notifying the employee in the required Statement that, as a condition of employment on this Contract, the employee will:
    a. Abide by the terms of the Statement; and
    b. Notify the employer in writing of his or her conviction for a violation of a criminal drug stature occurring in the workplace no later than five calendar days after such conviction.

5. Notifying the Contracting Officer in writing, within ten calendar days after receiving notice under subparagraph 4 (b) from an employee of otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every Contracting Officer or other designee on whose Contract activity the convicted employee was working. Notice shall include the identification number (s) of the Contract of funding Grant.

6. Taking one of the following actions, within 30 calendar days of receiving notice under paragraph 4 (b), with respect to any employee who is so convicted –
    a. Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended, or
    b. Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purpose by a Federal, State, or local health, law enforcement, or other appropriate agency.

DATE:_____ **COMPANY:**_____

SIGNATURE:_____ **PRINTED:**_____

SUBCONTRACTOR'S CERTIFICATE REGARDING
DRUG-FREE WORK PLACE

The subcontractor certifies that it will provide a drug-free workplace by:

1. Publishing a Statement notifying employees that the unlawful manufacture, distribution, dispensing, possession; or use of a controlled substance is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violation of such prohibition.

2. Establishing an ongoing drug-free awareness program to inform employee about:
    a. The dangers of drug abuse in the workplace
    b. The Contractor's policy of maintaining a drug-free workplace
    c. Any available drug counseling, rehabilitation, and employee assistance programs
    d. The penalties that may be imposed upon employees for drug abuse violation occurring in the workplace

3. Giving each employee to be engaged in the performance of work on this contract a copy of the above required statement.

4. Notifying the employee in the required Statement that, as a condition of employment on this Contract, the employee will:
    a. Abide by the terms of the Statement; and
    b. Notify the employer in writing of his or her conviction for a violation of a criminal drug stature occurring in the workplace no later than five calendar days after such conviction.

5. Notifying the Contracting Officer in writing, within ten calendar days after receiving notice under subparagraph 4 (b) from an employee of otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every Contracting Officer or other designee on whose Contract activity the convicted employee was working. Notice shall include the identification number (s) of the Contract of funding Grant.

6. Taking one of the following actions, within 30 calendar days of receiving notice under paragraph 4 (b), with respect to any employee who is so convicted –
    a. Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended, or
    b. Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purpose by a Federal, State, or local health, law enforcement, or other appropriate agency.

DATE:_____ **SIGNATURE:**_____

SIGNATURE:_____

CONTRACTOR'S CERTIFICATE OF ANTI-LOBBYING

The Contractor certifies that to the best of his/her knowledge and belief that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the contractor, 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 the awarding of any Federal contract, 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.

2. 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 contractor shall complete and submit Standard Form LLL, 'Disclosure Form to Report Lobbying,' in accordance with its instructions.

3. The contractor 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 surecipients shall certify and disclose accordingly.

Date:_____ _____

Name of Contractor

Official Address (Including Zip) By:_____

_____ _____

_____

_____

Subscribed and sworn to before me this ___ Day of _____ 20__

Public Notary (signature) _____

(print) _____

Commission expires:_____ Country of Residence:_____

SUBCONTRACTOR'S CERTIFICATE OF ANTI-LOBBYING

The subcontractor certifies that to the best of his/her knowledge and belief that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the contractor, 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 the awarding of any Federal contract, 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.

2. 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 contractor shall complete and submit Standard Form LLL, 'Disclosure Form to Report Lobbying,' in accordance with its instructions.

3. The subcontractor 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 surecipients shall certify and disclose accordingly.

Date:_____ _____

Name of Subcontractor

Official Address (Including Zip) By:_____

_____ _____

_____

_____

Subscribed and sworn to before me this ___ Day of _____ 20__

Public Notary (signature) _____

(print) _____

Commission expires:_____ Country of Residence:_____

CONTRACTOR'S CERTIFICATION OF NONSEGREGATED FACILITIES

The Bidder certifies that he/she does not maintain nor provide for his/her employees any segregated facilities at any of his/her establishments, and that he/she does not permit his/her employees to perform their services at any location, under his/her control, where segregated facilities are maintained. The Bidder certifies further that he/she will not maintain or provide for his/her employees any segregated facilities at any of his/her establishments, and that he/she will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The Bidder agrees that a breach of the certificate will be in violation of the Equal Opportunity clause in any contract resulting from acceptance of his/her bid. As used in this certification, the term "segregated Facilities" mean any waiting rooms, work areas, restrooms, and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directives or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. The Bidder agrees that he/she will obtain identical certification from proposed subcontractors prior to the award of subcontracts.

Date:_____ _____

Name of Contractor

Official Address (Including Zip) By:_____

_____ _____

_____

_____

Subscribed and sworn to before me this ___ Day of _____ 20__

Public Notary (signature) _____

(print) _____

Commission expires:_____ Country of Residence:_____

SUBCONTRACTOR'S CERTIFICATION OF NONSEGREGATED FACILITIES

The subcontractor certifies that he/she does not maintain nor provide for his/her employees any segregated facilities at any of his/her establishments, and that he/she does not permit his/her employees to perform their services at any location, under his/her control, where segregated facilities are maintained. The subcontractor certifies further that he/she will not maintain or provide for his/her employees any segregated facilities at any of his/her establishments, and that he/she will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The subcontractor agrees that a breach of the certificate will be in violation of the Equal Opportunity clause in any contract resulting from acceptance of his/her bid. As used in this certification, the term "segregated Facilities" mean any waiting rooms, work areas, restrooms, and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directives or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. The subcontractor agrees that he/she will obtain identical certification from proposed subcontractors prior to the award of subcontracts.

Date:_____ _____

Name of Contractor

Official Address (Including Zip) By:_____

_____ _____

_____

_____

Subscribed and sworn to before me this ___ Day of _____ 20__

Public Notary (signature) _____

(print) _____

Commission expires:_____ Country of Residence:_____

LIST OF SUBCONTRACTORS

Each bidder shall submit their Subcontractors List with their Bid.

After submission of this Schedule and after approval by the Owner and the Architect, it shall not be changed without prior approval by the Owner and the Architect.

SUBCONTRACTOR:

Name	Trade
Address	President, Owner, Partner, Etc.
City/State/Zip Code	Email
Telephone/Fax	

Name	Trade
Address	President, Owner, Partner, Etc.
City/State/Zip Code	Email
Telephone/Fax	

Name	Trade
Address	President, Owner, Partner, Etc.
City/State/Zip Code	Email
Telephone/Fax	

Name	Trade
Address	President, Owner, Partner, Etc.
City/State/Zip Code	Email
Telephone/Fax	

Name

Address

City/State/Zip Code

Telephone/Fax

Trade

President, Owner, Partner, Etc.

Email

Name

Address

City/State/Zip Code

Telephone/Fax

Trade

President, Owner, Partner, Etc.

Email

Name

Address

City/State/Zip Code

Telephone/Fax

Trade

President, Owner, Partner, Etc.

Email

Name

Address

City/State/Zip Code

Telephone/Fax

Trade

President, Owner, Partner, Etc.

Email

Name

Address

City/State/Zip Code

Telephone/Fax

Trade

President, Owner, Partner, Etc.

Email

Contract Provisions

All contracts, awarded by a recipient including small purchases shall contain the following provisions as applicable:

1. **Equal Employment Opportunity** – All contracts shall contain a provision requiring compliance with E.O. 11246, "Equal Employment Opportunity," as amended by E.O. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR Part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

2. **Copeland "Anti-Kickback" Act (18 U.S.C. 874 and 40 U.S.C. 27c)** – All contracts and subgrants in excess of $2,000 for construction or repair awarded by recipients and subrecipients shall include a provision for compliance with the Copeland "Anti-Kickback" Act (18 US.C. 874), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he is otherwise entitled. The recipient shall report all suspected or reported violations to the Federal warding agency.

3. **Davis-Bacon Act**, as amended (40 U.S.C. 276a to a-7) – When required by Federal program legislation, all construction contracts awarded by the recipients and subrecipients of more than $2,000 shall include a provision for compliance with the Davis-Bacon Act (40 U.S. C. 276a to a-7) and as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction"). Under this Act, contracts shall be required to pay wages to laborers and mechanics at a rate not less than the minimum wages specified in a wage determination made by the Secretary of Labor. In addition, contractors shall be required to pay wages not less than once a week. The recipient shall place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation and the award of a contract shall be conditioned upon the acceptance of the wage determination. The recipient shall report suspected or reported violations to the Federal awarding agency.

4. **Contract Work Hours and Safety Standards Act (40 U.S.C. 327-333)** – Where applicable, all contracts awarded by recipients in excess of $2,000 for construction contracts and in excess of $2,500 for other contracts that involved the employment of mechanics or laborers shall include a provision for compliance with Section 102 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-333), as supplemented by Department of Labor regulations (29 CFR Part 5). Under Section 102 of the Act, each contractor shall be required to compute the wages every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than 1 ½ times the basic rate of pay for all hours worked in excess of 40 hours in the

work week. Section 107 of the Act is applicable to construction work and provides that no laborer or mechanic shall b required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open marker, or contracts for transportation or transmission of intelligence.

5. **Rights to Inventions Made Under a Contract or Agreement** – Contracts or agreements for the performance of experimental, developmental, or research work shall provide for the rights of the Federal Government and the recipient in any resulting invention in accordance with 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

6. **Clean Air Act (42 U**.S.C. 7401 et seq.) and the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), as amended – Contracts and subgrants of amounts in excess of $100,000 shall contain a provision that requires the recipient to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251 et seq.). Violations shall be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

7. **Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)** – 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.

8. **Debarment and Suspension (E.O.s 12549 and 12689)** – No contract shall be made to parties listed on the General Services Administration's List of Parties Excluded from Federal Procurement or Nonprocurement Programs in accordance with E.O.s 12549 and 12689, "Debarment and Suspension." This list contains the names of parties debarred, suspended, or otherwise excluded by agencies, and the contractors declared ineligible under statutory or regulatory authority other than E.O. 12549. Contractors with awards that exceed the small purchase threshold shall provide the required certification regarding its exclusion status and that of its principal employees.

"General Decision Number: IN20240003 03/01/2024

Superseded General Decision Number: IN20230003

State: Indiana

Construction Type: Building

Counties: Clay, Gibson, Greene, Owen, Parke, Posey, Putnam, Sullivan, Vanderburgh, Vermillion, Vigo and Warrick Counties in Indiana.

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/05/2024
1	02/02/2024
2	03/01/2024

ASBE0018-003 06/01/2023

CLAY, GREENE, OWEN, PARKE, PUTNAM, VERMILLION AND VIGO COUNTIES

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR (includes application of all insulating materials protective coverings, coatings and finishes to all types of mechancial systems)	$ 35.70	22.28
HAZARDOUS MATERIAL HANDLER (includes preparation, wettings stripping, removal, scrapping, vacuuming, bagging & disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems)	$ 23.00	14.40

ASBE0037-002 04/02/2023

GIBSON, POSEY, SULLIVAN, VANDERBURGH AND WARRICK COUNTIES

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR (includes application of all insulating materials protective coverings, coatings an finishes to all types of mechanical systems. Also the application of firestopping material openings and penetrations in walls, floors, ceilings, curtain walls and all lead abatement)	$ 32.00	21.84

BOIL0374-002 01/01/2023

	Rates	Fringes
BOILERMAKER	$ 41.06	34.07

BRIN0001-001 06/01/2023

EVANSVILLE
POSEY, VANDERBURGH and WARRICK COUNTIES

	Rates	Fringes
Bricklayer, Stonemason	$ 34.17	20.14
Marble, Tile & Terrazzo Finisher	$ 22.09	16.34
Marble, Tile & Terrazzo		

Workers.....$ 28.49 16.46

BRIN0004-012 06/01/2023

BLOOMINGTON
OWEN COUNTY

	Rates	Fringes
Bricklayer, Stonemason	$ 33.29	17.44
TERRAZZO FINISHER	$ 23.38	13.15
TERRAZZO WORKER/SETTER	$ 36.38	17.64
Tile & Marble Finisher	$ 24.33	13.16
Tile, Marble Setter	$ 36.38	17.24

BRIN0005-001 09/21/2023

TERRE HAUTE CLAY, GIBSON, REENE, PARKE, SULLIVAN, VERMILLION and VIGO COUNTIES

	Rates	Fringes
BRICKLAYER		
BRICKLAYER, STONE MASON and POINTER/CLEANER/CAULKER	$ 30.13	11.65
CEMENT MASON (GREENE and SULLIVAN COUNTIES)	$ 27.78	11.02
CEMENT MASON (REMAINING COUNTIES)	$ 27.93	11.02
TERRAZZO FINISHER	$ 23.38	1315
TERRAZZO	$ 27.50	15.20
TILE and MARBLE FINISHER	$ 19.83	6.32
TILE, MARBLE, MOSAIC	$ 35.63	17.23

CARP0088-001 10/01/2023

CLAY, OWEN, PARKE, PUTNAM, VERMILLION AND VIGO COUNTIES

	Rates	Fringes
Carpenters:		
Carpenters, Drywall Installers, Piledrivers	$ 34.10	23.39
Millwright	$ 35.00	25.00
Soft Floor Layers	$ 33.47	20.07

CARP0224-004 04/01/2023

POSEY, VANDERBURGH AND WARRICK COUNTIES

	Rates	Fringes
CARPENTER		
Carpenter	$ 29.89	24.42
Piledriver	$ 28.71	22.49

CARP0224-005 04/01/2023

GREENE, GIBSON and SULLIVAN COUNTIES

	Rates	Fringes
CARPENTER		
Carpenter	$ 29.88	24.38

Piledriver.....$ 28.71 22.45

CARP1080-002 04/01/2023

	Rates	Fringes
MILLWRIGHT		
ZONE 1		
POSEY, VANDERBURGH and WARRICK COUNTIES	$ 32.27	25.54
ZONE 2		
GIBSON, GREENE AND SULLIVAN COUNTIES	$ 30.97	27.50

ELEC0016-004 04/01/2023

GIBSON, POSEY, VANDERBURGH AND WARRICK COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 41.04	18.94

ELEC0481-001 05/31/2023

PUTNAM COUNTY

	Rates	Fringes
ELECTRICIAN	$ 40.20	26.31

ELEC0538-002 06/01/2023

VERMILLION COUNTY

	Rates	Fringes
ELECTRICIAN	$ 39.09	24.37

ELEC0725-003 10/01/2022

CLAY, GREENE, OWEN, PARKE, SULLIVAN AND VIGO COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 40.00	21.96

ELEC0725-010 06/01/2022

CLAY, GREENE, OWEN, PARKE, SULLIVAN AND VIGO COUNTIES

	Rates	Fringes
Communication Technician	$ 30.00	18.07

Includes the installation, operation, inspection, maintenance, repair and service of radio, television, recording, voice sound and vision production and reproduction apparatus, equipment and appliances used for domestic, commercial, education, entertainment and private telephone systems.

ELEV0003-002 01/01/2023

GIBSON, POSEY, VANDERBURGH and WARRICK COUNTIES

	Rates	Fringes
ELEVATOR MECHANIC	$ 57.69	37.335+a+b

FOOTNOTES:

a) Employer contributes as a vacation pay credit 8% basic hourly rate for more than 5 years of service and 6% basic hourly rate for less than 5 years of service.

b) Eight Paid Holidays: Thanksgiving Day; New Year's Day; Memorial Day; Independence Day; Labor Day; Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day and Christmas Day.

ELEV0034-002 01/01/2023

CLAY, GREENE, OWEN, PARKE, PUTNAM, SULLIVAN, VERMILLION and VIGO COUNTIES

	Rates	Fringes
ELEVATOR MECHANIC	$ 55.30	37.335+a+b

a) PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Vetern's Day, Thanksgiving Day, the Friday after Thanksgiving, and Christmas Day.

b) Employer contributes 8% of regular hourly rate to vacation pay credit for employee with more than 5 years of service; 6% for less than 5 years' service.

ENGI0181-013 04/01/2022

GIBSON, POSEY, VANDERBURGH, and WARRICK COUNTIES

	Rates	Fringes
Power equipment operators:		
GROUP A	$ 39.50	19.28
GROUP B	$ 36.85	19.28

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP A: A-Frame Winch Truck, Articulating dump, autograde (CMI), auto patrol, ballast regulator (RR), batcher plant (electrical control concrete), bending machine (pipe), bituminous plant (engineer), bituminous plant, bituminous mixer travel plant, bituminous paver, bituminous roller, boring machine, buck hoist, bull dozer, cable way, Chicago boom, chimney hoist, clamshell, concrete mixer (21 cu. ft. or over), concrete paver, concrete pump (crete), construction elevator (Allmac or similar) crane, craneman, crawler backhoe, crawler high-lift, crusher plant, derrick, derrick boat, dinkey, directional/boring machine, dope pots (pipeline), double drum tugger (electric or air), dragline, dredge operator, dredge engineer, drill operator, elevating grader, extendable boom forklift, formless paver, gantry crane, gator (or similar type tiller), gradeall, grader, grademan, greaser (on grease facility servicing heavy equipment), G.P.S System (on equipment with the

classifications), grout pump, head greaser, helicopter crew, Hetherington paver, hoist (motorized, gas or diesel), hydraulic crane, hydro blaster, Industrial type forklift (over 9,000 lbs), laser concrete screed, laser or remote contrlled equipment (within the classifications), locomotive crane, locomotive, mechanic, mobile mixer, motor crane, mucking machine, multiple tamping machine (RR) overhead crane, pile driver, pulls, push dozer, push boats, roller (sheep foot), rough terrain crane, R.T. backhoe, R.T. endloader, Ross carrier, scoop, shovel, side boom, skidstter loader (obcat or similar type), swing crane, tail boom, tar machine (pipeline), tower crane, trench machine, welder (heavey duty), truck mounted concrete pump, truck-mounted drill, vacuum truck, well point whirleys.

GROUP B: Air Compressor (1 or more, 600 cfm and over), air compressor with throttle valve, bituminous distrubtor, brakeman, bullfloat, cement gun, concrete mixer, concrete mixer, concrete saw, concrete spreader or puddlers, conveyor, deck hand oiler, deck engine, drill helper, earth roller, electric vibrator compactor (earth or rock), elevator (in-plant, automatic), finishing machine, fireman, form grader, generator, guard-rail driver, heater, oiler, Industrial type forklift (9,000 lbs and under), material pump, motor boats, paving joint machine, post hole digger, power broom, power traffic signals, rock roller, rock spreader, Roller (earth or rock), spike machine (RR), steam jenny, sub grader, tamping machine, truck crane oiler, truck mounted drill oiler, Tugger (one-drum, air or electric) vibrator, vibro-piling hammer-hydraulic hammer or auger, water pump, widener (apsco or similar type) welding machine, JLG lifts and scissor lifts or similar machine.

ENGI0841-001 04/01/2023

REMAINING COUNTIES

	Rates	Fringes
Power equipment operators:		
GROUP 1	$ 33.90	23.00
GROUP 2	$ 26.75	23.00

GROUP 1: Power Cranes, Draglines, Derricks, Shovels, Gradalls, Mechanics, Tractor Highlift, Tournadozer, Concrete Mixers with Skip, Tournamixer, Two-Drum Machine, One-Drum Hoist with Tower or Boom, Cableways, Tower Machines, Motor Patrol, Boom Tractor, Boom or Winch Truck, Winch or Hydraulic Boom Truck, Truck Crane, Tournapull, Tractor Operating Scoops, Bulldozer, Push Tractor, Asphalt Planer, Finishing Machine on Asphalt, Large Rollers on Earth, Rollers on Asphalt Mix, Ross Carrier or Similar Machine, Gravel Processing Machine, Asphalt Plant Engineer, Paver Operator, Farm Tractor with Half Yard Bucket and/or Backhoe Attachments, Dredge Engineer, or Dredge Operator, Central Mix Plant Engineer, CMI or Similar Type Machine, Truck or Skid Mounted Concrete Pump, Tower Crane, Engine or Rock Crusher Plant, Concrete Plant Engineer, Ditching Machine with Dual Attachment, Tractor Mounted Loaders, Cherry Picker, Hydro Crane, Standard or Dinkey Locomotives, Scoopmobiles, Euclid Loader, Soil Cement Machine, Back Filler, Elevating Machine, Power Blade, Drilling Machines Including Well Testing, Caissons, Shaft or Any Similar Type Drilling Machines, Motor Driven Paint Machine, Pipe

Cleaning Machine, Pipe Wrapping Machine, Pipe Bending Machine, Apsco Paver, Boring Machine, (Equipment Greased), Barber-Greene Loaders, Formless Paver, (Well Point System), Concrete Spreader, Hydra Ax, Span Saw and Similar Types, Marine Scoops, Brush Mulcher, Brush Burner, Mesh Placer, Tree Mover, Helicopter Crew (3), Piledriver - Skid or Crawler, Stump Remover, Root Rake, Tug Boat Operator, Refrigerating Machine, Freezing Operator, Chair Cart-Self Propelled, Hydra Seeder, Straw Blower Power Sub Grader, Bull Float, Finishing Machine, Self-Propelled Pavement Breaker (Backhoe Attached), Lull (or Similar Type Machine), Two Air Compressors, Compressors Hooked in Maifold, Overhead Crane, Chip Spreader, Mud Cat, Sull-Air Fork Lifts (Except When Used For Landscaping Work), Soil Stabilazer (Seaman Tiller, Bo Mag, Rago Gator and Similar Types or Equipment), Tube Float, Spray Machine, Curing Machine, Concrete or Asphalt Milling Machine, Snooper Truck Operator.

GROUP 2: Concrete Mixers Without Skips, Rock Crusher, Ditching Machine Under 6', Curbing Machine, One Drum Machines without Tower or Boom, Air Tugger, Self-Propelled Concrete Saw, Machine-Mounted Post Hole Digger, Two to Four Generators, Water Pumps, or Welding Machines within 400 ft., Air Compressor 600 cu. ft. and Under, Rollers on Aggregate and Seal Coat Surfaces, Fork Lifts (When Used For Landscaping Work, Concrete and Blacktop Curb Machine, Farm Tractor with less than Half Yard Bucket, One Water Pump, Iolers, Air Valves or Steam Valves, One Welding Machine, Truck Jack, Mud Jack, Gunnite Machine, House Elevators when used for Hoisting Material, Engine Tenders, Wagon Drill, Flex Plane, Conveyor, Siphons and Pulsometer, Switchman, Fireman on Paint Pots, Fireman on Asphalt Plants, Distributor Operators on Trucks, Tampers, Self-Propelled Power Broom, Striping Machine (Motor Driven), Form Tamper, Bulk Cement Plan Equipment Greaser, Deck Hands, Truck Crane Oiler Driver, Cement Blimps, Form Grader, Temporary Heat, Throttle Valve, Farm Tractor, Super Sucker (And Similar Type of Equipment).

FOOTNOTE: Employees operating booms from 149 ft. to 199 ft. including jib, shall receive an additional seventy five cents (.75) per hour above the rate. Employees operating booms over 199 ft. including jib, shall receive an additional one dollar and twenty five cents ($1.25) per hour above the regular rate.

IRON0022-003 06/01/2023

CLAY, DAVIESS, GREENE, KNOX, LAWRENCE, MARTIN, MONROE, MONTGOMERY, OWEN, PARKE, PUTNAM, SULLIVAN, VERMILLION AND VIGO COUNTIES

	Rates	Fringes
IRONWORKER	$ 35.45	25.39

The following holidays shall be observed: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and the day after Thanksgiving and Christmas Day. Any holiday which occurs on a Sunday shall be observed the following Monday, unless the legal observance of these holidays is changed by law.

IRON0103-003 04/01/2023

GIBSON, POSEY, VANDERBURGH AND WARRICK COUNTIES

	Rates	Fringes
IRONWORKER	$ 31.99	25.55

LABO0204-002 06/01/2023

CLAY, GREENE, OWEN, PARKE, PUTNAM, SULLIVAN, VERMILLION, and VIGO COUNTIES

	Rates	Fringes
Laborers:		
Caisson and Tunnel Work in Compressed and Free Air		
GROUP 1	$ 23.18	16.00
GROUP 2	$ 23.93	16.00
GROUP 3	$ 24.18	16.00
GROUP 4	$ 24.18	16.00
LABORERS		
GROUP 1	$ 26.03	17.50
GROUP 2	$ 26.78	17.50
GROUP 3	$ 27.53	17.50

LABORER CLASSIFICATIONS

GROUP1: Building and construction laborers; Scaffold builders (other than for masons or plasterers); Mechanic tenders; Flag & signal person; Window washers & cleaners; Waterboys & toolhousemen; Railroad workers; Masonry wall washers (interior & exterior); Curing compound; All portable water pumps with discharge up to 3 inches; Waterproofing; Handling of creosote lumber or like treated material (excluding railroad material); Asphalt rakers & lutemen; Kettlemen; Air tool operators and all pneumatic tool operators; Air & electric vibrators & chipping hammer operators: Earth compactors; Jackmen & sheet men working ditches deeper than 6 ft. in depth; Laborers working ditches 6 ft. in depth or deeper; Assembly of unicrete pump; Tile layers (sewer or field) & sewer pipe layer (metallic or non-metallic); Motor-driven wheelbarrows & concrete buggies; Hyster operators; Pumpcrete assemblers; Core drill operator; Cement, lime or silia clay handlers (bulk or bag); Handling of toxic materials damaging to clothing; Pneumatic spikers; Deck engine & winch operators: Water main & cable ducking (metallic/non-metallic); Screed man or screw operator on asphalt paver; Chain saw and demolition saw operators; Concrete conveyor assemblers; Asbestos removal; Hazardous waste removal.

GROUP 2: Plasterers' tenders; Mortar mixers; Welders (acetylene or electric); Cutting torch or burner; Cement nozzle laborers; Cement gun operators; Scaffold builders when working for plasterers and for masons; Water blast machine operators.

GROUP 3: Dynamite men; Mason Tenders; Drillers-air track or wagon drilling for explosives

LABORERS CLASSIFICATIONS For CAISSON And TUNNEL WORK In COMPRESSED And FREE AIR

GROUP 1: Cage Tenders, Dump Men, Flagman, Signalman, Top Laborers, Rod Men

GROUP 2: Concrete Repairmen, Lock Tenders (pressure side), Motor men, Muckers, Grout Machine, Track Layers, Air Hoist, Key Board, Agitator Car, Car Pushers, Concrete Laborers, Grout Laborers, Lock Tenders (free air side), Steel Setters, Tuggers, Tuggers, Switchmen.

GROUP 3: Mucking Machine, Laser Beam, Liner Plate & Ring Setter, Shield Drivers, Power Knife, Welders Burners, Pipe Jacking Machine, Skinners, Maintenance Technician, Miner, Bricklayer Tenders, Concrete Blowers, Drillers, Erectors, Form Men, Jackhammermen, Mining Machine.

GROUP 4: Dynamite Men, Drillers air track or wagon drilling for explosives.

LABO0561-005 04/01/2023

GIBSON, POSEY, VANDERBURGH and WARRICK COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1	$ 27.12	18.10
GROUP 2	$ 27.42	18.10
GROUP 3	$ 28.62	18.10
GROUP 4	$ 28.87	18.10

LABORER CLASSIFICATIONS

GROUP 1: Building & Construction Laborers; Scaffold Builders (other than for Masons or Plasterers); Ironworker Tender; Mechanic Tender; Civil Engineer Tender; Rodmen and Chainmen; Signalmen and Flagman, Window Washer & Cleaner; Waterboy and Toolhouseman; Roofer Tender; Railroad Worker; Masonry Wall Washer (Interior & Exterior); Cement Finisher Tender; Carpenter Tender; All Other Tenders not listed; Portable Water Pump with discharge up to 3""; Wiremesh; Fire Prevention; Fire Watch; Fire Stop Tender

GROUP 2: Waterproofing; Handling of creosote Lumber or like treated material (Excluding Railroad Material); Asphalt Raker & Luteman; Kettleman; handling and removal Hazardous materials damaging to clothing; Air Tool Operator; Vibrator; Chipping Hammer Operator and all pneumatic tool operator and earth compactor; Jack Man & Sheeting Man Working in Ditches 6 Feet in depth or deeper; Laborers working ditches six (6) feet in depth or deeper; Assembly of Unicrete Pump; Chain Saw Operator; Water line layers, five (5) feet outside the building foundation; Tile layers (Sewer or Field); Sewer Pipe Layer (Metallic and Non-metallic) five (5) feet outside the building; Motor Driven Wheelbarrow & Concrete Buggy; Hyster Operator; Grout pump operator; Pump crete Assembler; Conveyor Assembler; Core Drill Operator; Cement/Lime/Silica Clay Handler (Bulk or Bar); Pneumatic Spiker; Deck/Engine/Winch Operator; Water Main & Cable Decking (Metallic or Non-metallic); Remote Controlled Compactor

GROUP 3: Plasterer Tender; Mason Tender; Mortar Mixer; Welder (Acetylene or Electric); Cutting Torch or Burner; Cement Gun Operator; Scaffold Builder (When working for Plasterer or Mason)

GROUP 4: Dynamite Man

PAIN0156-002 04/01/2023

GIBSON, POSEY, VANDERBURGH AND WARRICK COUNTIES

	Rates	Fringes
Painters:		
BRUSH & ROLLER	$ 27.30	18.19
DRYWALL FINISHERS	$ 27.55	19.19
SPRAY, SANDBLAST, POWER TOOLS, WATERBLAST & STEAM CLEANING	$ 29.55	18.19

FOOTNOTE A:
All Structures over 40? $0.75/ hour above base wage
All Structures over 75? $1.50/ hour above base wage
All Structures over 100? $2.50/ hour above base wage

PAIN0197-002 06/01/2023

CLAY, GREENE, OWEN, PARKE, PUTNAM, SULLIVAN, VERMILLION AND VIGO COUNTIES:

	Rates	Fringes
Painters:		
Brush & Roller	$ 29.25	14.20
Drywall & Paper hangers (with tools)	$ 30.25	14.20
Sandblasting	$ 31.25	14.20
Spray & Pot Man	$ 29.75	14.20

FOOTNOTE A: $1.00 premium for work on structures over 40 ft. above floor/ground level
$2.00 premium for work on structures over 100 ft above floor/ground level

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PAIN1165-007 07/01/2023

GIBSON, POSEY, VANDERBURGH, WARRICK COUNTIES

	Rates	Fringes
GLAZIER	$ 30.87	18.83

PAIN1165-012 01/01/2023

CLAY; GREENE; OWEN; PARKE; PUTNAM; SULLIVAN; VERMILLION and VIGO COUNTIES

	Rates	Fringes
GLAZIER	$ 31.92	19.43

PLAS0075-001 06/01/2017

CLAY, OWEN, PARKE, PUTNAM, VERMILLION AND VIGO COUNTIES:

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 25.75	13.50

PLAS0075-002 06/01/2017

GREENE and SULLIVAN COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 28.50	13.50

PLAS0566-001 04/01/2018

GIBSON, POSEY, VANDERBURGH AND WARRICK COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 26.30	16.91

PLAS0692-001 06/01/2023

AREA #46

CLAY, GIBSON, GREENE, OWEN, PARKE, POSEY, PUTNAM, SULLIVAN, VANDERBURGH, VERMILLION, VIGO and WARRICK COUNTIES

	Rates	Fringes
PLASTERER	$ 29.89	16.63

PLUM0136-002 04/01/2023

REMAINING COUNTIES

	Rates	Fringes
Plumbers and Pipefitters	$ 40.82	20.92

PLUM0157-001 07/01/2023

CLAY, GREENE, PARKE, PUTNAM (Part), SULLIVAN, VERMILLION and VIGO COUNTIES

	Rates	Fringes
Plumbers and Pipefitters	$ 41.30	21.92

PLUM0440-001 06/04/2023

PUTNAM COUNTY (EAST OF ROAD 43 EXCEPT TERRITORY ON A EAST MILE RADIUS FROM THE COURT HOUSE)

	Rates	Fringes
Plumbers and Pipefitters	$ 43.00	18.89

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* ROOF0106-001 04/01/2023

REMAINING COUNTIES:

	Rates	Fringes
Roofers:		
COMPOSITION	$ 31.60	19.43
SLATE & TILE	$ 31.60	19.43

ROOF0119-001 09/01/2023

PUTNAM COUNTY

	Rates	Fringes
Roofers:	$ 30.00	12.84

ROOF0150-002 07/01/2022

CLAY, GREENE, OWEN, PARKE, SULLIVAN, VERMILLION AND VIGO COUNTIES

	Rates	Fringes
ROOFER	$ 28.75	17.55

SFIN0669-002 04/01/2023

	Rates	Fringes
SPRINKLER FITTER	$ 43.36	27.29

SHEE0020-018 07/01/2023

CLAY, GREENE, OWEN, PARKE, PUTNAM, SULLIVAN, VERMILLION, and VIGO COUNTIES

	Rates	Fringes
Sheet metal worker HVAC Duct Work	$ 39.53	22.92

SHEE0020-019 07/01/2023

GIBSON, POSEY, VANDERBURGH, and WARRICK COUNTIES

	Rates	Fringes
Sheet metal worker HVAC Duct Work	$ 34.58	25.81

TEAM0135-006 04/01/2021

CLAY, GREENE OWEN, PARKE, PUTNAM, SULLIVAN, VERMILLION, and VIGO COUNTIES

	Rates	Fringes
Truck drivers:		
GROUP 1	$ 30.40	.37+A
GROUP 2	$ 30.90	.37+A

GROUP 3	$ 31.10	.37+A
GROUP 4	$ 31.25	.37+A
GROUP 5	$ 31.75	.37+A

A: $36.40 PER DAY & 450.00 PER WEEK.

TRUCK DRIVER CLASSIFICATIONS:

GROUP 1: Single Axle Trucks seven (7) cu.yds. or less than ten and 0ne-half (10 1/2) tons, dumpsters, scoop-mobiles five (5) cu. yds. and under or less than seven and one-half (7 1/2) tons, mixer trucks three (3) cu.yds. and under, air compressors and welding machines, including those pulled by separate units, batch trucks-wet or dry-2""34-E batches or less, truck driver helpers, warehousemen, mechanic's helpers, greasers and tiremen, all pick-up trucks and other vehicles. Drivers on dumpsters or similar dumpsters, mounted on four
(4) wheel truck rated two (2) cu.yds. or less, and small pallet type fork-lift operator and drivers on pallet jacks or similar type equipment.

GROUP 2: Drivers on tandem axle eighteen (18) cu.yds.or twenty- four (24) tons gross, six (6) wheel trucks, Koehring or similar dumpsters, tract trucks, Euclids, hug bottom dumps, tournapulls, tournatrailers, tournarockers, or similar equipment when used for transportation purposes under nine (9) cu.yds. or less than thirteen and one-half (13 1/2)
tons, tandems and semi-trailer service trucks, mixer trucks over three (3) cu. yds. and including six and one-half (6 1/2) cu.yds., fork lift, four (4) wheel A frame trucks when used for transportation purposes, four (4) wheel winch trucks, pavement breakers, batch trucks - wet or dry - over 2 up to and including 4-""34-E"" batches two (2) men oil distributors, fork-lift under four (4) ton and vacuum trucks.

GROUP 3: Koehring or similar dumpsters, tract trucks, semi-trailer water trucks, Euclids, hug bottom dumps, tournapulls, tournatrailers, tournarockers, tractor trailers, tandems Q frame winch trucks, hydrolift trucks or similar equipment when used for transportation purposes, mixer trucks over six and one-half (6 1/2) cu.yds. batch trucks wet or dry over 4-""34-E"" batches single axle low boy trailers, and Contractor's mechanics when working on equipment operated by employees within this Bargaining Unit. Six (6) wheel pole trailers and one (1) man oil distributors, fork- lift over four (4) ton and mobile mixers.

GROUP 4: Drivers on heavy equipment over sixteen (16) cu.yds. or twenty-four ton, such as Koehring or similar dumpsters, tract trucks, Euclids, hug bottom dumps, tournapulls, tournarockers or similar equipment wen used for transportation purposes, pole trailers
over six (6) wheels, water pulls, low-boy trailers tandem axles, quad axle or more no-weight limitation, diseal and/or heavy equipment mechanics when working on equipment operated by employees with this Bargaining Unit.

GROUP 5: Mechanic furnishing his own tools.

GIBSON, POSEY, VANDERBURGH AND WARRICK COUNTIES:

	Rates	Fringes
Truck drivers:		
GROUP 1	$ 25.08	20.95
GROUP 2	$ 25.54	20.95
GROUP 3	$ 25.76	20.95

GROUP 1 - Pickup Trucks, Winch Trucks, Warehouseman, Mechanic, Street sweepers, Single axle trucks

GROUP 2 - Tandem Trucks or Dump Trucks; Farm Tractor Pulling trailer; Bituminous Distributors, Pavement Breakers

GROUP 3 - Mixer Trucks, all types; Lowboys, all types; Semi-trucks, all types; All Tri-axle Dump Trucks; Articulated End Dumps; End Dumps; Heavy Equipment Type Water Wagons; Hazardous Waste Warehouseman; Hazardous Waste Driver; and Drivers on equipment when not self-loaded or pusher loaded, such as Koehring or similar dumpsters, track trucks, Euclid bottom dump and hug bottom dump, Tournatrailers, Tournarockers or similar equipment.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular

rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

PROJECT SPECIFICATIONS

Drawings: Refer to Drawing T-1 for an index to drawings.

Section 01070

CUTTING AND PATCHING

PART ONE - GENERAL

1.01 DESCRIPTION

A. Work included: This Section establishes general requirements pertaining to cutting (including excavating), fitting, and patching of the Work required to:

(1) Make the several parts fit properly.

(2) Uncover Work to provide for installation, inspection, or both, of ill-timed Work.

(3) Remove and replace Work not conforming to requirements of the Contract Documents.

(4) Remove and replace defective Work.

B. Related work described elsewhere:

(1) In addition to other requirements specified, upon the Architect's request, uncover Work to provide for inspection by the Architect of covered Work, and remove samples of installed materials for testing.

(2) Do no cut or alter work performed under separate contract without the Architect's written permission.

1.02 QUALITY ASSURANCE

A. Perform all cutting and patching in strict accordance with pertinent requirements of these Specifications and, in the event no such requirements are determined in conformance with the Architect's written direction.

1.03 SUBMITTALS

A. Request for the Architect's consent:

(1) Prior to cutting which affects structural safety, submit written request to the Architect for permission to proceed with cutting.

(2) Should conditions of the Work, or schedule, indicate a required change of materials or methods for cutting and patching, so notify the Architect and secure his written permission prior to proceeding.

B. Notices to the Architect:

(1) Prior to cutting and patching performed pursuant to the Architect's instructions, submit cost estimate to the Architect. Secure the Architect's approval of cost estimates and type of cost reimbursement before proceeding with cutting and patching.

(2) Submit written notice to the Architect designating time the Work will be uncovered, to provide for the Architect's observation.

PART TWO - PRODUCTS

2.01 MATERIALS

A. For replacement of Work removed, use materials which comply with the pertinent Sections of these Specifications.

2.02 PAYMENT FOR COSTS

A. The Owner will reimburse the Contractor for cutting and patching performed pursuant to the Architect's written request after claim for such reimbursement is submitted by the Contractor. Perform all other cutting and patching needed to comply with the Contract Documents at no additional cost to the Owner.

PART THREE - EXECUTION

3.01 CONDITIONS

A. Inspection:

(1) Inspect existing conditions, including elements subject to movement or damage during cutting, excavating, backfilling, and patching.

(2) After uncovering the Work, inspect conditions affecting installation of new Work.

B. Discrepancies:

(1) If uncovered conditions are not as anticipated, immediately notify the Architect and secure needed directions.

(2) Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 PREPARATION PRIOR TO CUTTING

A. Provide all required protection including, but not necessarily limited to, shoring, bracing, and support to maintain structural integrity of the Work.

3.03 PERFORMANCE

A. Perform all required excavating and backfilling as required under pertinent Sections of these Specifications. Perform cutting and demolition by methods which will prevent damage to other portions of the Work and will provide proper surfaces to receive installation of repair and new work. Perform fitting and adjustment of products to provide finished installation complying with the specified tolerance and finishes.

END OF SECTION

Section 01085

APPLICABLE STANDARDS

PART ONE – GENERAL

1.01 DESCRIPTION

A. Work included:

1) Throughout the Contract Documents, reference is made to codes and standards which establish qualities and types of workmanship and materials, and which establish methods for testing and reporting on the pertinent characteristics.

2) Where materials or workmanship are required by these Contract Documents to meet or exceed the specifically named code or standard, it is the Contractor's responsibility to provide materials and workmanship which meet or exceed the specifically named code or standard.

3) It is also the Contractor's responsibility, when so required by the Contract Documents or by written request from the Architect, to deliver to the Architect all required proof that the materials or workmanship, or both, meet or exceed the requirements of the specifically named code or standard. Such proof shall be in the form requested in writing by the Architect, and generally will be required to be copies of a certified report of tests conducted by a testing agency approved for that purpose by the Architect.

B. Related work described elsewhere: Specific naming of codes and standards occurs on the Drawings and in other Sections of these Specifications.

1.02 QUALITY ASSURANCE

A. Familiarity with pertinent codes and standards: In procuring all items used in this Work, it is the Contractor's responsibility to verify the detailed requirements of the specifically named codes and standards and to verify that the items procured for use in this Work meet or exceed the specified requirements.

B. Rejection of non-complying items: The Architect reserves the right to reject items incorporated into the Work which fail to meet the specified minimum requirements. The Architect further reserves the right, and without prejudice to other recourse the Architect may take, to accept non-complying items subject to an adjustment in the Contract Amount as approved by the Architect and the Owner.

C. Applicable standards listed in these Specifications include, but are not necessarily limited to, standards promulgated by the following agencies and organizations:

1) AASHTO = American Association of State Highway and Transportation Officials, 341 National Press Building, Washington, DC 20004

2) ACI = American Concrete Institute, Box 19150, Redford Station, Detroit, Michigan 48129

3) AISC = American Institute of Steel Construction, Inc., 1221 Avenue of the Americas, New York, New York 10020

4) ANSI = American National Standards Institute (successor to USASI and ASA), 1430 Broadway, New York, New York 10018

5) ASTM = American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103

6) AWS = American Welding Society, Inc., 2501 N. W. 7th Street, Miami, Florida 33125

7) AWWA = American Water Works Association, Inc., 6666 West Quincy Avenue, Denver, Colorado 80235

8) CRSI = Concrete Reinforcing Steel Institute, 228 North LaSalle Street, Chicago, Illinois 60610

9) CS = Commercial Standard of NBS, U. S. Department of Commerce, Government Printing Office, Washington D.C. 20402

10) FGMA = Flat Glass Marketing Association, 3310 Harrison, Topeka, Kansas 66611

11) I.B.C. = International Building Code

12) NAAMM = National Association of Architectural Metal Manufacturers, 1033 South Boulevard, Oak Park, Illinois 60302

13) NEC = National Electrical Code (see NFPA)

14) NEMA = National Electrical Manufacturers Association, 155 East 44th Street, New York, New York 10017

15) NFPA = National Fire Protection Association, 740 Atlantic Avenue, Boston, Massachusetts 02210

16) SDI = Steel Deck Institute, 135 Addison Avenue, Elmhurst, Illinois 60125

17) SSPC = Steel Structures Painting Council, 4400 5th Avenue, Pittsburgh, Pennsylvania 15213

18) TCA = Tile Council of America, Inc., P.O. Box 326, Princeton, New Jersey 08540

19) UL = Underwriters' Laboratories, Inc. 207 East Ohio Street, Chicago, Illinois 60611

20) Fed Specs and Fed Standards: Specifications Sales (3 FRI), Bldg. 197, Washington Navy Yard, General Services Administration, Washington, DC 20407

21) MIL-SPECS: Military Specifications, Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402

22) UBC = Uniform Building Code, International Conference of Building Officials, 5360 South Workman Mill Road, Whittier, California 90601

END OF SECTION

Section 01300

SUBMITTALS AND SUBSTITUTIONS

PART ONE - GENERAL

1.01 DESCRIPTION

A. Work included:

(1) Wherever possible throughout the Contract Documents, the minimum acceptable quality of workmanship and materials has been defined by manufacturer's name and catalog number, reference to recognized industry and government standards, or description of required attributes and performance.

(2) To ensure that the specified products are furnished and installed in accordance with design intent, procedures have been established for advance submittal of design data and for their review by the Architect.

(3) Make all submittals required by the Contract Documents, and revise and resubmit as necessary to establish compliance with the specified requirements.

B. Related work described elsewhere: Individual requirements for submittals are described in pertinent other Sections of these Specifications.

1.02 QUALITY ASSURANCE

A. Coordination of submittals: Prior to each submittal, carefully review and coordinate all aspects of each item being submitted and verify that each item and the submittal for it conforms in all respects with the requirements of the Contract Documents. By affixing the Contractor's signature to each submittal, certify that this coordination has been performed.

B. Certificates of compliance:

(1) Certify that all materials used in the Work comply with all specified provisions thereof. Certification shall not be construed as relieving the contractor from furnishing satisfactory materials if, after tests are performed on selected samples, the material is found to not meet specified requirements.

(2) Show on each certification the name and location of the Work, name and address of Contractor, quantity and date or dates of shipment or delivery to which the certificates applies, and name of the manufacturing or fabricating company. Certification shall be in the form of letter or company-standard forms containing all required data. Certificates shall be signed by an officer of the manufacturing or fabricating company.

(3) In addition to the above information, all laboratory test reports submitted with Certificates of Compliance shall show the date or dates of testing, the specified requirements for which testing was performed, and results of the test or tests.

1.03 SUBMITTALS

A. Submittal schedule: Within 15 days after award of Contract, and before any items are submitted for approval, submit to the Architect two copies of the schedule described in Article 2.01 of this Section.

B. Certificates of Compliance: Upon completion of the Work, and as a condition of its acceptance, submit to the Architect all Certificates of Compliance.

C. Procedures: Make submittals in strict accordance with the provision of this Section.

PART TWO - PRODUCTS

2.01 SUBMITTAL SCHEDULE

A. General: Compile a complete and comprehensive schedule of all submittals anticipated to be made during progress of the Work. Include a list of each type of item for which Contractor's drawings, Shop Drawings, Certificates of Compliance, material samples, guarantees, or other types of submittals are required. Upon approval by the Architect this schedule will become part of the Contract and the Contractor will be required to adhere to the schedule except when specifically otherwise permitted.

B. Coordination: Coordinate the schedule with all necessary subcontractors and material suppliers to ensure their understanding of the importance of adhering to the approved schedule and their ability to so adhere. Coordinate as required to ensure the grouping of submittals as described in Paragraph 3.02 below.

C. Revisions: Revise and update the schedule on a monthly basis as necessary to reflect conditions and sequences. Promptly submit revised schedule to the Architect for review and comment.

2.02 SHOP DRAWINGS AND COORDINATION DRAWINGS

A. Shop Drawings:

(1) Scale and measurements: Make all Shop Drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the Work.

(2) Type of prints required: Submit all Shop Drawings by hard copy to the office of the Architect. Digital PDF or CAD files may also be accepted. Shop Drawings should be reviewed by Contractor prior to submittal with a stamp indicating approval from Contractor's office.

(3) Reproduction of review Shop Drawings: Printing and distribution of review Shop Drawings for the Architect's use will be by the Architect. All review comments of the Architect will be shown on the Shop Drawings when it is returned to the Contractor. The Contractor shall make and distribute all copies required for his purposes.

2.03 MANUFACTURERS' LITERATURE

A. General: Where contents of submitted literature from manufacturers includes data not pertinent to the submittal, clearly indicate which portion of the contents is being submitted for review.

B. Number of copies required: Submit the number of copies which are required to be returned plus one copy which will be retained by the Architect. Information may also be transmitted digitally via email to the Architect in PDF or other electronic format.

2.04 SAMPLES

A. Accuracy of samples: Samples shall be of the precise article proposed to be furnished.

B. Number of samples required: Unless otherwise specified, submit all Samples in the quantity which is required to be returned plus one which will be retained by the Architect.

C. Reuse of samples: In situations specifically so approved by the Architect, the Architect's retained Sample may be used in the construction as one of the installed items.

2.05 COLORS AND PATTERNS

A. Unless the precise color and pattern is specifically described in the Contract Documents, and whenever a choice of color or pattern is available in a specified product, submit accurate color and pattern charts to the Architect for review and selection.

2.06 SUBSTITUTIONS

A. Approval required:

(1) The Contract is based upon the standards of quality established in the contract Documents.

(2) All products proposed for use, including those specified by required attributes and performance, shall require approval by the Architect before being incorporated into the Work. Any proposed substitutions shall be labeled "**alternate**" on the submittal.

(3) Do not substitute materials, equipment, or methods unless such substitution has been specifically approved for this Work by the Architect.

B. "Or equal":

(1) Where the phrase "or equal" or "or equal as approved by the Architect" occurs in the Contract Documents, do not assume that materials, equipment, or methods will be approved as equal or as equivalent unless the item has been specifically approved for this work by the Architect.

(2) The decision of the Architect shall be final.

2.07 PROJECT RECORD DOCUMENTS

A. Submit project record documents for Section 01720 of the Specifications.

PART THREE - EXECUTION

3.01 IDENTIFICATION OF SUBMITTALS

A. General: Consecutively number all submittals. Accompany each submittal with a letter of transmittal containing all pertinent information required for identification and checking of submittals.

B. Internal identification: On at least the first page of each copy of each submittal, and elsewhere as required for positive identification, clearly indicate the submittal number in which the item was included.

C. Resubmittals: When material is resubmitted for any reason, transmit under a new letter of transmittal and with a new submittal number.

D. Submittal log: Maintain an accurate submittal log for the duration of the Contract, showing current status of all submittals at all times. Make the submittal log available for the Architect's review upon request.

3.02 COORDINATION OF SUBMITTALS

A. General: Prior to submittal for approval, use all means necessary to fully coordinate all material including but not necessarily limited to:

(1) Determine and verify all interface conditions, catalog numbers, and similar data.

(2) Coordinate with other trades as required.

(3) Clearly indicate all deviations from requirements of the Contract Documents.

B. Grouping of submittals: Unless otherwise specified, make all submittals in groups containing all associated items to ensure that information is available for checking each item when it is received. Partial submittals may be rejected as not complying with the provisions of the Contract Documents and the Contractor shall be strictly liable for all delays so occasioned.

3.03 TIMING OF SUBMITTALS

A. General: Make all submittals far enough in advance of scheduled dates for installation to provide all time required for reviews, for securing necessary approvals, for possible revisions and re-submittals, and for placing orders and securing delivery.

B. Architect's review time: In scheduling allow at least **10 calendar days** for review by the Architect following his receipt of the submittal.

C. Delays: Delays caused by tardiness in receipt of submittals returned to the contractor will not be an acceptable basis for extension of the Contract completion date.

3.04 ARCHITECT'S REVIEW

A. General: Review by the Architect shall not be construed as a complete check, but only that the general method of construction and detailing is satisfactory. Review shall not relieve the Contractor from responsibility for errors which may exist.

B. Authority to proceed: The notation "Reviewed, no exceptions noted" or "Review, exceptions noted" authorize the Contractor to proceed with fabrication, purchase, or both, of the items so noted, subject to the revisions, if any, required by the Architect's review comments.

C. Revisions: Make all revisions required by the Architect. If the Contractor considers any required revision to be a change, he shall so notify the Architect as provided for under "Changes" in the General Conditions. Show each drawing revision by number, date, and subject in a revision block on the drawing. Make only those revisions directed or approved by the Architect.

D. Revisions after approval: When a submittal has been reviewed by the Architect, re-submittal for substitution of materials or equipment will not be considered unless accompanied by an acceptable explanation as to why the substitution is necessary.

END OF SECTION

Section 01485

TEMPORARY FACILITIES AND CONTROLS

PART ONE-GENERAL

1.01 DESCRIPTION

A. Work included: Temporary facilities and controls required for the work include but are not limited to:

1. Temporary utilities such as heat, water, electricity, and telephone.
2. Field offices and sheds
3. Sanitary facilities
4. Enclosures such as tarpaulins, barricades, and canopies
5. Fencing of the construction area
6. Haul roads

B. Related work described elsewhere:

1. Except that all equipment furnished by the subcontractors shall comply with all requirements of pertinent safety regulations, the ladders, planks, hoists, and similar items normally furnished by the individual trades in execution of their own portions of the work are not part of this Section.
2. Permanent installation and hook-up of the various utility lines are described in the pertinent other Section of these Specifications.

1.02 PRODUCT HANDLING

A. Use all means necessary to maintain temporary facilities and controls in proper and safe condition throughout progress of the work.

1.03 JOB CONDITIONS

A. Make all required conditions to existing utility systems with minimum disruption to services in the existing utility systems. When disruption of the existing service is required, do not proceed without the Architect's approval and when required, provide alternate temporary service.

PART TWO-PRODUCTS

2.01 UTILITIES

A. General: All temporary facilities shall be subject to the Architect's approval. The cost of all temporary facilities such as water and electric is to be paid by the Contractor.

B. Water:

1. Furnish and install all necessary temporary water lines and water supply and upon completion of the work, remove all such temporary facilities.
2. The Contractor will furnish all water needed for construction at no cost to the Owner.

C. Electricity:

1. Furnish and install necessary temporary wiring and upon completion of the work, remove all such temporary facilities.
2. The Contractor will furnish all electricity needed for construction at no cost to the Owner.

D. Telephone: Make all necessary arrangements and pay all costs of operation and installation of telephone service to the Contractor's office at the site. A job site telephone is not required.

E. Utilities for testing: Normal quantities required to make final tests of completely permanent systems will be furnished at no cost to the Contractor.

F. Sanitary Facilities: The Contractor shall provide facilities.

2.02 FIELD OFFICES AND SHEDS

A. Contractor's facilities:

1. Provide a field office building and sheds adequate in size and accommodation for all Contractor's offices, supply and storage.
2. The entire facility, including furniture, will remain the property of the Contractor and shall be removed from the site after completion of the work.

2.03 ENCLOSURES

A. Furnish, install and maintain for the duration of construction all required scaffolds, tarpaulins, barricades, canopies, warning signs, steps, bridges, platforms, and other temporary construction necessary for proper completion of the work in compliance with all safety and other regulations.

2.04 HAUL ROADS

A. Provide and maintain all required access to the work from paved areas and other routes, in strict accordance with all regulations governing the Contractor's use of the site.

PART THREE-EXECUTION

3.01 MAINTENANCE AND REMOVAL

A. Maintain all temporary facilities and controls as long as needed for the safe and proper completion of the work. Remove all such temporary facilities and controls as rapidly as progress of the work will permit, or as directed by the Architect.

3.02 CONTRACTOR'S OFFICE LOCATION

A. The location of the Contractor's office and storage area shall be on the site in any location chosen by the Contractor and approved by the Architect.

END OF SECTION

Section - 01500

ASBESTOS REMOVAL

PART ONE – GENERAL

1.01 DESCRIPTION

A. Work included: The abatement of exposure to asbestos from the building materials that have previously been determined to contain asbestos. The work specified herein will be the removal of asbestos containing materials by persons who are knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of asbestos-containing material, and the subsequent cleaning of the affected environment. These persons must comply with Federal and State regulations which mandate work practices, and be capable of performing the work of this contract.

B. The contractor will supply all labor, materials, equipment, services, insurance and incidentals which are necessary or required to perform the work in accordance with the applicable governmental regulations and these specifications.

C. Asbestos has been classified by the Federal Government as a carcinogenic (cancer producing) material. To comply with governmental requirements and minimize employee exposure, controls are necessary wherever there is a potential for exposure to airborne fibers.

D. All work and work areas will be in conformance with the requirements of EPA AHERA regulations (40 CFR Part 763), NESHAPS regulations (40 CFR 61 Subpart M) and OSHA regulations (**1926.1101 (g) (11)**).

1.02 SUBMITTALS

A. Comply with provisions of the General Requirements of these Specifications.

B. When and if rental equipment is to be used in removal areas or to transport waste materials, a copy of the written notification provided to the rental company informing them of the nature of use of the rented equipment will be submitted to the Owner.

C. Deviations from this asbestos removal specification will require the written approval of the Owner.

1.03 QUALITY ASSURANCE

A. Perform all asbestos removal in strict accordance with pertinent requirements of these Specifications and in the event no such requirements are determined in conformance with the Architect's written direction.

1.04 PROJECT CONDITIONS

A. Weather conditions: Do not remove asbestos in the snow, rain, fog, or mist, unless otherwise approved by the Architect.

PART TWO – PRODUCTS

2.01 MATERIALS

A. For replacement of Work removed, uses materials which comply with the pertinent Sections of these Specifications

PART THREE – EXECUTION

3.01 PREPARATION

A. All removal work will be done by trained asbestos workers who have appropriate physical exams and experience. Workers will use a minimum of half face negative pressure respirators with high efficiency filters and full body "Tyvek" coveralls.

B. A licensed Asbestos Project Monitor will be on-site every day until the asbestos removal of the day's work has been completed. The project monitor will document compliance with the plan.

C. Contractor will post signs in and around the Work Area to comply with OSHA standard 29 CFR 1910.1001 and 1926.1101. Post one (1) copy of each of the following documents at the work site:

Title 29, Code of Federal Regulations, Part 1910.1001
and 1926.1101 OSHA Asbestos Standards

Title 40, Code of Federal Regulations, Part 6l,
Subparts A and B, National Emission Standard for
Hazardous Air Pollutants

D. In addition, the Abatement Contractor must notify all other building occupants and contractors at the site that an asbestos abatement is about to be performed and indicate what control measures are being taken in accordance with OSHA 1926.1101.

3.02 ASBESTOS REMOVAL

A. The contractor will spray asbestos materials with amended water, using airless spray equipment capable of providing a "mist" application to reduce the release of fibers. The asbestos material will be sprayed with water mist containing a wetting agent to enhance penetration. The wetting agent will be a commercial product produced specifically as an

asbestos wetting agent. A fine spray of the amended water will be applied to reduce fiber release preceding the removal of the asbestos material.

B. In order to maintain asbestos concentrations at a minimum, the wet asbestos will be removed in manageable sections. Materials will not be allowed to dry out. Material drop will not exceed 8 feet. For heights up to 15 feet provide inclined chutes or scaffolding to intercept drop. For heights exceeding 15 feet provide enclosed dust-proof chutes.

C. The contractor will Place danger labels on containers in accordance with OSHA standard 29 CFR 1910.1001 (g) (2) if not already pre-printed on containers.

3.03 CLEAN-UP

A. The contractor must remove visible accumulations of asbestos material and debris.

B. If the Project Monitor finds visible accumulations of dust or bulk asbestos containing materials in the Work Area, the Contractor will repeat the cleaning until the work area is in compliance.

3.04 DISPOSAL OF ASBESTOS-CONTAINING MATERIALS

A. The asbestos materials will be packaged in impermeable dust tight containers (i.e. two heavy duty six (6) mil plastic bags or sealed fiber pack drums). The waste vehicle will be lined and sealed with 6 mil poly.:

All containers will be labeled in large legible letter:
DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

B. The labels will also have the DOT label and NESHAPS required generator identification and site label information.

C. The landfill accepting the wastes will be notified before shipping for scheduling to insure that adequate personnel and apparatus are available at the time of disposal; and the asbestos materials will be delivered in separate shipments. It will not be transported with any other materials. The contractor will not be paid until the signed waste manifest is received.

3.05 AIR MONITORING AND ANALYSIS

A. Air sampling will be conducted by the Contractor, as necessary, to assure that workers are using appropriate respiratory protection in accordance with OSHA Standard 1910.1001 and 1926.58.

END OF SECTION

Section 01710

CLEANING

PART ONE - GENERAL

1.01 DESCRIPTION

A. Work included: Throughout the construction period, maintain the building and site in a standard of cleanliness as described in this Section.

B. Related work described elsewhere: In addition to standards described in this Section, comply with all requirements for cleaning up as described in various other Sections of these Specifications.

1.02 QUALITY ASSURANCE

A. Inspection: Conduct daily inspection, and more often if necessary, to verify that requirements of cleanliness are being met.

B. Codes and standards: In addition to the standards described in this Section, comply with all pertinent requirements of government agencies having jurisdiction.

PART TWO - PRODUCTS

2.01 CLEANING MATERIALS AND EQUIPMENT

A. Provide all required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

2.02 COMPATIBILITY

A. Use only the cleaning materials and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material or as approved by the Architect.

PART THREE - EXECUTION

3.01 PROGRESS CLEANING

A. General:

(1) Retain all stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials.

(2) Do not allow the accumulation of scrap, debris, waste material, and other items not required for construction of this Work.

(3) At least twice each month, and more often if necessary, completely remove all scrap, debris, and waste material from the job site.

(4) Provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the ecology.

B. Site:

(1) Daily, and more often if necessary, inspect the site and pick up all scrap, debris, and waste material, including roofing scraps and nails, etc. Removal all such items to the place designated for their storage.

(2) Weekly, and more often if necessary, inspect all arrangements of materials stored on the site; restack, tidy, or otherwise service all arrangements to meet the requirements of subparagraph A (1) above.

(3) Maintain the site in a neat and orderly condition at all times.

C. Structures:

(1) Weekly, and more often if necessary, inspect the structures and pick up all scrap, debris, and waste material. Remove all such items to the place designated for their storage.

(2) Weekly, and more often if necessary, sweep all interior spaces clean. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by use of reasonable effort and handheld broom.

(3) As required preparatory to installation of succeeding materials, clean the structures or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using all equipment and materials required to achieve the required cleanliness.

(4) Following the installation of finish floor materials, clean the finish floor daily (and more often if necessary) at all times while work is being performed in the space of which finish materials have been installed. "Clean" for the purpose of this subparagraph, shall be interpreted as meaning free from all foreign material which, in the opinion of the Architect, may be injurious to the finish floor material.

3.02 FINAL CLEANING

A. Definition: Except as otherwise specifically provided, "clean" (for the purpose of this Article) shall be interpreted as meaning the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials.

B. General: Prior to completion of the Work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste. Conduct final progress cleaning as described in Article 3.01 above.

C. Site: Unless otherwise specifically directed by the Architect, broom clean all paved areas on the site and all public paved areas directly adjacent to the site. Completely remove all resultant debris.

D. Structures:

(1) Exterior: Visually inspect all exterior surfaces and remove all traces of soil, waste material, smudges, and other foreign matter. Remove all traces of splashed materials from adjacent surfaces. If necessary to achieve a uniform degree of exterior cleanliness, hose down the exterior of the structure. In the event of stubborn stains not removable with water, the Architect may require light sandblasting or other cleaning at no additional cost to the Owner.

(2) Interior: Visually inspect all interior surfaces and removal all traces of soil, waste material, smudges, and other foreign matter. Remove all traces of splashed materials from adjacent surfaces. Remove all paint droppings, spots, stains, and dirt from finished surfaces. Use only the specified cleaning materials and equipment.

(3) Glass: Clean all glass inside and outside.

(4) Polished surfaces: To all surfaces requiring the routine application of buffed polish, apply the polish recommended by the manufacturer of the material being polished.

E. Timing: Schedule final cleaning as approved by the Architect to enable the Owner to accept a completely clean project.

3.03 CLEANING DURING OWNER'S OCCUPANCY

A. Should the Owner occupy the Work or any portion thereof prior to its completion by the Contractor and acceptance by the Owner, responsibilities for interim and final cleaning of the occupied spaces shall be as determined by the Architect in accordance with the General Conditions of the Contract.

END OF SECTION

Section 01720

PROJECT RECORD DOCUMENTS

PART ONE - GENERAL

1.01 DESCRIPTION

A. Work included:

(1) Throughout the progress of the work of this contract, maintain an accurate record of all changes in the Contract Documents, as described in Article 3.01 below.

(2) Upon completion of the Work of this Contract, transfer the recorded changes to a set of Record Documents, as described in Article 3.02 below.

B. Related work described elsewhere: Submittals - Section 01300

1.02 QUALITY ASSURANCE

A. General: Delegate the responsibility for maintenance of Record Documents to one person on the Contractor's staff as approved in advance by the Architect.

B. Accuracy of records: Thoroughly coordinate all changes within the Record Documents, making adequate and proper entries on each page of Specifications and each sheet of Drawings and other Documents where such entry is required to properly show the change. Accuracy of records shall be such that future searches for items shown in the Contract Documents may reasonably rely on information obtained from the approved Record Documents.

C. Timing of entries: Make all entries within 24 hours after receipt of information.

1.03 SUBMITTALS

A. General: The Architect's approval of the current status of Record Documents will be a prerequisite to the Architect's approval of requests for progress payment and request for final payment under the Contract.

B. Progress submittals: Prior to submitting each request for progress payment, secure the Architect's approval of the Record Documents as currently maintained.

C. Final submittal: Prior to submitting request for final payment, submit the final Record Documents to the Architect and secure his approval.

1.04 PRODUCT HANDLING

A. Use all means necessary to maintain the job set of Record Documents completely protected from deterioration and from loss and damage until completion of the Work and transfer of the recorded data to the final Record Documents. In the event of loss of recorded data, use all means necessary to secure the data to the Architect's approval; such means shall include, if necessary in the opinion of the Architect, removal and replacement of concealing materials and, in such case, all replacements shall be to the standards originally specified in the Contract Documents.

PART TWO - PRODUCTS

2.01 RECORD DOCUMENTS

A. Job set: Near the completion of the Project, the Contractor shall provide the Architect a marked set of Drawings with all changes noted to be used in the creation of the Final Record Documents.

PART THREE - EXECUTION

3.01 MAINTENANCE OF JOB SET

A. Identification: Immediately upon receipt of the job set described in Paragraph 2.01 A, above, identify each of the Documents with the title, "RECORD DOCUMENTS - JOB SET".

B. Preservation:

(1) Considering the Contract completion time, the probable number of occasions upon which the job set must be taken out for new entries and for examination, and the conditions under which these activities will be performed, devise a suitable method for protecting the job set to the approval of the Architect.

(2) Do not use the job set for any purpose except entry of new data and for review by the Architect, until start of transfer of data to final Record Documents.

(3) Maintain the job set at the site of work as that site is designated by the Architect.

C. Making entries on drawings: Using an erasable colored pencil (not ink or indelible pencil), clearly describe the change by note and by graphic line, as required. Date all entries. Call attention to the entry by a "cloud" around the area or areas affected. In the event of overlapping changes, different colors may be used for each of the changes.

D. Making entries on other documents:

(1) Where changes are caused by directives issued by the Architect, clearly indicate the change by note in ink, colored pencil, or rubber stamp.

(2) Where changes are caused by Contractor-originated proposals by the Architect, including inadvertent errors by the Contractor which have been accepted by the Architect, clearly indicate the change by note in erasable colored pencil.

(3) Make entries in the pertinent Documents as approved by the Architect.

E. Conversion of schematic layouts:

(1) In most cases on the Drawings, arrangement of conduits and circuits, piping, ducts, and other similar items, is shown schematically and is not intended to portray precise physical layout. Final physical arrangement is as determined by the Contractor, subject to the Architect's approval. However, design of future modifications of the facility may require accurate information as to the final physical arrangements of items which are shown only schematically on the Drawings.

(2) Show on the job set of Record Drawings, by dimension accurate to within 25 mm (1") the centerline of each run of items such as are described in Paragraph E (1) above. Clearly identify the item by accurate note such as "cast iron drain" "galv. water", etc. Show, by symbol or note, the vertical location of the item ("under slab", "in ceiling plenum", "exposed", etc.). Make all identification sufficiently descriptive that it may be related reliably to the Specifications.

(3) The Architect may waive the requirements for conversion of schematic data where, in the Architect's judgment, such conversion serves no beneficial purpose. However, do not rely upon waivers being issued except as specifically issued in writing by the Architect.

(4) Time of entries: Be alert to changes in the Work from how it is shown in the Contract Documents. Promptly, and in no case later than 24 hours after the change has occurred and been made known to the Contractor, make the entry or entries required.

(5) Accuracy of entries: Use all means necessary, including the proper tools for measurement, to determine actual location of the installed items.

3.02 FINAL RECORD DOCUMENTS

A. General: The purpose of the Final Record Documents is to provide factual information regarding all aspects of the Work, both concealed and visible, to enable future modification of

design to proceed without lengthy and expensive site measurement, investigation, and examination.

B. Review and approval: Submit the completed total set of Record Documents to the Architect. Participate in review meeting or meetings as required by the Architect, make all required changes in the Record Documents, and promptly deliver the Final Record Documents to the Architect.

3.03 CHANGES SUBSEQUENT TO ACCEPTANCE

A. The Contractor shall have no responsibility for recording changes in the Work subsequent to acceptance of the Work by the Owner, except for changes resulting from replacements, repairs, and alterations made by the Contractor as part of his guarantee.

END OF SECTION

Section 03100

CONCRETE FORMWORK

PART ONE - GENERAL

1.01 DESCRIPTION

A. The work to be performed under this section consists of furnishing all materials, labor and equipment needed for the construction of the forms for concrete work including: sidewalks, retaining walls, curbs, floors, paving, footings, abutments, and all other cast-in-place concrete work shown on drawings and/or specified. The work is to be completed in accordance with these specifications, the drawings and reference standards.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Concrete work - Section 03110

B. Steel Reinforcement for concrete - Section 03210

1.03 WORK INSTALLED

A. Built-in items: Build in all items in the concrete for the attachment of other materials, including, but not necessarily limited to clip angles, bolts, inserts, sleeves, dovetail slots, water stops, mechanical and electrical items and other as required. Coordinate installations with respective contractors.

1.04 QUALITY ASSURANCE

A. General design criteria: Conform to ACI 318-63, Design.

B. Requirements of regulatory agencies: Erect forms to meet requirements of the local Building Code.

C. Allowable tolerances:

(1) Concrete, paving, aprons, entrance slabs, walks and other horizontal surfaces shall be finished within a tolerance of 1/4" in linear ft. in any direction except where drains occur in which case the slabs will be sloped uniformly to drains. Where drains are indicated the surfaces shall be sloped uniformly. Deflection of forms between supports shall be within 1/4" 10 feet tolerance.

(2) Walls, retaining walls, ramped surfaces, steps and other concrete surfaces shall conform to the details shown on drawings and is plumb, level or sloped as indicated on drawings.

(3) Any concrete not conforming to the drawings and the above specifications shall be corrected to the satisfaction of the Architect and at no additional cost to the Owner.

1.05 SUBMITTALS

A. Manufacturer's literature: Description and recommended installation instructions, including ties, spreaders, corner forms, and form release agents.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

A. On delivery to job site, store form materials above ground on framework or blocking with adequate cover and ventilation to maintain usability.

B. Handle materials in a manner not to damage them in any way which would affect usability.

PART TWO - PRODUCTS

2.01 MATERIALS

A Forms may be of wood or metal and be constructed to produce shapes, lines and dimensions as shown on the drawings and in these specifications with sufficient strength and bracing to support the loads and pressures imposed on them and sufficiently tight to prevent leakage of concrete. Plywood is to be of form grade, studs and wales to be selected for straightness.

B. Forms for footings to be No. 2 common lumber or better, or plywood. Form for footings may be omitted when conditions are approved by the Architect.

C. Form oil shall be a light clear paraffin base oil that will not discolor or otherwise injure the surface of the concrete and shall be approved for form use, or as approved by the Architect.

PART THREE - EXECUTION

3.01 CONSTRUCTION AND PLACEMENT OF FORMS

A. The contractor shall check form work during installation to assure proper lines, shape and elevations, also plumb, level, sloped as required.

B. Contractor is required to notify Architect 24 hours in advance when he is planning to pour, so the Architect has a chance to inspect the forms prior to placing concrete.

C. The contractor shall maintain a constant check of form work during placement of concrete for wall alignment, line, shape, and leakage. If during placement of concrete any weakness develops and the form work shows any undue settlement, deflection or other distortion from the correct lines and elevations, the work shall be stopped until corrections have been made.

D. Screeds for slabs shall be checked immediately prior to and during placing of concrete.

E. Form oil shall be applied, before the placement of reinforcing steel, and at the manufacturer's recommended rate of application with any excess wiped off.

3.02 REMOVAL OF FORMS

A. Form work shall be removed in such a manner as to insure the complete safety of the structure. Forms for walls and other members not supporting the weight of the concrete may be removed after 24 hours provided the concrete is hardened sufficiently to resist damage from removal operations.

B. Any cracks or other damage resulting from the removal of forms shall be corrected as directed by the Architect.

Section 03110

CONCRETE WORK

PART ONE - GENERAL

1.01 DESCRIPTION

A. Extent of work: The work to be performed under this section consists of furnishing all labor, materials and equipment to construct all concrete sidewalks, walls, footings and foundations, retaining walls, entrance slabs and sidewalks or other cast-in-place concrete as shown on the drawings or described in these specifications.

B. The work under this section shall be carefully coordinated with filling, grading and compaction of subgrades specified elsewhere to insure that the subgrades are properly prepared to receive concrete. Also coordinated with the electrical and mechanical trades.

C. The Contractor is to notify the Architect at least one day (24 hours) before making any concrete pours so that the Architect can inspect the subgrades and form work before placement of concrete.

D. Related work specified elsewhere:

(1) Concrete form work - Section 03100.

(2) Steel reinforcement for concrete - Section 03210.

1.02 QUALITY ASSURANCE

A. Concrete work: Concrete paving, aprons, entrance slabs, walks and other horizontal surfaces shall be finished within a tolerance of 1/4" when measured with a 10 foot straight edge in any direction except when sloped uniformly to a drain.

B. Walls, ramped surfaces, steps and other structures shall conform to the details shown on drawings and be plumb, level, or sloped within the tolerances given above.

C. Any concrete installed that does not conform to the drawings or to the specified tolerances will be corrected to the satisfaction of the Architect.

D. Cold weather protection: Adequate equipment shall be provided for heating the concrete during freezing or near freezing weather. No frozen material or ice will be used. All forms, reinforcing and earth that comes in contact with the concrete shall be free of frost when air temperature is below 40 degrees F. Concrete mix shall be between 50 degrees F and 70 degrees F and adequate means provided to maintain a temperature of 70 degrees F for 3 days or 50

degrees F for five days or as much additional time as needed to insure proper protection and curing of the concrete. The covering or shelter is to remain in place 24 hours after heating is discontinued. Use of Calcium Chloride, salt or other chemicals will not be allowed.

E. Hot weather requirements:

(1) Concrete placed in hot weather shall have a placing temperature which will not cause difficulty in loss of slump, flash set, or cold joints. During hot weather the Contractor shall take adequate precautions to reduce the detrimental effects of these conditions.

(2) Forms, subgrades and reinforcement shall be sprinkled with cool water just prior to placement of the concrete, and the area around the work shall be wetted down to cool the surrounding air and to increase its humidity.

(3) Concrete shall be placed and finished as speedily as possible and ample personnel shall be available to accomplish this. All tools, equipment and materials needed for the screeding, working and curing of the concrete shall be on site prior to the need for them.

1.03 STANDARD SPECIFICATIONS

A. The ACI Publication "Standards and Code Requirements for Concrete and Reinforced Concrete", latest edition shall govern all concrete work except as otherwise specified herein.

PART TWO - PRODUCTS

2.01 CONCRETE MATERIALS

A. All materials, unless otherwise indicated, noted or specified, shall conform to the latest edition of the standard specification of the American Society for Testing Materials covering the material being used.

B. All exterior concrete shall be air entrained 6% to 7%. Air entrainment shall be provided by the use of air entrainment Portland Cement Type 1-A conforming to ASTM Designation 175, or may be provided by the use of an air entrainment admixture conforming to the requirements of ASTM Specification for Air Entrainment Admixtures for Concrete, Designation C260.

C. Aggregate for all concrete shall be regular stone conforming to ASTM C33.

D. Sand shall be thoroughly washed and shall be free from loam, soft stone, or other ingredients which would affect the strength of the concrete. Sand shall be well graded from course to fine with course particles predominating, but containing no grains which will not pass through a 1/4" mesh. ASTM C33.

E. The methods used in piling and handling aggregates shall be such that the fire and coarse aggregates shall be kept separate prior to their placing into the mixer. They shall be kept clean and free from foreign substances. No aggregates shall be used in work which has not been stored on the project site, or ready mix plant for at least twenty four hours. Aggregates shall be stored so as to insure the preservation of their quality and fitness for the work. When considered necessary by the Architect, they shall be placed on wooden platforms or other hard, clean surfaces and not on the ground, and shall be located so as to facilitate proper inspection.

F. Vapor barrier under slabs as shown on the drawings.

G. Expansion joint material for slabs on grade shall be bituminous type, premolded expansion joint conforming to ASTM Specification D-994, and shall be of the thickness indicated on drawings.

H. Water: Clean fresh water, free of oil, acid, organic, or other deleterious substances.

I. Curing compound exterior concrete shall be white pigmented type and conform to the requirements of AASHO Standard Specifications for Liquid Membrane Forming Compounds for Curing Concrete, (Designation M148) or 6 mils. plastic sheeting. During cold weather, insulated blanket coverings meeting the requirements of the State Highway Specifications shall be used for curing all concrete.

2.02 DESIGN OF MIX

A. The concrete mix shall be proportioned and designed to develope a minimum ultimate compressive strength of 3500 psi for all footings and 4000 psi elsewhere, at 28 days and shall be such as to produce concrete that will work readily into the corners and angles of the form and around the reinforcement without excessive spreading and without permitting the materials to segregate or free water to collect on the surface.

B. A minimum of 5 1/2 sacks of cement per yard shall be used for 3500 psi concrete and 6 sacks per yard for the 4000 psi concrete.

C. No more than 6 1/2 gallons of water per sack (94# cement) shall be used per batch. The water content of the concrete shall be the least that will produce uniformly dense concrete free from aggregate pockets or honeycombs. Corrections shall be made for the amount of moisture contained in the aggregates and allowances shall be made for absorption of moisture by the aggregates during the period of mixing and handling.

D. The water-cement ratio, including free water in the aggregate, shall not exceed that approved by the Architect. Variations and correcting the proportions and amount of aggregates used shall be approved by the Architect.

E. Cement mortar for topping and grouting shall be mixed in the proportions of one part cement to not more than two parts, clean, fine sand, unless otherwise noted.

F. The proportions herein specified for mixing of concrete shall not be varied except as may be found necessary to meet the test requirements herein specified and then only on the instructions of the Architect.

2.03 AFFIDAVITS ON MATERIALS

A. If requested by the Owner, the Contractor shall obtain from the various materials suppliers notarized affidavits that the materials meet the ASTM and AASHO Specifications and other standards referred to above, as applicable to each type of material.

PART THREE - EXECUTION

A. Plant mix concrete: If plant mix or mixed-in-transit concrete is used, each shipment shall be accomplished by duplicate certificates, showing analysis of the mix, it shall be produced in.

B. Job mix concrete:

(1) If concrete is prepared at the site, it shall be mixed in a standard type of mechanical batch mixer that mixes one complete batch at a time, which is entirely discharged before another is introduced.

(2) The concrete shall be mixed to the desired consistency and until the mass is uniform in color and homogeneous.

(3) The mixing shall continue for at least one (1) minute after all ingredients are in the mixer.

(4) During the period of mixing, the drum shall operate at the speed for which it was designed, except that the peripheral speed of the drum shall not be less than 175 nor more than 225 ft. per minute.

(5) If this procedure does not effect a thorough mixing of the concrete, an additional number of turns at the same rate of speed shall be given until a thorough mixing of each mix of concrete is secured. The entire contents of the mixer shall be removed from the drum before material for the succeeding batch is placed therein and the mixer shall preferably be equipped with mechanical means for preventing the addition of aggregate or water after mixing has commenced.

(6) The mixer shall be equipped with adequate water storage and a calibrated measuring device for accurately measuring the amount of water used in each batch. The mixer shall be equipped with a batch meter for accurately recording the time of mixing of each batch and also an attachment for automatically locking the discharge chute so as to prevent the emptying of the mixer until the materials have been mixed with the specified minimum time. No mixer shall be operated above its rate capacity, or be used which has a rated

capacity of less than one (1) sack batch, and batches requiring a fractional sack of cement shall not be mixed unless the cement is batched by weight.

(7) The first batch of concrete materials placed in the mixer shall contain an additional quantity of cement, sand and water, sufficient to coat the inside surface of the drum without diminishing the mortar cement of the mix. Upon the cessation of mixing for any considerable length of time, the mixer shall be thoroughly cleaned.

(8) Care shall be taken to secure the exact proportions at all times. The mixed concrete shall be, as stated hereinbefore, of plastic consistency that will flow into the form of trenches and about reinforcement where used for any reinforced work but shall not be so wet as to cause separation of materials.

(9) Concrete shall be mixed only as required for immediate use and shall be conveyed directly from the mixer and deposited in place. Concrete in which the initial set has occurred shall not be used.

(10) A competent foreman shall be in attendance at the mixer to give account of each batch, which leaves the mixer.

3.02 PLACEMENT OF CONCRETE

A. Proper provisions shall be made before the concrete is placed to embed all inserts, including inserts to be provided by others.

B. It will be each subcontractor's responsibility to provide the Contractor with information regarding opening or chases he will require in the concrete work and to provide all his items which will be cast into, embedded in or will otherwise be monolithic with the concrete pour. The contractor, prior to placing any concrete, shall give written notice to the Architect and all subcontractors of his intention to place concrete and his schedule of placing.

C. All slabs shall be fitted to the top surface in one continuous operation. If possible, the placing of concrete shall be carried on as a continuous operation until the completion of the section. If for any reason, placing of concrete has to be stopped before the completion of the part being poured, greatest care must be exercised to stop at a point where the joint will not weaken the construction. Such joint shall be at the point of minimum shear stress in the concrete.

D. The maximum pour for slabs shall be as noted in General Notes of the drawings.

E. Concrete shall be placed so as to avoid segregation of the materials and the displacement of the reinforcement. The use of long troughs and chutes for conveying concrete from the mixer to the forms shall be permitted only on authorization of the Architect.

F. All chutes, troughs, etc. shall be kept clean and free from coatings of hardened concrete by flushing with water after each run; water used for flushing shall be discharged clear of the concrete already in place.

G. Concrete shall not be permitted to drop freely more than five (5) feet and it will not be permissible to allow concrete to run or be taken to fill each part of the form by depositing the concrete as near final position as possible. The coarse aggregates shall be worked back from the forms and the concrete forced around the reinforcement without displacing bars. Concrete shall not be permitted to flow under runways or other obstructions that make spading impossible.

H. Concrete shall be spaded and puddled with proper tools into compact homogeneous mass.

I. The concrete shall be placed as rapidly, continuously and in as large areas as possible, or until the unit of operation as previously approved has been compacted. In any given operation the batches shall be placed so that each shall be installed and compacted before the preceding one has taken its initial set, so that perfect joining will be effected without marked indication of the finished faces of concrete.

J. The Contractor shall keep a capable mechanic on the job during the placement of concrete to keep reinforcement in proper alignment and spacing.

K. Insert asphalt strips of sufficient width against all masonry where cement work is installed, to protect masonry while concrete is being placed.

3.03 MECHANICAL VIBRATION

A. The concrete shall be compacted by means of mechanical vibrator operated within the mass of concrete.

B. Vibration shall be supplemented by hand spading. The concrete shall be spaded by hand in all corners and angles of the forms and along all form faces as elsewhere herein specified. The concrete shall be vibrated with a frequency of not less than 7000 impulses per minute, the vibration shall be of sufficient intensity and duration to cause flow or settlement into place and complete compaction. Care must be exercised that concrete is not over-vibrated, particularly if it is of relatively wet consistency exceeding 4" in slump and that vibrators are not used to transport concrete in the forms. Vibrators should be inserted and withdrawn at many points from 18" to 30" apart for short periods, usually from 5 to 15 seconds is sufficient, in preference to insertion for longer periods at wider intervals. Systematic spacing of insertions of the vibrator should be established to insure that no concrete is missed. Vibration shall be applied to the mass at the point of deposit and in the body of freshly deposited concrete.

C. The mechanical vibrator shall be of a type and design approved by the Architect. It should be adequately powered and capable of transmitting vibrations of the required frequency to the concrete.

D. The vibrator shall be applied to the concrete immediately after deposit and so manipulated that the concrete is reduced to a uniform plastic mass thoroughly compacted. It should be thoroughly compacted around the reinforcement and worked into the corners and angles of the forms. The vibrators shall not be attached to the forms or the reinforcement nor shall it be placed on reinforcing steel.

E. Concrete shall be placed in layers of uniform thickness and the apparatus so operated that the vibrating element does not penetrate through the layers of fresh concrete and disturb partially hardened concrete in lower layers. Vibrators shall not be pushed into the mass of concrete too rapidly and should be withdrawn slowly.

3.04 REMOVAL OF DEFECTIVE CONCRETE

A. After forms have been removed any concrete not formed as indicated on drawings, or out of plumb, level, or alignment, or otherwise out of required tolerances shall be removed and replaced at no additional expense to the Owner.

3.05 BONDING NEW CONCRETE TO HARDENED CONCRETE

A. Before depositing new concrete against concrete which has hardened, the surface of the hardened concrete shall be picked and wire brushed clean to remove foreign matter, loose particles, and laitance. The hardened concrete shall then be dampened with water and thoroughly covered with a coat of neat cement mortar of similar proportions of the mortar in the concrete. The fresh concrete shall be placed before the mortar has taken its initial set.

3.06 RETEMPERING

A. Concrete shall be mixed and delivered in such quantities as are required for immediate use, and shall be placed while fresh, before losses of slump occurs. When concrete arrives at the site with slump below that suitable for placing, water may be added only if neither the maximum slump is exceeded or the water cement ratio is exceeded. Any water added shall be incorporated by additional mixing equal to at least one-half of the total mixing required. Driver is to note on delivery tickets the amount of water added and additional mixing.

3.07 CONTROL JOINTS

A. Provide control joints at the locations indicated on the drawings. The joints shall be formed as detailed and shall be at least one-fourth of slab depth. Contraction joints shall be formed to straight lines. Edges of slabs and those where edging is shown on the drawings shall be

rounded with a radius not larger than 1/8". Construction joints shall conform to the details shown on the drawings.

3.08 EXPANSION JOINTS

A. Expansion joints shall be installed at the locations shown on the drawings. Expansion joints in the walks shall be installed at approximately 25 linear foot intervals. The joint material shall be placed the full depth of slabs and flush with the top surface. All expansion joints and edges of concrete shall be jointed and edged in accordance with customary practice. Reinforcing shall not extend through expansion joints.

3.09 VAPOR BARRIER

A. The vapor barrier previously specified and shown on the drawings shall consist of a 6 mil. thickness of "polyethylene sheeting" lapped not less than 6" and sealed at edges with an adhesive as recommended by the manufacturer of the vapor barrier.

3.10 FINISHING WALLS

A. All interior exposed concrete shall have all fins and projections removed and the rough surface produced by this operation shall be rubbed smooth. All depressions shall be filled with mortar of the same proportions as the mortar of the same proportions as the mortar used in the body of the concrete and this mortar shall be smoothed with a wooden float. This work shall be done closely following removal of the forms. All exposed surfaces in finished and unfinished rooms shall be left clean and smooth and shall present a neat and finished appearance.

B. Concrete which has a total area of honeycombed surfaces in excess of one percent of the total surface area of the forms used for any member of the pour in which the honeycombing is present will not be accepted and must be entirely removed and new concrete substituted by the contractor at his own expense. Work of other Contractors adjacent to or incorporated in the concrete to be removed shall be removed and replace protected, and repaired to the satisfaction of the Architect at the general contractor's expense.

C. Honeycomb surfaces, for the purpose of enforcing this specification, are hereby defined as the concrete surfaces, next to forms, in which there are voids between the particles of course aggregate.

D. The small amount of honeycomb permitted to remain shall be filled with mortar of the same consistency as the mortar used in the body of the concrete and smoothed with a wooden float, closely following removal of forms. The Architect shall stop the removal of forms unless the requirements of this section are carried out. Tops of walls shall be floated smooth. The Contractor shall also perform any other operations in addition to those specified herein that may be required to produce the results specified.

E. All exterior exposed walls shall be given the following treatment: Prepare a grout of about the proportions of one part cement to one part fine sand. Grout shall be of the consistency that will permit its application to vertical surfaces with a stiff bristle brush. The grout shall be brushed and floated on the previously dampened concrete. Allow grout to remain on wall until the cement has partially set, then remove excess grout with a steel trowel. After drying for an hour or longer, depending on weather conditions, rub the wall vigorously with burlap to completely clean the grout from the surface leaving pits filled, but there shall not be a visible film of grout on the surface. To lighten up the surface, replace part of the grey cement with approximately 30% of white cement. Rubbing up a lather with a carborundum stone shall not be permitted.

3.11 FINISHING FLOORS

A. Immediately following the pour, the concrete shall be screeded off to bring the top surface to proper contour and elevations. Floors, unless otherwise noted, shall be held perfectly level. Where drains occur or slope is indicated, they shall be pitched toward drain or in direction indicated on drawings.

B. Soon after screeding and while the concrete is still plastic, the surface shall be floated with wood or metal floats and brought to a high grade.

C. Floor shall be steel troweled to a smooth and perfect surface after the concrete has hardened enough so that water and fine material are not worked to the surface.

D. Do not trowel while concrete is too soft or plastic, as this will result in a less wear-resistant surface.

E. No walking or wheeling shall be permitted on the concrete floors until concrete is thoroughly set.

F. Floors shall be protected until final completion of the job. Any rough places which develop shall be machine ground before any covering is applied.

G. Excess water shall be screeded off and the surfaces left clean and level.

H. In placing depressed slabs, forms shall be provided for forming the edges of depressed sections. These shall be accurately placed with breaks located as directed.

3.12 FINISHING EXTERIOR WORK

A. Steps and walks shall have a broom finish which shall be done after the concrete is hard enough so that it will retain the scoring.

B. Concrete drives, concrete platforms, etc. shall be finished in the following manner.

(1) As soon as water has risen to the surface, it shall be floated and then troweled to a smooth and perfect surface. As soon as concrete has set sufficiently to be firm, remove the forms from the riser and steps, and remove all fins, ridges, etc. from the surface.

3.13 PROTECTION

A. All concrete shall be properly protected from damage during construction. No vehicles or equipment shall be permitted on paved areas during the curing period. The Contractor shall keep on the job an adequate supply of waterproof paper of polyethylene sheeting, or the types previously specified, for protection of concrete surfaces from damage by rains (or snow) that may occur during finishing operations.

3.14 OPENING TO TRAFFIC

A. Upon completion of the specified 7 day curing period, the Contractor shall removal any coverings and other debris. No vehicles or construction equipment shall be permitted on the paved surfaces for at least 14 days after the concrete has been placed. The areas may be opened to light vehicular traffic and the Contractor shall be solely responsible for any cracks or other damage resulting from vehicles or construction equipment.

3.15 TESTING

A. The contractor shall assist the owner's testing laboratory in taking concrete test. The cost of the initial tests will be paid by the owner.

END OF SECTION

Section 03210

STEEL REINFORCEMENT FOR CONCRETE

PART ONE - GENERAL

1.01 DESCRIPTION

A. The work to be performed under this section consists of furnishing all labor, materials, and equipment required for the steel reinforcing of all concrete construction as shown on the drawings.

B. Related work described elsewhere includes:

(1)	Concrete form work	Section 03100
(2)	Concrete work	Section 03110

1.02 PRODUCT DELIVERY AND STORAGE

A. Deliver steel reinforcing to site in bundles with tags indicating bar size and length.

B. All reinforcing when stored on site is to be on skids or platforms above ground surface and protected from mechanical damage and corrosion.

C. Deliver and store welding electrodes in accordance with AWS D 12.1.

PART TWO - PRODUCTS

2.01 MATERIAL, GENERAL

A. Reinforcing steel for concrete work shall conform to ASTM A15 specifications for Billet Steel Bars for concrete reinforcement, Intermediate Grade, with 40,000 psi minimum yield point. Sizes as shown on drawings.

B. Wire mesh for concrete reinforcement shall be of types and sizes shown on the drawings, and shall conform to the requirements of ASTM A-185 Standard Specifications for Welded Steel Wire Fabric for Concrete Reinforcement.

C. Metal chairs, bolster, spacers, form ties, and other devices necessary for placing, spacing, supporting, and securing reinforcement shall conform to the requirements of the Concrete Reinforcing Steel Institute, "Manual of Standard Practice for Reinforcing Concrete

Construction". Form ties shall be of a type that when forms are removed no metal remains within 1 inch of the surface.

PART THREE - EXECUTION

3.01 GENERAL

A. Installation of steel bar reinforcing: Install steel bar of the sizes shown on the drawings in the locations shown on the drawings.

B. When lapps occur lap and weld for a sufficient length to develop tensile strength of bar, or lap (minimum 30 bar diameter(s) and tie with wire.

C. Install all reinforcing, bar and fabric, so that no steel reinforcing comes within 1" of any concrete surface.

D. Install welded wire fabric using chairs, bolsters, spacers, or form ties to the location shown on the drawings.

END OF SECTION

Section 04100

MORTAR

PART ONE - GENERAL

1.01 DESCRIPTION

A. Mortar shall be masonry cement mortar (patent mortar) for all masonry work. Mortar shall consist of Portland cement patent mortar clean sand aggregate, and water.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Masonry Accessories - Section 04150

B. Unit Masonry - Section 04200

PART TWO - PRODUCTS

2.01 MATERIALS

A. Mortar: Mortar for all masonry work shall conform to the requirements of ASTM Specifications C 270. All mortar shall have a minimum compressive strength of 900 pounds per square inch at 28 days after placement. Masonry cement mortar (patent mortar) such as "Brixment" or "LoneStar" may be used if such mortar meets the requirements specified herein.

B. Aggregate: Aggregate for mortar shall conform to ASTM specifications C 144. Aggregate shall be clean, sharp sand, free of injurious amounts of organic material.

C. Water: Water shall be clean, potable and free from deleterious amounts of organic substances or oils, acids, salts, or other contaminants.

D. Admixtures: Calcium chloride or other admixtures shall not be used unless approved by the Architect.

2.02 MORTAR MIXES

A. All mortar mixes shall be in the quantity as recommended by the manufacturer.

PART THREE - EXECUTION

3.01 BATCHING, TEMPERING, MIXING

A. Mortar shall be carefully proportioned by the Contractor to obtain the specified strength. The method of measuring materials for mortar shall be such that the specified proportions can be consistently controlled. Sand shall be measured in a container having a known volume.

B. All mortars shall be machine mixed, except as otherwise noted for small batches, for a minimum period of five minutes with the proper amount of water for the correct workability. The mixer shall be cleaned after each batch to prevent contamination by set mortar. Mortar shall be used as soon as practicable after mixing. Excessive retempering of mortar will be cause for rejection. Retempering may be done on the board but no water shall be added if there is significant stiffening

3.02 STORAGE AND PROTECTION

A. Mortar materials and sand shall be stored in such manner to prevent deterioration and intrusion of deleterious materials. Mortar materials are to be kept dry and free of water.

END OF SECTION

Section 04150

MASONRY ACCESSORIES

PART ONE - GENERAL

1.01 DESCRIPTION

A. The work covered by this Section shall include the furnishing of all labor, materials, plant, equipment and appliances required to complete masonry accessories as shown on the Drawings and as specified, complete, in strict accordance with this Section of the Specifications, the Drawings, and referenced standards.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Mortar - Section 04100

B. Unit Masonry System - Section 04200

C. Sealants and caulking - Section 07951

PART TWO - PRODUCTS

2.01 ANCHORS AND TIE SYSTEMS

A. Anchors and ties shall be zinc coated ferrous metal of the types specified. Zinc coating ASTM A 153, Class B-1, B-2 or B-3 as applicable. Copper cladding of steel wire shall conform to the requirements as specified for Grade 30 HS wire in ASTM B 227.

2.02 JOINT REINFORCEMENT

A. Masonry joint reinforcement shall be factory fabricated from zinc-coated cold-drawn steel wire, ASTM A82. Reinforcement shall consist of two or more deformed longitudinal wires No. 9 gauge, weld connected with minimum No. 9 gauge cross sires, forming a truss or ladder design. Zinc coating, ASTM A 116, Class 1, except those cross wires used for cavity wall ties, shall be Class 3. Out-to-out spacing of longitudinal wires shall be approximately 2 inches less than the nominal width of the block or width in which it is placed. Distance between welded contacts of cross wires with each longitudinal wire shall not exceed 16 inches. Joint reinforcement shall be furnished in flat sections 10 to 20 feet in length except that factory formed corner reinforcements and other special shapes may be less in lengths.

PART THREE - EXECUTION

3.01 REPLACING REINFORCEMENT

A. Masonry joint reinforcement shall be placed so that longitudinal wires are located over face-shell mortar beds and are fully embedded in the mortar for their entire length with minimum mortar cover of 5/8 inch on exterior side of walls and 1/2 inch at other locations. Reinforcement at openings shall extend not less than 24 inches beyond the end of sills or lintels or to the end of the panel, if the distance to the end of the panel is less than 24 inches. Reinforcement shall be lapped 6 inches or more. Factory fabricated sections shall be installed at corners and wall intersections.

B. Align all vertical cells to maintain a clean, unobstructed system of flues.

3.02 SPLICES AND REINFORCEMENT

A. Splices may be made only at such points and in such manner that the structural strength of the member will not be reduced. Lapped slices shall provide sufficient lap to transfer the working stress of the reinforcement by bond and shear. Minimum lap shall be 30 bar diameters. Welded or mechanical connections shall develop the strength of the reinforcement.

3.03 GROUTING

A. Perform wall grouting as may be required and shown on drawings in strict accordance with the provisions for highlift grouting as described in Chapter 24 of the Uniform Building Code, latest edition. Do not grout until masonry has cured at least 24 hours. Consolidate all grout at time of pouring by puddling with a mechanical vibrator, filling all cells of the masonry, and then reconsolidation later by puddling before the plasticity is lost.

3.04 CONTROL JOINTS

A. Control joints shall be provided in accordance with the locations and details shown on the Drawings, shall be constructed by using special control joint units, open end stretcher units, or metal-sash-jamb units, and control joint key. Control joints shall extend through bond beams, unless otherwise indicated. On the weather side of exterior walls, control joints shall be raked out about 1/2 inch and left ready for caulking and sealing. On the exposed-to-view faces of interior walls, control joints shall be raked to a depth of 3/8 inch and neatly tooled square and smooth.

END OF SECTION

Section 04200

UNIT MASONRY

PART ONE - GENERAL

1.01 DESCRIPTION

A. The work covered by this Section shall include the furnishing of all labor, materials, equipments, and appliances required to complete the masonry work shown on the Drawings and as herein specified, complete, in strict accordance with this Section of the specifications, the Drawings, and referenced standards.

B. Scope: The work covered by this Section shall include the following:

(1) Furnishing and installing the masonry, complete.

(2) Furnishing and installing masonry ties, anchors, reinforcement and concrete, mortar, and grout for embedding such reinforcement.

(3) Furnishing and installing masonry and precast concrete lintels, sills, coping, and other masonry trim to be built in the masonry.

(4) Building into masonry all bolts, anchors, nailing blocks, inserts, window and door frames, vents, conduits, and related work to be built in, including items furnished and located by other trades or specified in other sections.

(5) Furnishing and installing any bracing, forming, and shoring in conjunction with and in the course of constructing the masonry and not provided in other sections.

(6) Furnishing test specimens and samples of materials as specified.

(7) Cleaning the masonry and removal of surplus material and waste.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Mortar - Section 04100

B. Masonry accessories - Section 04150

C. Sealants and caulking - Section 07951

1.03 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Use all means necessary to protect masonry materials before, during, and after installation, and to prevent the installed work and materials of all other trades that are to be incorporated into the masonry work.

B. All masonry materials shall be stored in a dry place and be protected against intrusion of foreign matter. Any cement, lime, or mortar containing lumps that are not easily crushed between the fingers shall not be used in the work.

C. Sand shall be handled and stored in such as manner as to prevent segregation of the particles and the intrusion of any foreign material.

D. All masonry units shall be stored in a shed or stock-piled above ground on platforms and covered with waterproof tarpaulin or other approved covering. The covering shall completely enclose the material, and be securely fastened down.

E. In the event of damage, immediately make all repairs and replacements necessary at no additional cost to the Owner.

PART TWO - PRODUCTS

2.01 CONCRETE MASONRY UNITS

A. Concrete masonry units, as specified below, shall be of modular dimensions where available, and shall include all closures, jamb units, headers and special spaces and sizes required to complete the work as shown. Units shall be of the same manufacturer, composition, size, and appearance and shall be cured by the same process. Units shall be sound and free from cracks, chipped edges, or other defects that would interfere with their proper setting or impair the strength, appearance or durability of the construction. Units shall be free of any deleterious matter that will stain plaster or corrode metal, shall be adequately cured before shipment, and shall be delivered to the job site in an air-dry condition.

(1) Hollow load bearing and light weight units: Hollow load bearing and light weight units shall conform to Standard Specifications for Hollow Load Bearing Concrete Masonry Units (ASTM C90-64T or latest revision thereof).

(2) Solid load bearing units: Solid load bearing units shall conform to Standard Specification for Solid Load Bearing Concrete Masonry Units (ASTM C145).

PART THREE - EXECUTION

3.01 GENERAL

A. Lay only dry masonry units.

B. Use masonry saws to cut and fit masonry units.

C. Bond: Running bond with vertical joints located at center of masonry units in alternate course below, or as shown on drawings.

D. Tolerances for masonry construction.

(1) Variation from the plumb.

(a) In the lines and surfaces of columns, walls, and arises: In 10 feet - 1/4 inch; in any story or 20 feet maximum - 1/4 inch, in 40 feet or more - 3/8 inch.

(b) For external corners, control joints and other conspicuous lines: In any story or 20 feet maximum - 1/4 inch; in 40 feet or more - 3/8 inch.

(2) Variation from the level or the grades indicated on the Drawings.

(a) For exposed lintels, sills, parapets, horizontal grooves and other conspicuous lines: In any bay or 20 feet maximum - 1/4 inch; in 40 feet or more - 3/8 inch.

(3) Variation of the linear building lines from established position in plan related portion of columns, walls and partitions.

(a) In any bay or 20 feet maximum - 3/8 inch; in 40 feet or more - 5/8 inch.

(4) Variation in cross-sectional dimensions of columns and in the thickness of walls.

(a) Minus 1/4 inch; plus 3/8 inch.

E. Adjust masonry unit to final position while mortar is soft and plastic.

F. If units are displaced after mortar has stiffened, remove, clean joints and units or mortar and relay with fresh mortar.

G. Adjust shelf angles to keep masonry level and at proper elevation.

H. Provide pressure-relieving joints by placing a continuous 1/8 inch foam neoprene pad under the shelf angle and seal joint with sealant specified in Section 07951 - Sealant and Caulking.

I. When joining fresh masonry to set or partially set masonry construction, clean exposed surface of set masonry and remove loose mortar prior to laying fresh masonry.

3.02 PROTECTION OF WORK

A. Protect sills, ledges and off-sets from mortar drippings or other damage during construction.

B. Remove misplaced mortar or grout immediately.

C. Protect face materials against staining.

3.03 MORTAR BEDS

A. Hollow units.

(1) Lay with full mortar coverage on horizontal and vertical face shells.

(2) Provide full mortar coverage on horizontal and vertical face shells and webs in all courses of the following:

(a) Piers, columns and pilasters.

(b) Starting course on footings and solid foundation walls.

(c) Where adjacent to cells or cavities to be filled with grout.

B. Solid units: Lay with full mortar coverage on horizontal and vertical joints.

3.04 JOINTS

A. Horizontal and vertical face joints

(1) Nominal thickness: 3/8 inch.

(2) Construct uniform joints.

(3) Shove vertical joints tight.

(4) Strike joints flush in surfaces to be plastered, stuccoed, or covered with other masonry, or other surface applied finish other than paint.

(5) Tool joints in exposed or to be painted surfaces when thumbprint hard with round jointer, or sled runner type jointer.

(6) Remove mortar protruding into cells of cavities to be reinforced or filled.

(7) Fill horizontal joints with mortar between top of masonry partitions and underside of concrete slabs or beams.

B. Collar joints: Except in cavity walls, fill with mortar by back purging either facing or backing wythe and shoving, or grouting.

3.05 BUILT IN WORK

A. Avoid cutting and patching.

B. Install bolts, anchors, nailing blocks, inserts, frames, vents, flashings, conduit and other built-in items.

C. Solidly grout spaces around built-in items.

3.06 POINTING AND CLEANING

A. At final completion of unit masonry work fill holes in joints and tool.

B. Cut out and repoint defective joints.

C. Dry brush masonry surface after mortar has set, at end of each day's work and after final pointing.

D. Leave work and surrounding surfaces clean and free of mortar spots and droppings.

END OF SECTION

Section 05200

MISCELLANEOUS METAL

PART ONE - GENERAL

1.01 GENERAL

A. The General conditions and other Contract Documents are hereby made a part of this Section to the same extent as if written out in full.

1.02 SCOPE

A. Furnish, fabricate and erect as required, all miscellaneous metal items indicated, noted or detailed on the drawings and specified.

1.03 SHOP DRAWINGS

A. Provide complete shop drawings and setting drawings of all items for approval prior to fabrication.

B. Miscellaneous metal fabricators shall obtain all necessary field measurements at the job site and will be held responsible for their accuracy and for the accurate fitting of this work with the work of others.

PART TWO - PRODUCTS

2.01 MATERIAL

A. All material shall be new and shall conform to ASTM designation for the metals used. All aluminum shall be 6063T5 or T6 alloy.

2.02 ANGLES, PLATES AND LINTELS

A. Provide opening angles, lintels, and plates on roof and in walls, and miscellaneous supports shown, requiring fabricating in accordance with notes and details.

B. Provide all relieving angles, lintels and other steel supports for all masonry, and veneer, including bolts, inserts, etc., as required and not provided in other trade sections. Provide clip angles, channels, plates, etc., as per notes and details, including bolts, anchors, screws, shop and field connections, and miscellaneous fastenings required to make installation complete.

PART THREE - EXECUTION

3.01 DISSIMILAR MATERIALS

A. Wherever dissimilar metals come in contact, lead or neoprene washer, spacers, gaskets, or other approved material shall be inserted between them to provide insulation against electrolytic action.

3.02 WORKMANSHIP

A. All work performed as per Standard Practice ACIS and National Association of Architectural Metal Manufacturers.

B. The fabricator shall verify all dimensions of work adjoining the work hereunder. Such other work shall be inspected before fabrication and/or installation of items specified herein. Measurements of adjoining work shall be obtained so that work shall fit closely to spaces provided.

C. Workmanship required in the execution of the work shall be of the best quality and subject to the approval of the Architect.

D. The fabricator shall furnish all necessary templates and patters required by other trades. He shall also furnish all items except as otherwise specified, pertaining to the work hereunder that is to be built into structural work under other Sections. The erector shall supervise and be responsible for the proper location and installation of such built-in items.

E. Metal work shall be well formed to shape and size, with sharp lines and angles. Shearing and punching shall leave clean, true lines and surfaces. Permanent connection shall be welded or riveted where practicable.

F. Exposed surfaces of casting shall have a smooth finish and sharp lines and arises that are well defined. Joints shall be milled to a close fit.

G. Rivet and bolt heads shall be counter sunk flush with surface.

H. Fastenings shall be concealed where possible. Thickness of metals and details as assembling and support shall give ample strength and stiffness. Joints exposed to the weather shall be formed to exclude water.

I. Holes in structural steel framing for attaching miscellaneous items will be provided by the steel fabricator if information is given in ample time by the miscellaneous metal fabricator.

J. Welding shall be in accordance with current "Code for Arc and Gas Welding in Building Construction" of the American Welding Society. Exposed welded joints shall be ground smooth.

K. Miscellaneous metal work to be built-in shall be into masonry, concrete and/or stone work as detailed or required, and in such cases the holes shall be carefully drilled by this fabricator unless provided under other sections, and the work properly secured, poured with Por-Rok, molten lead or sulphur, sealed and neatly filled and finished.

3.03 SHOP PAINTING

A. All ferrous metals shall be given one (1) shop coat of zinc chromate rust inhibitive primer paint adaptable for light colored field painting. Wet mil thickness not less than four (4) mils; dry, not less than two (2) mils. Field touch-up shall be done by the erector using paint furnished by the fabricator. Finish painting will be done by the painting subcontractor.

END OF SECTION

SECTION 05400
METAL FRAMING

PART ONE – GENERAL

1.1 SECTION INCLUDES

A. Cold-formed metal framing for:
B. Exterior load-bearing steel stud walls.

1) Interior load-bearing steel stud walls.
2) Exterior steel stud curtain walls.
3) Floor joists.
4) Roof trusses.

C. Bridging, bracing, clips and other accessories.

1.2 RELATED SECTIONS

A. Section 09110 - Non-Load Bearing Wall Framing.
B. Section 09205 - Furring and Lathing: Lath and furring for interior plaster applications.
C. Section 09210 - Gypsum Plaster: Interior plaster applications.
D. Section 09220 - Portland Cement Plaster: Exterior Stucco and EIFS applications.
E. Section 09250 - Gypsum Board: Gypsum interior sheathing.
F. Section 09260 - Gypsum Board Assemblies: Shaft Walls and Area Separation Walls.

1.2 REFERENCES

A. ASTM A 780 - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
B. ASTM A 1003 - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members.
C. ASTM A 653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
D. ASTM C 955 - Standard Specification for Load-Bearing (Transverse and Axial) Steel Studs, Runners (Tracks), and Bracing or Bridging for Screw Application of Gypsum Panel Products and Metal Plaster Bases.
E. ASTM C 1513 - Standard Specification for Steel Tapping Screws for Cold-Formed Steel Framing Connections.
F. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories.
G. AISI - Standard for Cold-Formed Steel Framing General Provisions.

H. AISI - North American Specification (NASPEC) for the Design of Cold-Formed Steel Structural Members - 2001.
I. American Welding Society (AWS).a. AWS D1.1 "Structural Welding Code - Steel."b. AWS D1.3 "Structural Welding Code - Sheet Steel."
J. AISI/COS 2001 - Standard for Cold-Formed Steel Framing - Prescriptive Method for One and Two Story Family Dwelling.

1.4 DESIGN REQUIREMENTS

A. Design steel in accordance with American Iron and Steel Institute Publication "Specification for the Design of Cold-Formed Steel Structural Members", except as otherwise shown or specified.
B. Design loads: As indicated on the Structural Drawings.
C. Design framing systems to withstand design loads without deflections greater than the following:

    1) Exterior Walls: Lateral deflection of: L/240.
    2) Exterior Walls: Lateral deflection of: L/360.
    3) Exterior Walls: Lateral deflection of: L/600.
    4) Interior Load-Bearing Walls: Lateral deflection of: L/240.
    5) Interior Load-Bearing Walls: Lateral deflection of: L/360
    6) Interior Load-Bearing Walls: Lateral deflection of: L/600.

D. Design framing systems to provide for movement of framing members without damage or overstressing, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change (range) of 67 degrees C (120 degrees F).
E. Design framing system to accommodate deflection of primary building structure and construction tolerances.
F. Design exterior non-load-bearing curtain wall framing to accommodate lateral deflection without regard to contribution of sheathing materials.

1.5 SUBMITTALS

A. Submit under provisions of Section 01300.
B. Submit manufacturer's product literature and data sheets for specified products.
C. Manufacturer’s certification of product compliance with codes and standards.
D. Shop Drawings: Submit shop drawings prepared by a licensed professional engineer for approval by the projects Architect and General Contracting indicating:

    1) Locations of framing members, wall framing sections and opening elevations.
    2) Sizes and spacing of framing members.

3) Methods of fastening framing members to each other and to supporting systems.
4) Details of vertical deflection connections to structures.
5) Locations and spacing of lateral bracing and structural bracing systems.
6) Accessory products required for complete installation.
7) Shop Drawings shall be signed and sealed by a registered PE (Professional coldformed specialty Engineer) registered in the state of the project.

E. Structural Calculations: Submit structural calculations prepared by a licensed professional engineer for approval by the project's Architect and General Contractor indicating:

1) Submittal shall be signed and sealed by a registered PE (Professional cold-formed specialty Engineer) registered in the state of the project.
2) Description of design criteria.
3) Engineering analysis depicting stress and deflection (stiffness) requirements for each framing application.
4) Selection of framing components, accessories, fasteners and welded connection requirements.
5) Engineer shall have a minimum of 5 years experience with projects of similar scope.

1.6 QUALITY ASSURANCE

A. Contractor shall provide effective, full time quality control over all fabrication and erection complying with the pertinent codes and regulations of government agencies having jurisdiction.
B. Conduct pre-installation meeting to verify project requirements, substrate conditions, and manufacturer's installation instructions.
C. Welding Standards: Comply with applicable provisions of AWS D1.1 "Structural Welding Code-Steel" and AWS D1.3 "Structural Welding Code-Sheet Steel."
D. Qualify welding processes and welding operators in accordance with AWS "Standard Qualification Procedure".

1.7 DELIVERY, STORAGE, AND HANDLING

A. Notify manufacturer of damaged materials received prior to installing.
B. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
C. Store materials protected from exposure to rain, snow or other harmful weather conditions, at temperature and humidity conditions per the recommendations of ASTM C955.

PART TWO - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: CRACO Mfg., Inc. located at: 1122 Johnson Rd; York, SC 29745; Toll Free Tel: 803-684-5544; Fax: 803-684-2091; Email: technical@cracometals.com; Web: www.cracometals.com
B. Requests for substitutions will be considered in accordance with provisions of Section 01300.
C. All products to be manufactured by current members of the Steel Stud Manufacturers Association (SSMA).

2.2 COMPONENTS

A. Structural Studs: Cold-Formed galvanized steel C-studs.

1) Flange Length: 1 5/8 inch (41mm) 162 flange.
2) Flange Length: 2 inch (51mm) 200 flange.
3) Flange Length: 2-1/2 inch (64mm) 250 flange.
4) Flange Length: 3 inch (76 mm) 300 flange.
5) Flange Length: 3-1/2 inch (88.9 mm) 350 flange.
6) Web Depth: 2-1/2 inch (64 mm) 250 depth.
7) Web Depth: 3-1/2 inch (89 mm) 350 depth.
8) Web Depth: 3-5/8 inch (92 mm) 362 depth.
9) Web Depth: 4 inch (102 mm) 400 depth.
10) Web Depth: 5-1/2 inch (140 mm) 550 depth.
11) Web Depth: 6 inch (152.4 mm) 600 depth.
12) Web Depth: 7-1/4 inch (184 mm) 725 depth.
13) Web Depth: 8 inch (203 mm) 800 depth.
14) Web Depth: 9-1/4 inch (235 mm) 925 depth.
15) Web Depth: 10 inch (254 mm) 1000 depth.
16) Web Depth: 11-1/2 inch (292 mm) 1150 depth.
17) Web Depth: 12 inch (305 mm) 1200 depth.
18) Web Depth: 13-1/2 inch (342.9 mm) 1350 depth.
19) Web Depth: 14 inch (355.6 mm) 1400 depth.
20) Web Depth: 16 inch (406.4 mm) 1600 depth.
21) Web Depth: As indicated on drawings.
22) Minimum Material Thickness: 33 mil (20 gauge) - ASTM color reference: white.
    a. Design Thickness: 0.0346 in. (0.88 mm).
    b. Minimum Delivered Thickness: 0.0329 in. (0.84 mm).
23) Minimum Material Thickness: 43 mil (18 gauge) - ASTM color reference: yellow.
    a. Design Thickness: 0.0451 in. (1.14 mm).
    b. Minimum Delivered Thickness: 0.0428 in. (1.09 mm).
24) Minimum Material Thickness: 54 mil (16 gauge) - ASTM color reference: green.
    a. Design Thickness: 0.0566 in. (1.44 mm).
    b. Minimum Delivered Thickness: 0.0538 in. (1.37 mm).

25) Minimum Material Thickness: 68 mil (14 gauge) - ASTM color reference: orange.
    a. Design Thickness: 0.0713 in. (1.81 mm).
    b. Minimum Delivered Thickness: 0.0677 in. (1.72 mm).
26) Minimum Material Thickness: 97 mil (12 gauge) - ASTM color reference: red.
    a. Design Thickness: 0.1017 in. (2.58 mm).
    b. Minimum Delivered Thickness: 0.0966 in. (2.45 mm).
27) Minimum Material Thickness: 118 mil (10 gauge) - ASTM color reference: blue.
    a. Design Thickness: 0.1242 in. (3.15 mm).
    b. Minimum Delivered Thickness: 0.1180 in. (3.00 mm).
28) Minimum Material Thickness: As required by design.
29) Minimum Material Thickness: As indicated on drawings.
30) Minimum Yield Strength: 33ksi (227 MPa) (for 33mils through 118mils).
31) Minimum Yield Strength: 50ksi (345 MPa) (optional for 54mils and up).
32) Minimum Yield Strength: As required by design.

B. Structural Track: Cold-Formed galvanized steel runner tracks

1) Flange Length: 1 1/4 inch (32 mm) T125 flange.
2) Flange Length: 1 1/2 inch (38 mm) T150 flange.
3) Flange Length: 2 inch (51 mm) T200 flange.
4) Flange Length: 2 1/2 inch (63 mm) T250 flange.
5) Flange Length: 3 inch (76mm) T300 flange.
6) Flange Length: 3 1/2 inch (89 mm) T350 flange.
7) Web: 2 1/2 inch (64mm) 250 depth.
8) Web: 3 1/2 inch (89mm) 350 depth.
9) Web: 3 5/8 inch (92mm) 362 depth.
10) Web: 4 inch (102mm) 400 depth.
11) Web: 5 1/2 inch (140mm) 550 depth.
12) Web: 6 inch (152.4mm) 600 depth.
13) Web: 7 1/4 inch (184 mm) 725 depth.
14) Web: 8 inch (203mm) 800 depth.
15) Web: 9 1/4 (235 mm) 925 depth.
16) Web: 10 inch (254mm) 1000 depth.
17) Web: 11 1/2 inch (292 mm) 1150 depth.
18) Web: 12 inch (305mm) 1200 depth.
19) Web: 13 1/2 inch (342.9 mm) 1350 depth.
20) Web: 14 inch (355.6 mm) 1400 depth.
21) Web: 16 inch (406.4 mm) 1600 depth.
22) Web: Track Web Size to match stud web size.
23) Minimum Material Thickness: 33 mil (20 gauge) - ASTM color reference: white.
    a. Design Thickness: 0.0346 in. (0.88 mm).
    b. Minimum Delivered Thickness: 0.0329 in. (0.84 mm).
24) Minimum Material Thickness: 43 mil (18 gauge) - ASTM color reference: yellow.
    a. Design Thickness: 0.0451 in. (1.14 mm).
    b. Minimum Delivered Thickness: 0.0428 in. (1.09 mm).

25) Minimum Material Thickness: 54 mil (16 gauge) - ASTM color reference: green.
    a. Design Thickness: 0.0566 in. (1.44 mm).
    b. Minimum Delivered Thickness: 0.0538 in. (1.37 mm).
26) Minimum Material Thickness: 68 mil (14 gauge) - ASTM color reference: orange.
    a. Design Thickness: 0.0713 in. (1.81 mm).
    b. Minimum Delivered Thickness: 0.0677 in. (1.72 mm).
27) Minimum Material Thickness: 97 mil (12 gauge) - ASTM color reference: red.
    a. Design Thickness: 0.1017 in. (2.58 mm).
    b. Minimum Delivered Thickness: 0.0966 in. (2.45 mm).
28) Minimum Material Thickness: 118 mil (10 gauge) - ASTM color reference: blue.
    a. Design Thickness: 0.1242 in. (3.15 mm).
    b. Minimum Delivered Thickness: 0.1180 in. (3.00 mm).
29) Minimum Material Thickness: As required by design.
30) Minimum Material Thickness: As indicated on drawings.
31) Minimum Material Thickness: Track Thickness to match wall stud thickness.
32) Minimum Yield Strength: 33ksi (227 MPa) (for 33mils through 118mils).
33) Minimum Yield Strength: 50ksi (345 MPa) (optional for 54mils and up).
34) Minimum Yield Strength: As required by design.

C. Deflection Track: Cold-Formed Deep Leg Runner Slip Track.

1) Leg Length: 2 inch (51 mm) T200 flange.
2) Leg Length: 2-1/2 inch (63 mm) T250 flange.
3) Leg Length: 3 inch (76mm) T300 flange.
4) Leg Length: 3-1/2 inch (89 mm) T350 flange.
5) Leg Length: As required by design.
6) Minimum Material Thickness: 33 mil (20 gauge).
7) Minimum Material Thickness: 43 mil (18 gauge).
8) Minimum Material Thickness: 54 mil (16 gauge).
9) Minimum Material Thickness: 68 mil (14 gauge).
10) Minimum Material Thickness: 97 mil (12 gauge).
11) Minimum Material Thickness: 118 mil (10 gauge).
12) Minimum Material Thickness: As required by design.
13) Minimum Yield Strength: 33ksi (227 MPa) (for 33mils through 118mils).
14) Minimum Yield Strength: 50ksi (345 MPa) (optional for 54mils and up).
15) Minimum Yield Strength: As required by design.

D. Deflection Track Alternate: **CRACO Slotted Slip Track**

1) Size: Web Widths of 2 ½", 3-5/8", 4", 6" & 8".
2) Size: Gauge from 33 mil (20ga.) thru 68 mil (14ga.)
3) Leg Length: 2 ½ inch
4) Size: As required by design.
5) UL listed assembly.

E. U-Channel (CRC Cold Rolled Channel):

1) Size: 150U50-54 1-1/2" (38mm) 54mils (16ga.).
2) Size: 075U50-54 3/4" (19.1mm) 54mils (16ga.).
3) Size: As required by design.

F. SmartFrame **BridgeSmart Connector Clips**

1) Series 300: Minimum Thickness 33mils (20ga.) for use with 3-5/8” & 4” Studs
2) Series 600: Minimum Thickness 33mils (20ga.) for use with 6” & 8” Studs
3) Size: As required by design.
4) Used to connect U-Channel to Steel Studs as Bridging

G. SmartFrame **CRC Connector**

1) Size SFCRC075: Minimum Thickness 43mils (18ga.)
2) Used to connect ends of U-Channel together.

H. Standard Clip Angles: **SmartFrame UtilityAngles**

1) Clip Angels: Minimum Thickness: 54mils (16ga) 0.0538".
2) Clip Angels: Minimum Thickness: 68mils (14ga) 0.0677".
3) Clip Angels: Minimum Thickness: 97mils (12ga) 0.0966".
4) Clip Angels: As required by design.

I. Furring Channel: Furring existing walls and suspended ceiling applications.

1) Size: 087F125-33 7/8" (22mm) Furring Channel 33mils (20ga).
2) Size: 087F125-43 7/8" (22mm) Furring Channel 43mils (18ga).
3) Size: 087F125-54 7/8" (22mm) Furring Channel 54mils (16ga).
4) Size: 150F125-33 1-1/2" (38mm) Furring Channel 33mils (20ga).
5) Size: 150F125-43 1-1/2" (38mm) Furring Channel 43mils (18ga).
6) Size: 150F125-54 1-1/2" (38mm) Furring Channel 54mils (16ga).
7) Size: As required by design.

J. Framing Accessories: Accessories required in this project.

1) Flat Strapping for X-bracing.
2) Flat Strapping and bridging for lateral bracing.
3) SmartFrame StrapTies
4) Gusset Plates.

K. Fasteners: Self-drilling, self-tapping screws; complying with ASTM C 1513 – Standard Specification for Steel Tapping Screws for Cold-Formed Steel Framing Connections.

L. Touch-Up Paint: Complying with ASTM A 780 - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.

2.3 MATERIALS

A. Steel: Galvanized Steel meeting or exceeding the requirements of ASTM A 1003.

1) Coating: Galvanized CP60 coating minimum, complying with ASTM C 955.
2) Coating: Galvanized CP90 coating minimum, complying with ASTM C 955.

PART THREE EXECUTION

3.1 INSPECTION

A. Inspect supporting substrates and structures for compliance of proper conditions for installation and performance of the cold-formed structural framing.

3.2 PREPARATION

A. Prepare attachment surfaces so that they are plumb, level, and in proper alignment for accepting the clod-formed structural framing.

3.3 FABRICATION

A. Prior to fabrication of framing, submit shop drawings to the architect or engineer to obtain approval.
B. Framing components may be preassembled into panels prior to erecting. Prefabricate panels so they are square, with components attached in a manner which prevents racking and minimizes distortion during lifting and transport.
C. Cut all framing components square for attachment to perpendicular members or as required for an angular fit against abutting members.
D. Plumb, align and securely attach studs to flanges of both upper and lower runners, except that in the case of interior, non-load bearing walls where studs need not be attached to upper or lower runners.
E. In all doubled jamb studs and doubled headers not accessible to insulation contractors, provide insulation equal to that specified elsewhere.
F. Splices in members other than top and bottom runner track are not permitted.
G. Provide temporary bracing where required, until erection is complete.

3.4 INSTALLATION - NON-AXIAL LOAD-BEARING CURTAIN WALLS

A. Runners shall be securely anchored to the supporting structure as shown on the drawings.

B. Jack studs or cripples shall be installed below window sills, above window and door heads, and elsewhere to furnish supports.
C. Lateral bracing shall be provided by use of gypsum board and gypsum sheathing or by horizontal straps or cold-rolled channels. Bracing shall conform to Section D3 of the AISI North American Specification (NAS).
D. Provisions for structure vertical movement shall be provided where indicated on the drawings prepared by the engineer of record.
E. Handling and lifting of prefabricated panels shall be done in a manner so as not to cause distortion in any member.

3.5 INSTALLATION - AXIAL LOAD-BEARING WALLS

A. Securely anchor runners to the supporting structure as shown on the drawings.
B. Provide complete, uniform and level bearing support at the bottom runner.
C. Include headers and supporting studs at wall openings as shown on the drawings.
D. Provide diagonally braced stud walls, as indicated on the drawings at locations designated as "shear walls" for frame stability and lateral load resistance. Position additional studs when necessary or as indicated on the drawings to resist the vertical components.
E. Splices in axially loaded studs are not permitted.

3.6 INSTALLATION - JOISTS

A. Align joist bearing at foundation walls by means of shims and/or non-setting grout.
B. Locate joists or a load distribution member directly over bearing studs at the top of bearing walls.
C. Provide web stiffeners at reaction points and/or points of concentrated loads or where indicated on the drawings.
D. Install joist bridging where indicated on the drawings.
E. Install additional joists under parallel partitions when the partition length exceeds one-half the joist span, also around all floor and roof openings, which interrupt one or more spanning members unless otherwise noted.
F. Install end blocking where joist ends are not otherwise restrained from rotation.

3.7 INSTALLATION - TRUSSES

A. Install trusses in accordance with applicable building code requirements and the truss manufacturer's recommendations.
B. Refer to AISI RG-9518 for additional information.
C. Install roof bracing in accordance with the truss design.
D. Install trusses with the plane of the truss webs plumb and parallel to each other, aligned and accurately positioned.

1) Truss Spacing: 16 inches (406 mm) on center.
2) Truss Spacing: 24 inches (610 mm) on center.
3) Truss Spacing: As required by design.

E. Install each truss directly over a bearing stud or a load distribution member designed for this purpose.
F. Install lateral supports as required per manufacturer's design.
G. Immediately after installation, install bridging and permanently brace trusses per truss design.
H. Install approved uplift connectors to connect individual truss to wall studs as required by design.

END OF SECTION

Section 06001

CARPENTRY WORK

PART ONE - GENERAL

1.01 DESCRIPTION

A. Work included: Provide all carpentry needed for a complete and proper installation as shown on drawings, including but not necessarily limited to:

(1) Fitting and installing all wood doors and stock hollow metal doors.

(2) Provide all materials and tools necessary for a complete installation.

B. Related work described elsewhere:

(1) Interior Finish Carpentry	Section 06210
(2) Cabinetwork	Section 06410
(3) Solid Surface Countertops	Section 06415
(3) Wood Doors and Wood Door Frame	Section 08210
(4) Aluminum Clad Windows	Section 08521
(6) Finish Hardware	Section 08710

1.02 QUALITY ASSURANCE

A. Standards: Comply with standards specified herein and with the general requirements of the specifications.

B. Qualifications of personnel:

(1) Throughout progress of the work of this Section, provide at least one person who shall be thoroughly familiar with the specified requirements, completely trained and experienced in the necessary skills and who shall be present at the site and shall direct all work performed under this Section.

(2) In actual installation of the work of this Section, use adequate numbers of skilled workmen to ensure installation in strict accordance with the approved design and the approved recommendation of the materials manufacturers.

1.03 SUBMITTALS

A. General: Comply with the general requirements of these specifications. Submit the following product data for approval after aware of the contract.

(1) Manufacturer's specifications and other data to demonstrate compliance with the specifications.

(2) Samples of the full range of colors and patterns and of exposed accessories from proposed manufacturers.

(3) Manufacturer's recommended installation procedures, material list and shop drawings indicating seam locations and structure.

1.04 PRODUCT HANDLING

A. Protection:

(1) Use all means necessary to protect lumber materials before, during and after delivery to the job site, and to protect the installed work and materials of all other trades.

(2) Deliver the materials to the job site and store, all in a safe area, out of the way of traffic, and shored up off the ground surface.

(3) Identify all framing lumber as to grades, and store all grades separately from other grades. Ensure proper ventilation and protect from moisture and humidity.

(4) Protect all metal products with adequate waterproof outer wrappings.

(5) Use extreme care in the off-loading of lumber to prevent damage, splitting, and breaking of materials.

B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Owner and at no additional cost to the Owner.

PART TWO - PRODUCTS

2.01 LUMBER AND FASTENINGS

A. Framing lumber shall be Douglas Fir construction grade or SPF No. 2 or better for studs, #1 southern yellow pine for joist and rafters unless otherwise indicated on the drawings.

B. Provide fasteners properly selected for the material to be fastened and to the substrate to which the material is to be fixed.

C. All plywood subfloor is to be 3/4" thick T&G and all roof sheathing is to be 5/8" plywood or 15/32" OSB unless otherwise indicated on drawings.

PART THREE - EXECUTION

3.01 INSPECTION

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

B. Selection of lumber pieces:

(1) Carefully select all members. Select individual pieces so that knots and obvious defects will not interfere with placing bolts or proper nailing or making connections.

(2) Cut out and discard all defects which will render a piece unable to serve its intended function. Lumber may be rejected by the Architect, whether or not it has been installed, for excessive warp, twist, bow, crook, mildew, fungus, or mold, as well as for improper cutting and fitting.

(3) Shimming: Do not shim sills, joists, short studs, trimmers, headers, lintels, or other framing components.

3.02 GENERAL FRAMING

A. General:

(1) In addition to all framing operations normal to fabrication and erection indicated on the Drawings, install all backing required for work of other trades.

(2) Set all horizontal or sloped members with crown up.

(3) Do not notch, bore, or cut members for pipes, ducts, conduits, or other reasons except as shown on the Drawings or as specifically approved in advance by the Architect.

(4) Install all plywood subfloors with construction adhesive on joists and nailing. All beams other than non window and service door headers shall be glued and nailed.

3.03 DELIVERIES

A. Stockpiling: Stockpile all materials sufficiently in advance of need to ensure their availability in a timely manner for this work.

B. Delivery schedule: Make as many trips to the job site as are necessary to deliver all materials of this Section in a timely manner to ensure orderly progress of the total work.

3.04 INSTALLATION OF OTHER FINISH HARDWARE

A. Locations: Using only the specified finish hardware, and the proper equipment for the purpose, install all finish hardware.

B. Anchoring: Anchor all components firmly into position for long life under hard use. Use only the anchoring devices furnished with the hardware items, unless otherwise specifically directed.

3.05 INSPECTION, ADJUSTMENT, AND REPORTING

A. General: Using the personnel described in Paragraph 1.02B of the Section, inspect each item of installed finish hardware. Verify that each such item has been installed in strict accordance with the manufacturer's recommendations is in proper condition, and functions in its intended manner.

B. Adjustment: On all finish hardware items designed to permit adjustment, submit a written report stating:

(1) That all installed finish hardware has been inspected in accordance with Article.

(2) That all installed finish hardware is in accordance with these Specifications as to quality, type, appearance, operation, and all other specified attributes.

(3) A precise list, by door opening number and hardware item, of all items of finish hardware which do not meet the specified requirements in furnishing, in installation, or both.

3.06 ALIGNMENT

A. On all framing members to receive a finished wall or ceiling, align the finish subsurface to vary not more than 1/8 inch from the plane of surfaces of adjacent framing and furring members.

3.07 FASTENING

A. Nailing:

(1) Use only common wire nails or spikes of the dimension shown on the Nailing Schedule, except where otherwise called for on the Drawings.

(2) For conditions not covered in the Nailing Schedule, provide penetration into the piece receiving the point of not less than 1/2 the length of the nail or spike provided, however, that 16d nails may be used to connect two pieces of two inch nominal thickness.

(3) Do all nailing without splitting wood. Pre-bore as required. Replace all split members.

B. Bolting: Drill holes 1/16 inch larger in diameter than the bolts being used. Drill straight and true from one side only. Bolt threads shall not bear on wood. Use washers under head and nut where both bear on wood; use washers under all nuts.

C. Screws: For lag screws and wood screws, pre-bore holes same diameter as root of thread; enlarge holes to shank diameter for length of shank. Screw, do not drive, all lag screws and wood screws.

3.08 NAILING SCHEDULE

A. Unless otherwise indicated on the Drawings or required by pertinent codes and regulations, provide at least the following nailing:

(1) Blocking to joist bearing	Two 10d toenailed each side
(2) Blocking to joist or stud	Two 10d toenailed each side
(3) One inch brace to stud	Two 8d face nailed
(4) Two inch brace to stud	Two 16d face nailed
(5) Bridging to joist	Two 8d toenailed
(6) Built-up beams eight inches or	16d @ twelve inches or less in depth centers, staggered
(7) Joist and rafters: to support	Two 10d toenailed each side at laps (twelve inches minimum)Four 16d face nailed
(8) Multiple joists	16d @ twelve inches on centers, staggered
(9) Joists to sill or girder	Two 16d toenailed

(10)One inch furring to underside	Two 8d (one straight; of joists one slanted)
(11)Two inch furring to underside	Two 16d (one straight; of joists one slanted)
(12)Studs toenailed to plate	Two 10d each side
(13)Studs end nailed to plate	Two 20d
(14)Studs nailed together	16d @ twelve inches on centers, staggered
(15)Plates:	16d @ twelve inches on centers, staggered . At splices Two 16d face nailed. Plate lap at cornersTwo 16d face nailed

3.09 CLEANING UP

A. General: Keep the premises in a neat, safe, and orderly condition at all times during execution of this portion of the work, free from accumulation of sawdust, cut ends, and debris.

END OF SECTION

Section 06240

LAMINATED PLASTIC

PART ONE-GENERAL

1.01 DESCRIPTION

A. Work included: Provide all laminated plastic, complete, in place, as shown on the Drawings, specified, herein, and needed for a complete and proper installation.

B. Related work described elsewhere:

(1) Carpentry – Section 06001

(2) Cabinetwork – Section 06410

1.02 QUALITY ASSURANCE

A. Standards: Comply with the standards specified herein and as listed in Section 01085.

B. Qualifications of manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect.

1.03 SUBMITTALS

A. Product data:

(1) Within 20 calendar days after award of the Contract, submit:

(a) Complete materials list of all items proposed to be furnished and installed under this Section.

(b) Manufacturer's specifications and other data required to demonstrate compliance with the specified requirements.

(c) Samples of the full range of colors and patterns available in each of the specified grades from the proposed manufacturer.

(d) Manufacturer's recommended installation procedures.

(2) The manufacturer's recommended installation procedures, when approved by the Architect, will become the basis for inspection and accepting or rejecting actual installation procedures used on the work.

1.04 PRODUCT HANDLING

A. Protection: Use all means necessary to protect materials of the Section before, during, and after installation and to protect the work and materials of all other trades.

B. Replacement: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART TWO – PRODUCT

2.01 GENERAL

A. All plastic laminate shall be “general purpose”, “postforming”, or “specified purpose” type as recommended by the Contractor and approved by the Architect for use on the various surfaces, and shall be “high wear ARP” type finish in accordance with the provisions of NEMA LD3.

B. Countertops are to be ¾’ thick with ¾’ front drop, unless otherwise indicated.

2.02 COLORS AND PATTERNS

A. All countertops are to be as called out on drawings.

END OF SECTION

Section 06410

CABINETWORK

PART ONE - GENERAL

1.01 DESCRIPTION

A. Work included: Provide all cabinetwork shown on the Drawings, complete in place, as specified herein.

1.02 QUALITY ASSURANCE

A. Standards: Comply with standards specified in the General Requirements of these Specifications.

B. Qualifications of manufacturer: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect.

C. Qualifications of installers: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.

D. Certification: In addition to complying with all pertinent codes and regulations, comply with the Custom Grade Requirements for Construction and Joinery of the Architectural Woodwork Institute and provide certification on Shop Drawings.

1.03 SUBMITTALS

A. General:

(1) Comply with the general requirements of these specifications. Submit the following product data for approval after award of the contract.

(a) Manufacturer's specifications and other data to demonstrate compliance with these specifications.

(b) Samples of the full range of colors and patterns and of exposed accessories from proposed manufacturers.

(c) Manufacturer's recommended installation procedures, material list and shop drawings indicating seam locations and structure.

(2) The manufacturer's recommended installation procedures when accepted will be the basis for inspection and acceptance or rejection of work.

1.04 PRODUCT HANDLING

A. Protection: Use all means necessary to protect materials of this Section before, during and after installation and to protect the installed work and materials of all other trades.

B. Replacement: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART TWO - PRODUCTS

2.01 CABINETS

A. General: Fabricate and replace cabinet doors and drawers to the dimensions and arrangements shown on the Drawings, and according to the requirements of this Section.

B. Products:

(1) Cabinet door fronts are to be solid ¾" oak as shown on drawings.
(2) Cabinet drawer fronts are to be solid ¾" oak as shown on drawings.

PART THREE - EXECUTION

3.01 FABRICATION

A. Fabricate the work of this Section in strict accordance with the original design and the approved Shop Drawings.

3.02 INSTALLATION

A. Inspection: Examine the areas and conditions under which work of this Section will be installed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

B. Installation: Install all components in strict accordance with the original design and the approved Shop Drawings anchoring all items firmly into position for long life under hard use.

C. Any filler strips used in cabinet installation shall have the same finish as the cabinets. All cabinets shall be installed plumb and level and securely anchored. All hardware shall be properly adjusted. All shelving bear on all four bearing points. All exposed surfaces shall have the same finish as the front of the cabinets.

3.03 CLEANING AND ADJUSTMENT

A. Upon completion of the installation, visually inspect each installed item, thoroughly clean all surfaces by using the cleaning materials recommended by the manufacturer of the finish being cleaned, and carefully adjust all operating components for optimum operation.

END OF SECTION

Section 07212

INSULATION

PART ONE - GENERAL

1.01 DESCRIPTION

A. Extent of work: The work to be performed under this Section includes, but is not necessarily limited to, furnishing all workers, materials, and equipment to insulate all areas and items as shown on the Drawings, specified herein, in accordance with the General Requirements and chosen manufacturers' directions as approved by the Architect for a complete and finished job.

(1) Wall and Ceiling Insulation

B. Coordination: The work of this Section shall be coordinated with all other crafts pertinent to an on-schedule, finished and complete job.

1.02 QUALITY ASSURANCE

A. Standards: Comply with standards specified herein, the General Requirements and those of the chosen manufacturers as approved by the Architect.

B. Qualifications of manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful production acceptable to the Architect.

C. Qualification of workers: Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.

1.03 SUBMITTALS

A. General: Comply with the General Requirements of these Specifications and submit the following product data for approval after aware of the Contract:

(1) Manufacturer's specifications, installation procedures and other data to demonstrate compliance with these specifications.

(2) The manufacturer's recommended installation procedures when accepted will become the basis for inspection and acceptance or rejection of the work.

1.04 PRODUCT HANDLING

A. Delivery and storage: Deliver materials to job site and store in their original containers or wrappings with all labels intact and legible at time of use. Store in strict accordance with the manufacturer's recommendations.

B. Protection: Use all means necessary to protect materials of this Section before, during, and after installation and to protect installed work and materials of all other trades.

C. Replacement: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART TWO - PRODUCTS

2.01 MATERIALS

A. Ceiling Insulation shall be a minimum of R-38 in ceiling of the appropriate thickness fiberglass or blown-in cellulose equal to Certainteed, Johns Manville, or Owens-Corning.

B. Wall Insulation: Exterior wall perimeter insulation shall be a minimum of R-19 of the appropriate thickness fiberglass batts or as shown on Drawings.

C. Foundation Insulation shall be insulation board as shown on Drawings. The insulation board shall be rigid foundation insulation which meets the requirements of federal specification HH-I-524C Type I.

D. Exterior Wall Vapor Barrier: All exterior frame or furred walls shall have a 6 mil vapor barrier or kraft-faced batts installed on the interior side of the wall.

E. Exterior Frame Walls Air Barrier: Tyvek or equal air barrier is required on all exterior frame walls covered with sidings or veneers.

F. Sound Insulation: Sound insulation is to be unfaced fiberglass with an STC rating as shown on the Drawings.

PART THREE - EXECUTION

A. Wall and Ceiling: Ceiling and wall insulation shall be installed strictly following manufacturer's directions as approved by the Architect and in accordance with the Drawings and these Specifications.

END OF SECTION

Section 07951

SEALANTS AND CAULKING

PART ONE - GENERAL

1.01 DESCRIPTION

A. Work included: Throughout the work, caulk and seal all joints where shown on the Drawings and elsewhere as required to provide a positive barrier against passage of air and passage of moisture.

B. Related work described elsewhere:

(1) Adhere strictly to the caulking and sealant details shown on the Drawings.

(2) Doors and windows.

(3) Painting and finishing.

1.02 QUALITY ASSURANCE

A. Standards: Comply with standards specified in this Section as listed in Division One.

B. Qualifications of manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect. Acceptable manufacturers are W.P. Grace Co., and DAP, Inc.

C. Qualifications of installers:

(1) Proper caulking and proper installation of sealants require that installers be thoroughly trained and experienced in the necessary skills and thoroughly familiar with the specified requirements.

(2) For caulking and installation of sealants throughout the work, use only personnel who have been specifically trained in such procedures and who are completely familiar with the joint details shown on the Drawings and the installation requirements called for in this Section.

1.03 SUBMITTALS

A. General: Comply with provisions appropriate in Division One.

B. Manufacturers' data:

(1) Within 7 calendar days after award of the Contract, submit:

(a) A complete materials list showing all items proposed to be furnished and installed under this Section.

(b) Sufficient data to demonstrate that all such materials meet or exceed the specified requirements.

(c) Specifications, installation instructions, and general recommendations from the materials manufacturers showing procedures under which it is proposed that the material will be installed.

(2) Upon approval by the Architect, the proposed installation procedures will be come the basis for inspecting and accepting or rejecting actual installation procedures used on the work.

1.04 PRODUCT HANDLING

A. Delivery and storage: Deliver all materials of this Section to the job site in the original unopened containers with all labels intact and legible at time of use. Store only under conditions recommended by the manufacturers. Do not retain on the job site any material which has exceeded the shelf life recommended by its manufacturer.

B. Protection: Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all other trades.

C. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART TWO - PRODUCTS

2.01 GENERAL SCHEDULE

A. Sealants shall be provided as follows:

Feature	Sealant Type
Control joints in masonry	Polysulfide
Sawed control joints in concrete slab	Polysulfide or rubber-asphalt
Expansion joints in concrete and masonry, interior	Polysulfide or polyurethane

Around frames and louvers in exterior walls	Acrylic or polysulfide
Joints in sills and thresholds	Acrylic or polysulfide
Around frames in interior walls	Oil-base caulk, butyl or acryl

2.02 POLYSULFIDE AND POLYURETHANE SEALANT

A. Polysulfide and polyurethane sealants shall be one-component elastomeric sealants conforming to Federal Specifications TT-S-230A or two-component rubber-base sealants conforming to Federal Specifications TT-S-227B. Use Type 1, self-leveling, in joints on horizontal surfaces; use Type 2, non-sag, for joints in vertical and slope surfaces.

2.03 EPOXY

A. All interior non-metallic floor slab sawed control joints shall be filled with Euco Epoxy 491 by Euclid Chemical Company, Sikadur Lo-Mod Mortar by Sika Chemical Corporation, or equal.

2.04 ACRYLIC SEALANT

A. Acrylic polymer sealant shall be solvent release type conforming to Federal Specification TT-S-230A.

2.05 BUTYL SEALANT

A. Butyl polymer sealant shall be solvent release type conforming to Federal Specifications TT-S-001657, Type 1.

2.06 RUBBER - ASPHALT SEALANT

A. Cold applied sealant shall conform to ASTM D 1850 and Federal Specifications SS-S0158. Hot applied sealant shall conform to ASTM D 1190 and Federal Specifications SS-S-164.

2.07 CAULKING

A. Oil-base and resin base caulk shall conform to Federal Specifications TT-S-00598.

2.08 ROPE YARN

A. Rope yarn packing shall conform to Federal Specifications HH-P-117.

2.09 BACK-UPS AND FILLERS

A. Back-ups and fillers shall be non-absorbent and non-staining, compatible with sealant and primer. Do not use materials impregnated with oil or bitumen. Resilient fillers shall be closed-cell resilient urethane foam, Polyvinyl chloride foam, polyethylene foam, vinyl or sponge rubber, or polycholorene tubes or rods. Fillers shall be approximately 25% to 50% wider than the joint. Braiding hose or rod stock to obtain sufficient size will not be permitted.

B. Supporting type fillers shall be closed-cell rigid foam, cork or non-impregnated fiber board of the size indicated and as required for proper installation or sealant.

2.10 BOND BREAKERS

A. Bond breakers shall be polyethylene tape with pressure-sensitive adhesive, aluminum foil or wax paper.

2.11 PRIMER

A. Primers shall be non-staining type, as recommended by manufacturer of sealant for the material in contact.

2.12 COLORS

All sealant and caulking compounds shall be non-staining and color fast. Colors shall, in general, match the adjacent surfaces.

2.13 BOND - PREVENTIVE MATERIALS

A. Use only one of the following as best suited for the application and as recommended by the manufacturer of the sealant used:

(1) Polyethylene tape, pressure-sensitive adhesive, with the adhesive required only to hold tape to the construction materials as indicated;

(2) Aluminum foil conforming to MIL-SPEC-MIL-A-148E;

(3) Wax paper conforming to Fed. Spec. UU-P-270.

2.14 MASKING TAPE

A. For masking around joints, provide masking tape conforming to Federal Specification UU-T-106C.

2.15 OTHER MATERIALS

A. All other materials, not specifically described but required for complete and proper caulking and installation of sealants, shall be first quality of their respective kinds, new and as selected by the Contractor subject to the approval of the Architect.

PART THREE - EXECUTION

3.01 INSPECTION

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Concrete and ceramic tile surfaces:

(1) All surfaces in contact with sealant shall be dry, sound and well brushed and wiped free from dust.

(2) Use solvent to remove oil and grease, wiping the surfaces with clean rags.

(3) Where surfaces have been treated, remove the surface treatment by use of sandblasting or wire brushing.

(4) Remove all latency and mortar from the joint cavity.

(5) Where backstop is required, insert the approved backup material in the joint cavity to the depth required.

B. Steel surfaces:

(1) Steel surfaces in contact with sealant shall be sandblasted or, if sandblasting would not be practical or would damage adjacent finish, the metal shall be scraped or wire brushed to remove all scale.

(2) Use solvent to remove all oil and grease, wiping the surface clean with rags.

(3) Remove protective coatings on steel by sandblasting or by a solvent that leaves no residue.

C. Aluminum surfaces:

(1) Aluminum surfaces in contact with sealant shall be cleaned of temporary protective coatings, dirt, oil and grease.

(2) When masking tape is used for a protective cover, remove the tape just prior to applying the sealant.

(3) Use only such solvents to remove protective coatings as are recommended for that purpose by the manufacturer of the aluminum work, and which are non-staining.

3.03 INSTALLATION OF BACKUP MATERIALS

A. Use only the backup material recommended by the manufacturer of the sealant and approved by the Architect for the particular installation, compressing the backup material 25% to 50% to secure a positive and secure fit. When using backup for tube or rod stock, avoid lengthwise stretching of the material. Do not twist or braid hose or rod backup stock.

3.04 PRIMING

A. Use only the primer recommended by the manufacturer of the sealant and approved by the Architect for the particular installation. Apply the primer in strict accordance with the manufacturer's recommendations as approved by the Architect.

3.05 BOND-BREAKER INSTALLATION

A. Install an approved bond-breaker where recommended by the manufacturer of the sealant and where directed by the Architect, adhering strictly to the installation recommendations as approved by the Architect.

3.06 INSTALLATION OF SEALANTS

A. General: Prior to start of installation in each joint, verify the joint type according to the details in the Drawings, and verify that the required proportion of width of joint has been secured.

B. Equipment: Apply sealant under pressure with hand or power-actuated gun or other appropriate means. Guns shall have nozzle or proper size and shall provide sufficient pressure to completely fill joints as designed.

C. Masking: Thoroughly and completely mask all joints where the appearance of sealant on adjacent surfaces would be objectionable.

D. Installation of sealant: Install the sealant in strict accordance with the manufacturer's recommendations as approved by the Architect, thoroughly filling all joints to the recommended depth.

E. Tooling: Tool all joints to the profile shown on the details in the Drawings.

F. Clean up:

(1) Remove masking tape immediately after joints have been tooled.
(2) Clean adjacent surfaces free from sealant as the installation progresses. Use solvent or cleaning agent as recommended by the sealant manufacturer.

END OF SECTION

SECTION 08110

METAL DOORS AND FRAMES

PART 1 GENERAL

1.1 DESCRIPTION

A. Work included: Installation of metal doors and frames.

1.2 RELATED SECTIONS

A. Section 04810 - Unit Masonry Assemblies; Placement of anchors in masonry construction.

B. Section 08210 - Wood Doors.

C. Section 08710 - Door Hardware.

D. Section 09900 - Paints and Coatings.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

B. Certificates:
   1. Provide manufacturer's certification that products comply with referenced standards as applicable.

C. Shop Drawings:
   1. Show all openings in the door schedule and/or the Drawings.
   2. Provide details of door design, door construction details and methods of assembling sections, hardware locations, anchorage and fastening methods, door frame types and details, anchor types and spacing, and finish requirements.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and finishes.

E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and finishes.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: _____

1.5 DELIVERY, STORAGE, AND HANDLING

A. Products shall be marked with Architect's opening number on all doors, frames, misc. parts and cartons.

B. Upon delivery, inspect all materials for damage; notify shipper and supplier if damage is found.

C. Protect products from moisture, construction traffic, and damage.
   1. Store vertically under cover.
   2. Place units on 4 inch (102 mm) high wood sills or in a manner that will prevent rust or damage.
   3. Do not use non-vented plastic or canvas shelters.
   4. Should wrappers become wet, remove immediately.
   5. Provide 1/4 inch (6 mm) space between doors to promote air circulation.

1.6 COORDINATION

A. Coordinate with door opening construction and door frame and door hardware installation.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers: _____

2.2 MATERIALS

A. Doors, frames, frame anchors, and hardware reinforcing for each of the levels and models specified shall be provided to meet the requirements of the performance levels specified..

2.3 FRAMES

A. Provide Levels and Models in accordance with ANSI/SDI A250.8 as indicated in the door schedule.

B. Interior frames: Frame configuration and depth as indicated on drawings.

C. Provide knockdown field assembled type frames unless otherwise indicated.

D. Provide face welded type frames unless otherwise indicated.

E. Provide frames, other than slip-on drywall type with a minimum of three anchors per jamb suitable for the adjoining wall construction. Provide anchors of not less than 0.042 inch (1.0 mm) in thickness or 0.167 inch (4.2 mm) diameter wire. Frames over 7 feet 6 inches (2286 mm) shall be provided with an additional anchor per jamb.

F. Slip-on drywall frame anchors shall be as provided by the manufacturer to assure performance specified.

G. Base anchors shall be provided, other than slip-on drywall type, with minimum thickness of 0.042 inch (1.0mm). For existing masonry wall conditions that do not allow for the use of a floor anchor, an additional jamb anchor shall be provided.

H. Prepare all frames for all mortise template hardware and reinforced only for surface mounted hardware. Drilling and/or tapping shall be completed by others.

I. Minimum hardware reinforcing gages shall comply with Table 4 of ANSI/SDI A250.8.

2.4 DOORS

A. Interior doors: Provide interior doors in accordance with ANSI/SDI A250.8 and in the configuration and sizes as indicated on the door schedule:

B. End closure: The top and bottom of the doors shall be closed with channels or closures. The channels or closures shall have a minimum material thickness of 0.042 inch (1.0 mm).
   1. Inverted closure channels: Set flange edges flush with door top/bottom.
   2. Flush closure channels: Set back face of channel web flush with door top/bottom.

C. Core: Provide in accordance with ANSI/SDI A250.8.

D. Door edge design: Provide in accordance with ANSI/SDI A250.8.

E. Minimum hardware reinforcing gages shall comply with Table 4 of ANSI/SDI A250.8.

F. Provide steel astragals where indicated on the Drawings or where required by the manufacturer or NFPA 80.

2.5 FABRICATION

A. Fabricate doors and frames in accordance with ANSI/SDI A250.8.

B. Prime finish: Doors and frames shall be thoroughly cleaned, and chemically treated to insure maximum paint adhesion. All surfaces of the door and frame exposed to view shall receive a factory applied coat of rust inhibiting primer, either air-dried or baked-on. The finish shall meet the requirements for acceptance stated in ANSI/SDI A250.10 "Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames."

C. Factory applied finish: Meet the performance requirements and acceptance criteria as stated in ANSI/SDI A250.3. Color shall be:
   1. As selected from the manufacturers standard colors.
   2. Custom color as selected by the Architect.

D. Design clearances: Fabricate doors and frames to maintain the following clearances:
   1. The clearance between the door and frame shall be 1/8 inch (3.2 mm) in the

case of both single swing and pairs of doors.

2. The clearance between the meeting edges of pairs of doors shall be 3/16 inch (4.8 mm) plus or minus 1/16 inch (1.6 mm). For fire rated applications, the clearances between the meeting edges of pairs of doors shall be 1/8 inch (3.2 mm) plus or minus 1/16 inch (1.6 mm).
3. The clearance measured from the bottom of the door to the bottom of the frame (undercut) shall be a maximum of 3/4 inch (19.1 mm) unless otherwise specified. Fire door undercuts shall comply with ANSI/NFPA 80, "Fire Doors and Fire Windows."
4. The clearance between the face of the door and the stop shall be 1/16 inch (1.6 mm) to 3/32 inch (2.4 mm).
5. All clearances shall be, unless otherwise specified in this document, subject to a tolerance of plus or minus 1/32 inch (0.8 mm).
6. The clearance at the bottom shall be 5/8 inch (15.8 mm).
7. The clearance at the bottom shall be 3/4 inch (19.1 mm).
8. The clearance between the face of the door and doorstop shall be 1/16 inch (1.6 mm) to 1/8 inch (3.2 mm).
9. All clearances shall be, unless otherwise specified, subject to a tolerance of plus or minus 1/32 inch (0.8 mm).

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that project conditions are suitable before beginning installation of frames. Do not begin installation until conditions have been properly prepared.
   1. Verify that completed openings to receive knock-down wrap-around frames are of correct size and thickness.
   2. Verify that completed concrete or masonry openings to receive butt type frames are of correct size.
   3. Verify that drywall construction walls are the correct thickness.

B. If opening preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 INSTALLATION

A. Install frames plumb, level, rigid, and in true alignment in accordance with ANSI A250.11 and DHI A115.1G.

B. Install fire rated doors and frames in accordance with NFPA 80.

C. All frames other than slip-on types shall be fastened to the adjacent structure so as to retain their position and stability. Drywall slip-on frames shall be installed in prepared wall openings in accordance with manufacturer's instructions.

D. Install frames as masonry is laid-up. Fill welded wrap-around frames in masonry construction solid with grout. Brace or fasten frame in such a way to prevent

pressure of the grout from deforming frame. Coordinate with work specified in Section 04810.

E. Install frames in stucco construction as work progresses. Fill welded wrap-around frames solid with grout where indicated. Brace or fasten frame in such a way to prevent pressure of the grout from deforming frame. Coordinate with work specified in Section 09220.

F. Grout shall be mixed to provide a 4 inch (102 mm) maximum slump consistency, hand troweled into place. Grout mixed to a thin "pumpable" consistency shall not be used.

G. If additives are used in masonry or plaster work during cold weather, field coat the inside of steel frames with a bituminous compound to prevent corrosion.

H. Doors shall be installed and fastened to maintain alignment with frames to achieve maximum operational effectiveness and appearance. Doors shall be adjusted to maintain perimeter clearances specified. Shimming shall be performed by the installer as needed to assure the proper clearances are achieved.

3.3 ADJUST AND CLEAN

A. Adjust doors for proper operation, free from binding or other defects.

B. Clean and restore soiled surfaces. Remove scraps and debris and leave site in a clean condition.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

3.5 SCHEDULE

A. Refer to Door and Frame Schedule appended to this section.

END OF SECTION

Section 08111

STOCK HOLLOW METAL WORK

PART ONE - GENERAL

1.01 DESCRIPTION

A. Work included: Provide all standard hollow metal doors and frames, complete in place, not specifically described in other Sections of these Specifications but indicated on the Drawings or otherwise required for a complete and operable facility.

B. Related work described elsewhere:

(1) Carpentry Work - Section 06001

1.02 QUALITY ASSURANCE

A. Standards: Comply with standards specified in this Section and with the general requirements of these specifications.

B. Qualifications of manufacturer: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Owner.

C. Qualifications of installers: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

D. Single source: All work of this Section shall be produced by a single manufacturer unless otherwise approved by the Owner.

1.02 SUBMITTALS

A. General: Comply with provisions of the general requirements.

B. Manufacturers' data:

(1) Within 30 calendar days after award of the contract, submit:

(a) Complete materials list of all items proposed to be furnished and installed under this Section.
(b) Manufacturer's specifications and other data required to demonstrate compliance with the specified requirements.

(c) Shop drawings showing details of each frame type, elevations of each door design type, details of all openings, and all details of construction, installation, and anchorage.

(d) Manufacturer's recommended installation procedures.

(2) The manufacturer's recommended installation procedures, when approved by the Architect, will become the basis for inspecting and accepting or rejecting actual installation procedures used on the work.

1.04 PRODUCT HANDLING

A. Protection: Use all means necessary to protect materials of this Section before, during, and after installation and to protect installed work and materials of all other trades.

B. Replacements: In the event of damage, immediately make all requirements and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART TWO - PRODUCTS

2.01 MATERIALS

A. Hollow metal doors and frames:

(1) Doors and door frames shall be equal to Ceco Corp., Amweld or Republic Builders Products Corp. Frames are to be 18 gauge steel, rolled formed with integral stops and rebates and may be of welded unit construction or knock down type.

(2) Provide U.L. labeled frames and doors where required on the drawings.

2.02 FABRICATION

A. General:

(1) Fabricate steel door and frame units to be rigid, neat in appearance and free from defects, warp or buckle. Accurately form metal to required sizes and profiles.

(2) Wherever practicable, fit and assemble units in the manufacturer's plant. Clearly identify work that cannot be permanently factory-assembled before shipment, to assure proper assembly at the site.

(3) Fabricate exposed faces of doors and panels from only cold-rolled steel.

(4) Fabricate frames, concealed stiffeners, reinforcement, edge channels, louvers and moldings from either cold-rolled or hot-rolled steel (at fabricator's option).

B. Exposed fasteners: Provide countersunk flat Phillips or Jackson heads for exposed screws and bolts.

C. Finish hardware preparation:

(1) Prepare hollow metal units to receive mortised and concealed finish hardware, including cutouts, reinforcing, drilling and tapping in accordance with final Finish Hardware Schedule and templates provided by hardware suppliers. Comply with applicable requirements of ANSI A115.

(2) Reinforce hollow metal units to receive surface-applied hardware. Drilling and tapping for surface-applied finish hardware may be done at site.

(3) Locate finish hardware in accordance with "Recommended Locations for Builders Hardware", published by the National Builders Hardware Association.

D. Shop painting:

(1) Clean, treat and paint exposed surfaces of fabricated hollow metal units, including galvanized surfaces.

(2) Clean steel surfaces of mill scale, rust, oil, grease, dirt and other foreign materials before the application of the shop coat of paint.

(3) Apply shop coat of prime paint of even consistency to provide an uniformly finished surface ready to receive field-applied paint.

PART THREE - EXECUTION

3.01 INSPECTION

A. General: Install hollow metal units and accessories in accordance with manufacturer's data, and as herein specified.

B. Placing frames:

(1) Comply with the provisions of Standard 100 of the Steel Door Institute, unless otherwise indicated.

(2) Except for frames located at in-place concrete or masonry openings, 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 surface smooth and undamaged.

(3) In masonry construction, locate three wall anchors per jamb at hinge and strike levels. Building-in of anchors and grouting of frames will be performed under provisions of Division 4 of these Specifications.

(4) At in-place concrete or masonry construction, set frames and secure to adjacent construction with machine screws and masonry anchorage devices. If attached with screws, provide "Z" fillers at each screw location to prevent collapse or distortion of frame when screws are tightened.

(5) When installed in prepared openings in concrete or masonry construction, install sealant between frame and concrete or masonry in compliance with the requirements of Section 07951.

3.03 ADJUST AND CLEAN

A. Final adjustments: Check and read just operating finish hardware items in hollow metal work just prior to final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including doors or frames which are warped, bowed or otherwise damaged.

B. Prime coat touch-up: Immediately after erection, sand smooth all rusted or damaged areas of prime coat and apply touch-up of compatible air drying primer.

END OF SECTION

Section 08210

WOOD DOORS

PART ONE - GENERAL

1.01 DESCRIPTION

A. Work included: Furnish and deliver to the job site all wood doors indicated on the Drawings, specified herein, or needed for a complete and proper installation.

B. Related work described elsewhere:

(1) Carpentry Work - Section 06001

(2) Finish Hardware - Section 8710

1.02 QUALITY ASSURANCE

A. Standards: Comply with standards specified herein and with the General Requirements.

B. Qualifications of manufacturer: All wood doors shall meet the NWMA approval and I.S. 1 series requirements. Fire doors shall also bear the UL label for the designated rating.

1.03 SUBMITTALS

A. General: Comply with the provisions of the general requirements.

B. Product data: After award of Contract, submit:

(1) Complete materials list showing all items proposed to be furnished and delivered under this Section.

(2) Sufficient data to demonstrate that all such items meet or exceed the specified requirements.

(3) A copy of the guarantee proposed to be furnished.

1.04 GUARANTEE

A. Upon delivery of the doors of this Section to the job site, and as condition of their acceptance, deliver to the Owner two copies of an agreement written on the door manufacturer's standard form, signed by the door manufacturer and the Contractor agreeing to replace or repair defective doors which have warped (bow, cup, or twist). The guarantee shall also include

refinishing and reinstalling which may be required due to repair or replacement of defective doors. Guarantee shall be in effect for a period of one year following date of acceptance.

1.05 PRODUCT HANDLING

A. Protection: Protect the materials of this Section during transit, storage, and handling to prevent deterioration, damage and soiling.

B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART TWO - PRODUCTS

2.01 WOOD DOORS

A. General: Interior doors shall be of the sizes, types, and designs shown on the Drawings. Doors shall be pre-finished, with no dark spots or extreme variations.

B. Adhesives and bonds: Use only adhesives and bonds conforming to NWMA I.S. - 1 standards, Type II, for interior wood doors. Adhesives shall be non-staining.

C. Warp tolerances shall be in accordance with NWMA I.S. - 1.

D. Hardware: Doors shall be pre-machined for hardware.

PART THREE - EXECUTION

3.01 DELIVERY

A. Deliver the work of this Section to the job site in a timely manner to permit the orderly progress of the total work.

3.02 INSTALLATION

A. Installation of the work of this Section is described in Carpentry Section 06001.

END OF SECTION

SECTION 08531

VINYL WINDOWS

PART ONE - GENERAL

1.01 DESCRIPTION

A. Work included: Furnish and deliver to the site all vinyl windows shown on the Drawings, specified herein, and installed as recommended by the manufacturer as approved by the Architect.

B. Related work described elsewhere:

(1) Carpentry Section 06001

(2) Sealants and Caulking Section 07951

1.02 QUALITY ASSURANCE

A. Standards: Comply with standards specified herein and with the General Requirements.

B. Qualifications of Manufacturer: Products used in the work of this Section shall be produced by the manufacturers regularly engaged with manufacture of similar items and with a history of successful production acceptable to the Architect.

1.03 SUBMITTALS

A. General: Comply with the provisions of the General Requirements, applicable laws, safety and building codes.

B. Product data: Within 30 calendar days of the award of Contract, submit:

(1) Complete materials list showing all items proposed to be furnished and delivered under this Section.

(2) Sufficient data to demonstrate that all such items meet or exceed the specified requirements.

(3) A copy of the guarantee proposed to be furnished.

1.04 PRODUCT HANDLING

A. Protection: Protect materials of this Section during transit, storage, handling and installation to prevent deterioration, damage and soiling.

(1) Package and mark each window for location to correspond with opening number on the Drawings.

B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART TWO - PRODUCTS

2.01 VINYL WINDOWS

A. Exterior windows:
Single-Hung: Pella Encompass series, Atrium 8100 series, OR Equal.
Casement: Pella 250 series, Atrium 700 series, OR Equal.
Awning: Pella 250 series, Atrium 705 series, OR Equal.
Fixed: Pella 250 series, Atrium 8900 series, OR Equal.

2.02 PERFORMANCE REQUIREMENTS

A. Standard Performance:
1. Meets or exceeds AAMA/WDMA/CSA 101/I.S.2/A440 Ratings: LC-PG35, WDMA Hallmark Certified.
2. Unit assembly shall withstand both positive and negative uniform static air pressure difference without damage when tested according to ASTM E 330.
3. Air Infiltration, 1.57 psf wind pressure: 0.30 cfm/ft^2 of frame.
4. Design Pressure: 35 psf.
5. Water Penetration Resistance: 5.43 psf.

B. Performance Upgrade:
1. Meets or exceeds AAMA/WDMA/CSA 101/I.S.2/A440 Ratings: LC-PG50, WDMA Hallmark Certified.
2. Unit assembly shall withstand both positive and negative uniform static air pressure difference without damage when tested according to ASTM E 330.
3. Air Infiltration, 1.57 psf wind pressure: 0.30 cfm/ft^2 of frame.
4. Design Pressure: 50 psf.
5. Water Penetration Resistance: 7.52 psf.

C. Forced Entry Resistance, ASTM F 588, Minimum Security Grade: 10.

D. Maximum Operating Force:
1. Initiate Motion: 15 lbs.
2. Maintain Motion: 6 lbs.

E. Meets U.S. ENERGY STAR guidelines.

PART THREE - EXECUTION

3.01 DELIVERY

A. Deliver all vinyl window units to the job site in a timely manner to permit orderly progress of the total work.

3.02 EXAMINATION

A. Examine rough opening to receive vinyl casement windows.
   1. Verify rough opening is plumb, level, square, and of proper dimensions.
   2. Verify a minimum of 1-1/2 inches of solid wood blocking is installed around perimeter of rough opening.

B. Notify Architect of conditions that would adversely affect installation or subsequent use.

C. Do not proceed with installation until unsatisfactory conditions are corrected.

3.03 INSTALLATION

A. Install vinyl windows in accordance with manufacturer's instructions.

B. Install windows plumb, level, square, and without distortion.

C. Maintain alignment with adjacent work.

D. Install windows to be weathertight.

E. Install windows to be freely operating.

F. Verify proper operation of operating hardware.

G. Seal windows to exterior wall cladding with sealant and related backing materials at perimeter of assembly.

H. Place interior seal around vinyl window perimeter to maintain continuity of building thermal and air barrier using [backer rod and sealant] [insulating-foam sealant].

I. Leave windows closed and locked.

3.04 CLEANING

A. Clean vinyl windows in accordance with manufacturer's instructions.

B. Do not use harsh cleaning materials or methods that could damage finish, vinyl, or glass.

C. Remove labels and visible markings.

D. Keep window tracks clear of dirt and debris.

E. Keep weep holes open and clear of obstructions.

3.05 PROTECTION

A. Protect installed vinyl casement windows to ensure that, except for normal weathering, windows will be without damage or deterioration at time of substantial completion.

END OF SECTION

SECTION 08710
DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.
2. Other doors to the extent indicated.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Electromechanical door hardware.
3. Automatic operators.
4. Cylinders specified for doors in other sections.

C. Related Sections:

1. Division 08 Section “Operations and Maintenance”.
2. Division 08 Section “Door Schedule”.
3. Division 08 Section “Hollow Metal Doors and Frames”.
4. Division 08 Section “Interior Aluminum Doors and Frames”.
5. Division 08 Section “Flush Wood Doors”.
6. Division 08 Section “Aluminum-Framed Entrances and Storefronts”.

D. 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.
9. 521 CMR - Massachusetts Architectural Board Regulations.

E. 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. ULC-S319 - Electronic Access Control Systems.
5. ULC-60839-11-1, Alarm and Electronic Security Systems - Part 11-1: Electronic Access Control Systems - System and Components Requirements.
6. CAN-ULC-S533 - Egress Door Securing and Releasing Devices.
7. UL 305 - Panic Hardware.
8. ULC-S132, Emergency Exit and Emergency Fire Exit Hardware.
9. ULC-S533 - Egress Door Securing and Releasing Devices.
10. 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. Proof of Qualification: Provide copy of manufacturer(s) Factory Trained Installer documentation indicating proof of status as a qualified installer of tornado or hurricane storm shelter assemblies.

E. 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.

F. 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.

G. 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. Building Information Modeling (BIM) Qualifications: BIM software tools and processes are used to produce and support data integration of product and technical information used in specifications, submittals, project reviews, decision support, and quality assurance during all phases of Project design, construction, and facility management. Door and hardware schedules and the associated product data parameters are to be derived, updated, and fully integrated with the coordinated Building Information Modeling as required under Division 01.

F. Automatic Operator Supplier Qualifications: Power operator products and accessories are required to be supplied and installed through the Norton Preferred Installer (NPI) program. Suppliers are to be factory trained, certified, and a direct purchaser of the specified power operators and be responsible for the installation and maintenance of the units and accessories indicated for the Project.

G. 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.

H. Each unit to bear third party permanent label indicating compliance with the referenced testing standards.

I. 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.

J. 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

K. 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 Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

C. 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.

D. Building Information Modeling (BIM) Support: Utilize designated BIM software tools and obtain training needed to successfully participate in the Project BIM processes. All technical disciplines are responsible for the product data integration and data reliability of their Work into the coordinated BIM applications.

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.

1.8 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED 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. Please note that ASSA ABLOY is transitioning the Yale Commercial brand to ASSA ABLOY ACCENTRA. This affects only the brand name; the products and product numbers will remain

unchanged. The brand transition is expected to be complete in or about May of 2024, and products shipping after that time will be branded ASSA ABLOY ACCENTRA.

D. 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 BUTT HINGES

A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.

1. Quantity: Provide the following hinge quantity:

    a. Two Hinges: For doors with heights up to 60 inches.
    b. Three Hinges: For doors with heights 61 to 90 inches.
    c. Four Hinges: For doors with heights 91 to 120 inches.
    d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

    a. Widths up to 3’0”: 4-1/2” standard or heavy weight as specified.
    b. Sizes from 3’1” to 4’0”: 5” standard or heavy weight as specified.

3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:

    a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
    b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.

4. Hinge Options: Comply with the following:

    a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.

5. Manufacturers:

    a. McKinney (MK) - TA/T4A Series, 5-knuckle.

2.3 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).

2.4 DOOR OPERATING TRIM

A. Flush Bolts and Surface Bolts: Provide products conforming to ANSI/BHMA A156.3 and A156.16, Grade 1.

1. Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
2. Furnish dust proof strikes for bottom bolts.
3. Surface bolts to be minimum 8” in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
5. Manufacturers:

    a. Burns Manufacturing (BU).
    b. Rockwood (RO).
    c. Trimco (TC).

2.5 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. Small Format Interchangeable Cores: Provide small format interchangeable cores (SFIC) as specified, core insert, removable by use of a special key; usable with other manufacturers' cylinders.

D. Patented Cylinders: ANSI/BHMA A156.5, Grade 1 Certified Products Directory (CPD) listed cylinders employing a utility patented and restricted keyway requiring the use of a patented key. Cylinders are to be protected from unauthorized manufacture and distribution by manufacturer's United States patents. Cylinders are to be factory keyed with owner having the ability for on-site original key cutting.

1. Patented key systems shall not be established with products that have an expired patent. Expired systems shall only be specified and supplied to support existing systems.
2. Manufacturers:

    a. ASSA ABLOY ACCENTRA, formerly known as Yale (YA) - Keymark.
    b. Corbin Russwin (RU) - Access 3 AP.
    c. Corbin Russwin (RU) - Pyramid.
    d. Medeco (MC) - Bilevel.
    e. Medeco (MC) - X4.
    f. Sargent (SA) - Degree DG1.
    g. Sargent (SA) - XC.

E. 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.

F. 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).

G. 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.

2.6 KEY CONTROL

A. Key Control Cabinet: Provide a key control system including envelopes, labels, and tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet. Key control cabinet shall have expansion capacity of 150% of the number of locks required for the project.

1. Manufacturers:

    a. Lund Equipment (LU).
    b. MMF Industries (MM).
    c. Telkee (TK).

2.7 CYLINDRICAL LOCKS AND LATCHING DEVICES

A. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.2, Series 4000, Operational Grade 1 Certified Products Directory (CPD) listed cylindrical locksets. Listed manufacturers shall meet all functions and features as specified herein.

B. Cylindrical Indicator Locksets, Grade 1 (Commercial Duty): ANSI/BHMA A156.2, Series 4000, Operational Grade 1 Certified Products Directory (CPD) listed. Listed manufacturers shall meet all functions and features as specified herein.

1. Provide locksets with functions and features as follows:

    a. Visual status indicators in rose, displaying bold visuals for vacant or occupied lock status.
    b. Meets ANSI/BHMA A156.41 for single motion egress.
    c. Meets UL and CUL Standard 10C Positive Pressure, Fire Test of Door Assemblies with levers that meet A117.1 Accessibility Code.
    d. Three-year limited warranty.

2. Manufacturers:

    a. ASSA ABLOY ACCENTRA, formerly known as Yale (YA) - YPL Series.

C. Cylindrical Locksets, Grade 2 (Standard Duty): ANSI/BHMA A156.2, Series 4000, Grade 2 Certified Products Directory (CPD) listed. Locks are to be non-handed and fully field reversible.

1. Provide locksets with functions and features as follows:

    a. Meets ANSI/BHMA A156.41 for single motion egress.
    b. Where required by code, provide knurling or abrasive coating on all levers leading to hazardous areas.
    c. Meets UL and CUL Standard 10C Positive Pressure, Fire Test of Door Assemblies with levers that meet A117.1 Accessibility Code.
    d. Meets Florida Building Code FL2998 and UL Certification Directory ZHEM.R21744 for latching hardware for hurricane requirements.
    e. Five-year limited warranty for mechanical functions.

2. Manufacturers:

    a. ASSA ABLOY ACCENTRA, formerly known as Yale (YA) - 5300LN Series.
    b. ASSA ABLOY ACCENTRA, formerly known as Yale (YA) - 4600LN Series.

2.8 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.

2.9 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. 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.

7. 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.
8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2” wide stiles.
9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.

10. Rail Sizing: Provide exit device rails factory sized for proper door width application.
11. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Commercial 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. Listed manufacturers shall meet all functions and features as specified herein.

1. Provide locksets with functions and features as follows:

a. Where required by code, provide knurling or abrasive coating on all levers leading to hazardous areas.
b. Meets UL and CUL Standard 10C Positive Pressure, Fire Test of Door Assemblies with levers that meet A117.1 Accessibility Code.
c. Five-year limited warranty for mechanical features.

2. Manufacturers:

a. ASSA ABLOY ACCENTRA, formerly known as Yale (YA) - 6000 Series.

2.10 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 (Commercial Duty): ANSI/BHMA 156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, institutional grade 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 or aluminum alloy body construction, with adjustable backcheck, closing sweep, and latch speed control valves. Provide non-handed units standard.

1. Manufacturers:

a. ASSA ABLOY ACCENTRA, formerly known as Yale (YA) - 3500 Series.
b. ASSA ABLOY ACCENTRA, formerly known as Yale (YA) - 5800 Series.
c. Norton Rixson (NO) - 8500 Series.
d. Norton Rixson (NO) - 410 Series.

C. Door Closers, Surface Mounted (Light Commercial): ANSI/BHMA 156.4, minimum Grade 3 Certified Products Directory (CPD) listed surface mounted, light commercial grade door closers. Non-handed, minimum sizes 2 to 4 Provide closer standard packed for regular, top-jamb, and parallel arm type mounting applications.

1. Manufacturers:

a. ASSA ABLOY ACCENTRA, formerly known as Yale (YA) - 1100 Series.
b. Norton Rixson (NO) - 1700 Series.

2.11 SURFACE MOUNTED CLOSER HOLDERS

A. Electromagnetic Door Holders: ANSI A156.15 electromagnetic door holder/releases with a minimum 20 to 40 pounds holding power and single coil construction able to accommodate.12VDC, 24VAC, 24VDC and 120VAC. Coils to be independently wound, employing an integral fuse and armatures to include a positive release button.

1. Manufacturers:

a. Norton Rixson (RF) - 980/990 Series.
b. Sargent Manufacturing (SA) - 1560 Series.

2.12 ARCHITECTURAL TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1” LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
3. Where plates are applied to fire rated doors with the top of the plate more than 16” above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer’s catalog and template book for specific requirements for size and applications.
4. Protection Plates: ANSI/BHMA A156.6 protection plates (kick, armor, or mop), fabricated from the following:

a. Stainless Steel: 300 grade, 050-inch thick.

5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.

6. Manufacturers:

a. Rockwood (RO).

2.13 DOOR STOPS AND HOLDERS

A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Manufacturers:

a. Rockwood (RO).

2.14 ARCHITECTURAL 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).

2.15 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.

2.16 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.

B. Manufacturer’s Abbreviations:

1. MK - McKinney
2. PE - Pemko
3. RO - Rockwood
4. YA - ASSA ABLOY ACCENTRA
5. RF - Rixson
6. SU - Securitron

Hardware Sets

Set: 1.0

Doors: 12, 13

2	Continuous Hinge	CFM_HD1-M		PE
2	Fire Rated Surf Vert Rod, Nightlatch	6170F90ED AU427F Temp Core	630	YA
2	Fire Rated Surf Vert Rod, Dummy	6170F90ED AU429F	630	YA
2	Permanent Core	IC Core as req'd		
2	Closer	5800 Series (Mount as req'd)	689	YA
2	Kick Plate	K1050 - 10" x 2" LDW x 4BE x CSK	US32D	RO
2	Magnetic Holder	997	689	RF
2	Gasketing	S88D		PE
2	Mtg Edge Gasketing	S77D		PE
1	Position Switch	DPS		SU

Notes:
Magnetic hold opens tied to fire alarm.

Doors are normally held open by magnetic holders.
Upon activation of fire alarm system or loss of power, door will close and latch.
Free egress at all times by pressing rail of either exit device and exiting.

Set: 2.0

Doors: 5, 6, 7

3	Hinge, Full Mortise	TA2714 (Qty & size per spec, NRP as req'd)	US26D	MK
1	Entry Lock	AU 4604LN Temp Core	626	YA
1	Permanent Core	IC Core as req'd		
1	Door Stop	406 / 409 / 441CU as req'd	US32D	RO
1	Gasketing	S88D		PE

Notes:
Offices to be keyed separately - cannot be unlocked with building master key.
Coordinate with owner.

Set: 3.0

Doors: 10, 9

3	Hinge, Full Mortise	TA2714 (Qty & size per spec, NRP as req'd)	US26D	MK
1	Privacy	AU YPL02	626	YA
1	Surface Closer	1100 Series with COVER (Mount as req'd)	689	YA
1	Kick Plate	K1050 - 10" x 2" LDW x 4BE x CSK	US32D	RO
1	Door Stop	406 / 409 / 441CU as req'd	US32D	RO
1	Gasketing	S88D		PE
1	Coat Hook	RM801	US26D	RO

Set: 4.0

Doors: 1, 11, 2, 3, 4, 8

3	Hinge, Full Mortise	TA2714 (Qty & size per spec, NRP as req'd)	US26D	MK
1	Passage Latch	AU 4601LN Temp Core	626	YA
1	Door Stop	406 / 409 / 441CU as req'd	US32D	RO
1	Gasketing	S88D		PE

Set: 5.0

Doors: 15

4	Hinge, Full Mortise	TA2714 (Qty & size per spec, NRP as req'd)	US26D	MK
1	Surface Bolt	630-4	US26D	RO
1	Entry Lock	AU 4604LN Temp Core	626	YA
1	Permanent Core	IC Core as req'd		
1	Astragal, horizontal	355_V		PE
1	Gasketing	S88D		PE

Notes:
Dutch Door with shelf.
Surface bolt used to secure the top half to the bottom half of door.
Horizontal astragal to seal gap between doors.

END OF SECTION 08710

SECTION 09260

GYPSUM WALLBOARD

PART ONE - GENERAL

1.01 DESCRIPTION

A. Work Included: Furnish all labor, materials, and equipment necessary, but not limited to, preparation and installation of gypsum wallboard on walls as shown on Drawings, specified herein as required for a complete and proper job.

B. Finish Preparation: It shall be the General Contractor's responsibility to tape and spackle all dry wall and make ready to receive finish by others.

1.02 RELATED WORK

A. Sealants and Caulking Section 07951

B. Store and protect wallboard from moisture and damage and exposure to the weather.

1.03 TEMPERATURES AND VENTILATION

A. In cold weather and during period of gypsum wall board installation and joint finishing, temperatures in the area where work is in progress, and in place, shall be maintained uniformly within a range of 55° to 65°, with ventilation to eliminate excessive moisture in the building.

PART TWO - PRODUCTS

2.01 GYPSUM WALLBOARD AND TAPE

A. Gypsum wallboard shall be as manufactured by United States Gypsum Gold Bond, Georgia Pacific, or equal approved by the Architect.

(1) Wallboard shall be 48" wide x 1/2" or 5/8" thick with a asphalt gypsum core enclosed in specially formulated water repellant paper on both sides or equal as shown on drawing.

(2) Wallboard shall be Fire Rated Type conforming to AST, C36 - 64 Type x Board.
   a. Use blueboard or equal on all walls behind all plumbing fixtures and wet areas.
   b. Use Type X on all walls required to be one hour rated.

(3) Joint tape shall be strong fibrous perforated tape as recommended by the manufacturer.

B. Gypsum exterior sheathing shall be as manufactured by U.S.G., Georgia Pacific or equal approved by the architect.

(1) Sheathing shall be 5/8" thick and acceptable to the exterior insulation and finish system.

C. Spackling compound shall be plastic cement requiring only the addition of water as recommended by the manufacturer.

D. Accessories - Use manufacturer recommended products such as USG-Perf-A-Tape and all purpose ready mix compound. Also use USG No. 093 control joints, USG acoustical sealant, USG corner bead #103and 701-B, and USG Type “W” or “S” bugle head screws in appropriate size.

PART THREE - EXECUTION

3.01 INSTALLATION OF WALLBOARD

A. Wallboard shall be attached to framing supports by power driven drywall screws 12" o.c. Screws shall be staggered on adjoining edges or ends. All ends and edges of all gypsum wallboard shall occur over nailing members. Joints on opposite sides of a partition shall be so arranged as to occur on different studs.

B. Screws shall provide a slight depression below the surface of the wallboard. Screws shall not be driven closer than 3/8 inch from edges and ends of the board.

C. While fasteners are being driven, the wallboard shall be held in firm contact with support. Attachment should proceed from central portion of the wallboard towards ends and edges.

D. Install control joints spaced not over 30' o.c. at locations directed by the Architect.

E. Inside vertical corners and all joints shall be reinforced with tape reinforcement and filled and sanded in strict accordance with the manufacturer's specifications. Screw head depressions, metal corner reinforcing, and metal trim shall be concealed by at least two coats of compound.

F. All coats shall be allowed to dry thoroughly between each application of compound. All coats shall be sanded after each application has dried. The final coat and subsequent sanding shall leave all gypsum wallboard uniformly smooth and ready to receive decoration by others.

G. Where drywall is to be firetaped only, such as above suspended ceilings, taping should be neatly applied.

3.02 INSTALLATION OF SHEATHING

A. Sheathing shall be installed as required for installation of exterior insulation and finish system as shown on drawings.

3.03 PROTECTION

A. Proper protection shall be provided during the work for floors, windows, doors and other designated areas.

B. Defective work shall be corrected to the satisfaction of the Architect and at no expense of the Owner.

END OF SECTION

Section 09510

ACOUSTICAL CEILING

PART ONE - GENERAL

1.01 DESCRIPTION

A. Work Included: Furnish all labor, materials and equipment necessary but not limited to preparation of area. Acoustical ceiling work includes but is not necessarily limited to acoustical tile and metal grid. Install acoustical ceiling in areas indicated on Drawings and specified herein for a good and complete job.

1.02 QUALITY ASSURANCE

A. Standards: Comply with the standards herein and with the general requirements of the specifications.

B. Qualifications of Manufacturers: Products used in this work shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Owner.

C. Qualifications of Installers: Acoustical ceilings shall be installed by skilled workmen trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper installation of this work.

1.03 SUBMITTALS

A. General: Comply with the general requirements of these specifications. Submit the following product data for approval after award of the contract.

(1) Manufacturer's specifications and other data to demonstrate compliance with these specifications.

(2) Samples of the full range of colors and patterns and of exposed accessories from proposed manufacturers.

(3) Manufacturer's recommended installation procedures, material list and shop drawings indicating seam locations and structure.

1.04 PRODUCT HANDLING

A. Delivery and Storage: Deliver materials to the job site and store in their original unopened containers with all labels intact and legible at time of use. Store in strict accordance with the manufacturer's recommendations.

B. Protection: Use all means necessary to protect materials of this Section before, during, and after installation and to protect installed work and materials of all other trades.

C. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART TWO - PRODUCTS

2.01 ACOUSTICAL TILE

A. Where suspended ceilings are indicated on drawings provide Armstrong ceiling tile. Panels are to be as shown on drawings, including accents and color.

2.02 METAL GRID SYSTEM

A. Where suspended ceilings are indicated on drawings provide Armstrong metal grid system.

PART THREE - EXECUTION

3.01 INSPECTION

A. Examine the areas and conditions under which work of this Section will be completed. Correct conditions detrimental to the execution.

3.02 INSTALLATION

A. Install all materials in strict accordance with the manufacturer's recommendation as approved by the Owner.

B. Cross tees shall be joined to main beams with a positive interlock. At perimeter of walls, angle molding shall be securely anchored and ends of tees shall fit on bottom flange of moldings. The entire grid system shall be installed true to line and level with all cross tees at right angles to the main beams. Angle molding shall be neatly fitted at walls and around offsets. Hanger wires shall be installed not more than 4'on center.

C. Acoustical tile shall be carefully laid in the grid systems to prevent breaking or damaging edges of tile. Where required to fit sizes other than the tile sizes specified, the tile shall be neatly cut.

END OF SECTION

Section 09660

RESILIENT FLOORING

PART ONE - GENERAL

1.01 DESCRIPTION

A. Work included: Provide all resilient flooring, complete in place, as indicated on the Drawings, specified herein, or otherwise needed for a complete and proper installation of the work of this Section.

B. Related work described elsewhere:

(1) Carpet Section 09680

1.02 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.03 SUBMITTALS

A. General: Comply with the general requirements of these Specifications. Submit the following product data for approval after award of the contract.

(1) Manufacturer's specifications and other data to demonstrate compliance with these specifications.

(2) Samples of the full range of colors and patterns and of exposed accessories from proposed manufacturers.

(3) Manufacturer's recommended installation procedures, material list and shop drawing indicating seam locations and structure.

B. The manufacturer's recommended installation procedures when accepted will be the basis for inspection and acceptance or rejection of work.

1.04 PRODUCT HANDLING

A. Delivery and storage: Deliver materials to the job site and store in their original unopened containers with all labels intact and legible at time of use. Store materials in strict accordance with the manufacturer's recommendations.

B. Protection: Use all means necessary to protect materials of this Section before, during, and after installation and to protect installed work and materials of all other trades.

C. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART TWO - PRODUCTS

2.01 MATERIALS, GENERAL

A. Luxury Vinyl Tile is specified on Architectural Drawings.

B. Adhesives shall be waterproof and stabilized type as recommended by the manufacturer of the approved resilient material. Asphalt emulsions and other non-waterproof types will not be acceptable.

2.02 OTHER MATERIALS

A. All other materials, not specifically described but required for a complete and proper installation of the work in this Section, shall be as recommended by the manufacturer of the resilient materials used, and as approved by the Architect.

PART THREE - EXECUTION

3.01 INSPECTION

A. General: Examine the areas and conditions under which resilient flooring is to be placed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

B. Surface shall be smooth, level, at the required finish elevation, without more than 3 mm (1/8") in 3 m (10'-0") variation from level or slopes shown.

3.02 PREPARATION

A. Subfloors: Prior to start of the laying tile units, broom clean or vacuum all surfaces to be covered and inspect the subfloors. Start of laying tile will indicate acceptance of subfloor conditions.

3.03 INSTALLATION

A. General:
   (1) Install tile only after all finishing operations, including painting, have been completed. Moisture content of concrete slabs, building air temperature and relative humidity must be within limits recommended by tile manufacturer.

(2) Place tile units with adhesive cement in strict compliance with the manufacturer's recommendation. Butt tile units tightly to vertical surfaces, thresholds, nosing and edging. Scribe as necessary around obstructions and to produce neat joints, laid tight, even and in straight, parallel lines.

(3) Extend tile units into toe spaces, door reveals, and in closets and similar openings.

(4) Maintain reference markers, holes, or openings that are in place or plainly marked for future cutting by repeating on the finish tile as marked in the subfloor. Use chalk or other non-permanent marking device.

(5) Lay tile from center markers, holes, or openings that are in place or plainly marked for future cutting by repeating on the finish tile as marked in the subfloor. Use chalk or other non-permanent marking device.

(6) Lay tile from center marks established with principal walls, discounting minor off-sets, so that tile at opposite edges of the room are of equal width. Adjust as necessary to avoid use of cut width less than 7.5 cm (3") at room perimeters. Lay tile square to room axis.

B. Matching:

(1) Match tiles for color and pattern by using tile from cartons in the same sequence as manufactured and packaged. Cut tile neatly to and around all fixtures. Broken, cracked, chipped or deformed tile are not acceptable.

(2) Tightly cement tile to sub-base without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks through tile, or other surface imperfections.

(3) Lay tile in ashlar pattern with grain in all tile running in the same direction, perpendicular to the pattern.

3.04 CLEANING AND PROTECTION

A. Remove excess adhesive or other surface blemishes from the tile, using neutral type cleaners recommended by the tile manufacturer. Protect installed flooring from damage until acceptance by the Architect.

3.05 FINISHING

A. After completion of the work and just prior to final inspection, thoroughly clean tile floors and accessories. Apply wax and buff, with the type of wax, number of coats, and buffing procedures recommended by the tile manufacturer.

END OF SECTION

Section 09680

CARPET

PART ONE - GENERAL

1.01 DESCRIPTION

A. Provide all carpeting and accessories complete, in place, as shown on the Drawings, specified herein, and needed for a complete and proper installation.

1.02 QUALITY ASSURANCE

A. Standards: Comply with standards specified herein and with all applicable section of the general requirements of the specifications.

B. Qualifications of installers: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.03 SUBMITTALS

A. General: Comply with the general requirements of these specifications. Submit the following product data for approval after award of the contract.

(1) Manufacturer's specifications and other data to demonstrate compliance with these specifications.

(2) Samples of the full range of colors and patterns and of exposed accessories from proposed manufacturers.

(3) Manufacturer's recommended installation procedures, material list and shop drawing indicating seam locations and structure.

B. The manufacturer's recommended installation procedures when accepted will be the basis for inspection and acceptance or rejection of work.

1.04 PRODUCT HANDLING

A. Protection: Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all other trades.

B. Replacement: In the event of damages, immediately make all repairs and replacements needed to satisfy the Architect and at no additional cost to the Owner.

1.05 GUARANTEE

A. All work included herein shall be guaranteed against any and all defects in workmanship and material which may appear within a period of one year after completion and acceptance of the work by the Architect

PART TWO - PRODUCTS

2.01 FLOOR CARPET

A. See drawings for style and location.

2.02 PAD

A. No pad is to be used; carpet is to be direct glue down.

2.03 OTHER MATERIALS

A. All other materials shall be as recommended by the manufacturers including but not limited to carpet adhesive, seam adhesive, seam tape, tack strips, vinyl or metal carpet strips where carpet butts other floor materials, and shall be shipped to site in original containers. Carpet strips will be required.

PART THREE - EXECUTION

3.01 INSPECTION

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 SURFACE PREPARATION

A. Cleaning: Immediately prior to installation of the work of this Section, thoroughly clean all substrata and remove all oil, grease, paint, varnish, hardeners, and other items which would adversely affect the bond of adhesive.

B. Smoothing: Make all substrata level and from irregularities. Assure one constant floor weight after carpet is installed, grinding high spots and filling low spots as required.

3.03 INSTALLATION

A. General: Installation Method: Glue -down. Carpet to run in the direction recommended by the manufacturer unless specifically otherwise directed. Cut and fit carpet to butt tightly to vertical

surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, threshold, and nosings. Bind and seal cut edges as recommended by carpet manufacturer.

B. Extend carpet into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.

C. Seams: Carpet shall be laid with a minimum of seams. Carpet shall be free of wrinkles, bulges, lumps, etc. and all seams shall be properly cut and butted to make tight invisible joints. No small carpet strips shall be used and cross seams through doorways will not be permitted.

D. Maintain reference markers, hoes, and openings that are in place or marked for future cutting by repeating on finish flooring as marked on subfloor. Use nonpermanent, non-staining marking device.

E. Install pattern parallel to walls and borders.

3.04 CLEANING AND PROTECTION

A. Perform the following operations immediately after installing carpet:

1. Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet manufacturer.

2. Remove yarns that protrude from carpet surface.

3. Vacuum carpet tile using commercial machine with face-beater element.

B. Protect installed carpet to comply with CRI 104, Section 15, “Protection of Indoor Installations.”

C. Protect carpet against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet manufacturer.

D. Perform the following operations immediately after completing resilient product installation:

1. Remove adhesive and other blemishes from exposed surfaces.

2. Sweep and vacuum surfaces thoroughly.

3. Damp-mop surfaces to remove marks and soil.

a. Do not wash surfaces until after time period recommended by manufacturer.

E. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period. Use protection methods recommended in writing by manufacturer.

F. Do not move heavy and sharp objects directly over surfaces. Place hardboard or plywood panels over flooring and under objects while they are being moved. Slide or roll objects over panels without moving panels.

G. Provide a heavy non-staining paper or plastic walkway as required over carpeting in direction of foot traffic, maintaining intact until carpeted space is accepted by the Architect.

H. Clean up: In addition to the general requirements thoroughly clean all carpet surfaces prior to final acceptance of the carpeted areas by the Architect.

END OF SECTION

Section 09775

SANITARY WALL FINISH

PART ONE: GENERAL

1.01 DESCRIPTION:

A. This section describes the requirements for furnishing and installing fiberglass reinforced plastic panels according to manufacturer's recommendations.

1.02 SUBMITTALS:

A. Submit in accordance with Section (Insert Section Number)

1. Two samples of each type of panel, each type of trim and fastener.

2. Shop Drawings: Indicate the location and dimension of joints and fastener attachments.

3. Installation Guide #6211.

1.03 QUALITY ASSURANCE:

A. Provide panels and molding only from the manufacturer specified to ensure warranty and color harmonization of accessories.

1.04 Delivery, Storage, and Handling:

A. Deliver of Materials: Package sheets on skids or pallets for shipment to project site.

B. Storage of Materials: Store panels in a dry place at the project site.

C. Handling: Remove foreign matter from face of panel by use of a soft bristle brush, avoiding abrasive action.

1.05 PROJECT CONDITIONS:

A. Installation shall not begin until building is enclosed, permanent heating and cooling equipment is in operation, and residual moisture from plaster, concrete or terrazzo work has dissipated.

B. During installation and for not less than 48 hours before, maintain an ambient temperature and relative humidity within limits required by type of adhesive used and recommendation of adhesive manufacturer.

C. Provide ventilation to disperse fumes during application of adhesive as recommended by the adhesive manufacturer.

PART TWO: PRODUCTS

2.01 MATERIALS:

A. Wall and/or ceiling panels shall be KEMLITE Kemply with Surfaseal fiberglass reinforced plastic panels as manufactured by KEMLITE COMPANY, Joliet, Illinois, USA Phone: 1-800-435-0080 or 1-815-467-8600, Fax: 1-815-467-8666

1. Wall Panels:

   Wall Panels shall be: (choose one substrate from "Kemply Wall Panels" table) substrate with a factory laminated white (choose one skin from "Kemply Wall Panels" table) skin, size to be (choose size and skin one or two sides from "Kemply Wall Panels" table).

2. Wall panels are specified on Architectural Drawings.

B. ALL PANELS MEET USDA/FSIS REQUIREMENTS.

The Kemply panels above, except for the 3/32" OSB with 0.05" Glasbord-PWI skin one side, have not been tested for physical properties or for fire resistance. The Glasbord finish has been tested (see Kemlite Technical Bulletins 65024, 6229 and 6283). Substrate physical properties and fire resistance are the responsibility of the substrate manufacturer. Kemlite makes no claims as to the products worthiness of the composite for any specific application, overall physical properties, or fire resistance.

Numerical flame spread and smoke development ratings are not intended to reflect hazards presented by Kemlite Company products or any other material under actual fire conditions. These ratings are determined by small scale tests conducted by independent testing facilities using the American Society for Testing and Materials E-84 test standard (commonly referred to as the "Tunnel Test"). KEMLITE PROVIDES THESE RATINGS FOR MATERIAL COMPARISON PURPOSES ONLY. Like other organic building materials (e.g. wood), panels made of fiberglass reinforced plastic resins will burn. When ignited, frp may produce dense smoke very rapidly. All smoke is toxic. Fire safety requires proper design of facilities and fire suppression systems, as well as precautions during construction and occupancy. Local codes, insurance requirements and any special needs of the user of the product will determine the correct fire-rated interior finish and fire suppression system necessary for a specific installation.

1. Division Bars, Corner Trim: Panel manufacturer's standard length extruded vinyl pieces; longest length possible to eliminate end joints.
2. Fasteners: Non-corrosive drive rivets.

PART THREE-PREPARATION

3.01 PREPARATION

A. Examine backup surfaces to determine that corners are plumb and straight, surfaces are smooth, uniform, clean, and free from foreign matter, nails countersunk, joints and cracks filled flush and smooth with the adjoining surface.

B. Do not begin installation until backup surfaces are put into satisfactory condition.

3.02 APPLICATION

A. Do all cutting with carbide tipped saw blades or drill bits, or cut with snips.

B. Install panels with manufacturer's recommended gap for panel field and corner joints.

C. Fastener holes in the panels must be predrilled 1/8" (3.2mm) oversize.

D. For trowel type and application of adhesive, follow adhesive manufacturer's recommendation.

E. Using products acceptable to manufacturer, install the frp panel system in accordance with panel manufacturer's printed instructions, Installation Guide #6211.

3.03 CLEANING

A. Remove any adhesive or excessive sealant from panel face using solvent or cleaner recommended by panel manufacturer.

B. For current distribution and technical information, please call or write: Kemlite Company, Inc., P.O. Box 2429, Joliet, IL 60434, (800) 435-0080, (815) 467-8600, FAX (815) 467-8666. Kemlite, Glasbord, Surfaseal, Thread on the backside and Fluorescent Thread on the Frontside are registered trademarks of Kemlite Company, Inc.

END OF SECTION

Section 09900

PAINTING

PART ONE - GENERAL

1.01 DESCRIPTION

A. Work included: Paint and finish all exposed surfaces in accordance with the types of finish shown on the Finish Schedule, in the Drawings and as specified herein.

B. Related work described elsewhere: Priming or priming and finishing of certain surfaces are specified to be factory performed under pertinent other Sections.

C. Work not included:

(1) Do not include painting which is specified under other Sections.

(2) Unless otherwise indicated, painting is not required on surfaces in concealed areas and inaccessible areas such as furred spaces, foundation spaces, utility tunnels, pipe spaces, and duct shafts.

(3) Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze, and similar finished materials will not require painting under this Section except as may be specified herein.

(4) Do not paint any moving parts of operating units; mechanical or electrical parts such as valve operators, linkages, sinkages, sensing devices, and motor shafts, unless otherwise indicated.

(5) Do not paint over any required labels or equipment identification, performance rating, name or nomenclature plates.

D. Shop priming: Shop priming of ferrous metal items is included under the various sections for structural steel, miscellaneous metal, hollow metal work, and similar items. Also for fabricated components such as architectural woodwork, wood casework, and shop-fabricated or factory-built mechanical and electrical equipment or accessories.

E. Definitions: The term "paint" as used herein, means all coating systems materials including primers, emulsions, epoxy, enamels, sealers, fillers, and other applied materials whether used as prime, intermediate, or finish coats.

1.02 QUALITY ASSURANCE

A. In case the paint manufacturer's specifications or instructions differ from the above specifications, apply the more stringent requirements to this work. Color finishes on metal surfaces shall be warranted for a period of: 15 years against chipping, cracking, blistering and peeling and for 10 years against excessive chalking and fading. The finishes shall also meet ASTM D-659-44 No. 8 rating when applied to vertical walls, or in excess of ASTM D-659-44 No. 6 rating when applied to roof surfaces and against fading in excess of 5.0 NBS units.

B. Qualifications of manufacturer: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect.

C. Qualifications of workmen:

(1) Provide at least one person who shall be present at all times during execution of the work of this Section, who shall be thoroughly familiar with the specified requirements and the materials and methods needed for their execution, and who shall direct all work performed under this Section.

(2) Provide adequate numbers of workmen skilled in the necessary crafts and properly informed of the methods and materials to be used.

(3) In acceptance or rejection of the work of this Section, the Architect will make no allowance for lack of skill on the part of workmen.

D. Paint coordination:

(1) Provide finish coats which are compatible with the prime coats used.

(2) Review other Sections of these Specifications as required, verifying the prime coats to be used and assuring compatibility of the total coating system for the various substrata.

(3) Upon request, furnish information on the characteristics of the specific finish materials to ensure that compatible prime coats are used.

(4) Provide barrier coats over non-compatible primers, or remove the primer and re-prime as required.

(5) Notify the Owner in writing of anticipated problems in using the specified systems over prime coating supplied under other sections.

1.03 SUBMITTALS

A. General: Comply with provisions of the General Requirements of these Specifications.

B. Manufacturers' data: Within 7 calendar days after award of the Contract, submit:

(1) Complete materials list of all items proposed to be furnished and installed under this Section.

(2) Manufacturer's specifications and other data required to demonstrate compliance with the specified requirements.

(3) For information only, submit two copies of manufacturer's specifications including paint analysis and application instructions for each material. Indicate in the transmittal that a copy of each manufacturer's instructions has been distributed to the applicator.

C. Upon receipt of review comments, make all revisions and corrections, and resubmit if so required.

1.04 PRODUCT HANDLING

A. Delivery of materials: Deliver all materials to the job site in original, new and unopened containers bearing the manufacturer's name and label showing the following information:

(1) Name or title of the material;

(2) Fed. Spec. number, if applicable;

(3) Manufacturer's stock number;

(4) Manufacturer's name;

(5) Contents by volume for major constituents;

(6) Thinning instructions;

(7) Application instructions.

B. Storage of materials: Provide proper storage to prevent damage to, and deterioration of, paint materials.

C. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the work and materials of all other trades.

D. Replacements: In the event of damage; immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

1.05 JOB CONDITIONS

A. Surface temperatures: Do no apply solvent-thinned paint when the temperature of surfaces to be painted and the surrounding air temperature are below 45°F., unless otherwise permitted by the manufacturer's printed instructions as approved by the Architect.

B. Weather conditions: Do not apply paint in snow, rain, fog, or mist, or when the relative humidity exceeds 85% or to damp or wet surfaces; unless otherwise permitted by the manufacturer's printed instructions as approved by the Architect. Applications may be continued during inclement weather within the temperature limits specified by the paint manufacturer during application and drying periods.

1.06 EXTRA STOCK

A. Amount: Upon completion of the work of this Section, deliver to the Owner an extra stock equaling 10% of each color, type, and gloss of paint used on the work.

B. Packaging: Tightly seal each container and clearly label with the contents and location used.

PART TWO - PRODUCTS

2.01 PAINT MATERIALS

A. Paint products and materials shall be manufactured by Sherwin Williams, Pittsburgh Paint, MAB, and Porter Paints or equal products of other manufacturers must be approved by the Architect.

B. General: Provide the best quality grade of the various types of coatings as regularly manufactured by paint materials manufacturers approved by the Architect. Materials not displaying the manufacturer's identification as a standard best-grade product will not be acceptable.

C. Durability: Provide paints of durable and washable quality. Do not use paint materials which will not withstand normal washing as required to remove pencil marks, ink, ordinary soil, and similar material showing discoloration, loss of gloss, staining, or other damage.

D. Colors and glosses: The Architect will select colors to be used in the various types of paint specified and will be the sole judge of acceptability of the various glosses obtained from the materials proposed to be used in the work.

E. Undercoats and thinners: Provide undercoat paint produced by the same manufacturer as the finish coat. Use only the thinners recommended by the paint manufacturer, and use only the

recommended limits. Insofar as practicable, use undercoat, finish coat, and thinner material as parts of a unified system of paint finish.

F. Standards: Provide paint materials which meet or exceed the standards listed for each application in the Painting Schedule in Part Three of this Section.

2.02 APPLICATION EQUIPMENT

A. General: For application of the approved paint, use only such equipment as is recommended for application of the particular paint by the manufacturer of the particular paint, and as approved by the Architect.

B. Compatibility: Prior to actual use of application equipment, use all means necessary to verify that the proposed equipment is actually compatible with the material to be applied and that the integrity of the finish will not be jeopardized by use of the proposed application equipment.

C. Other materials: All other materials, not specifically described but required for a complete and proper installation of the work of this Section, shall be new, first-quality of their respective kinds, and as selected by the Contractor subject to the approval of the Architect.

PART THREE - EXECUTION

3.01 SURFACE CONDITIONS

A. Inspection: Prior to installation of the work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence. Verify that painting may be completed in strict accordance with the original design and with the manufacturer's recommendations as approved by the Architect.

B. Discrepancies: Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 MATERIALS PREPARATION

A. Mix and prepare painting materials in strict accordance with the manufacturer's recommendations as approved by the Owner.

B. Store materials not in actual use in tightly covered containers.

C. Maintain containers used in storage, mixing, and application of paint in a clean condition, free from foreign materials and residue.

D. Stirring: Stir all materials before application to produce a mixture of uniform density, and as required during the application of materials. Do not stir into the material any film which may form on the surface. Remove this film and, if necessary, strain the material before using.

3.03 SURFACE PREPARATION

A. General:

(1) Perform all preparation and cleaning procedures in strict accordance with the paint manufacturer's recommendations as approved by the Architect.

(2) Removal all removable items which are in place and are not scheduled to receive paint finish, or provide surface-applied protection prior to surface preparation and painting operations.

(3) Following completion of painting in each space or area, reinstall the removed items by using workmen skilled in the necessary trades.

(4) Clean each surface to be painted prior to applying paint or surface treatment.

(5) Removal all oil and grease with clean cloths and cleaning solvents of low toxicity and a flash point in excess of 30^{o}C. (100 degrees F.), prior to start of mechanical cleaning.

(6) Schedule the cleaning and painting so that dust and other contaminants from the cleaning process will not fall into wet, newly painted surfaces.

B. Preparation of wood surfaces:

(1) Clean all surfaces until they are completely free from dirt, oil, and grease.

(2) Smooth all finished wood surfaces exposed to view, using the proper sandpaper. Where so required, use varying degrees of coarseness in sandpaper to produce a uniformly smooth and unmarred wood surface.

(3) Unless specifically approved by the Owner, do not proceed with painting of wood surfaces until the moisture content of the wood is 12% or less as measured by a moisture-meter approved by the Architect.

C. Preparation of metal surfaces:

(1) Thoroughly clean all surfaces until they are completely free form dirt, oil and grease.

(2) On galvanized surfaces, use solvent for the initial cleaning and then treat the surface thoroughly with phosphoric acid etch. Removal all etching solution before proceeding.

(3) Allow to dry thoroughly before application of paint.

D. Preparation of concrete surfaces:

(1) Remove all curing compounds and efflorescence from concrete and masonry surfaces and roughen as required to provide good adhesion of paints. If washing of the surface of masonry is required, us trisodium phosphate solution followed by clean water rinse. Fill all minor holes and grind off projection to produce a uniform surface.

3.04 PAINT APPLICATION

A. General:

(1) Slightly vary the color of succeeding coats. Do not apply additional coats until the complete coat has been inspected and approved by the Architect. Only the inspection and approved coats of paint will be considered in determining the number of coats applied.

(2) Sand and dust between enamel coats to remove all defects visible to the unaided eye from a distance of five feet.

B. Drying:

(1) Allow sufficient drying time between coats. Modify the period as recommended by the material manufacturer to suit adverse weather conditions.

(2) Oil-base and oleo-resinous solvent-type paints shall be considered dry for recoating when the paint feels firm, does not deform or feel sticky under moderate pressure of the thumb, and the application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

C. Brush application: Brush out and work all brush coats onto the surface in an even film. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, and other surface imperfections will not be acceptable.

D. Spray application:

(1) Confine spray application to metal framework and similar surfaces where hand brush work would be inferior.

(2) Wherever spray application is used, apply each coat to provide the equivalent hiding of brush applied coats. Do not double back with spray equipment for the purpose of building up film thickness of two coats in one pass.

E. Completed work shall match the approved color charts and manufacturer's specifications for color, texture, and coverage. Remove, refinish, or repaint all work not in compliance with specified requirements.

3.05 PAINTING SCHEDULE

A. General:

(1) Colors shall be standard colors provided by the specified manufacturers and as shown on the Drawings or as directed by the Architect.

(2) Local and National V.O.C. (Volatile Organic Compound) regulations are constantly changing; consult with manufacturer representatives before finalizing the selection.

END OF SECTION

SECTION 10650

OPERABLE PARTITIONS

PART 1 GENERAL

1.1 RELATED SECTIONS

A. Section 03300 - Cast-In-Place Concrete; concrete tolerances required.

B. Section 05500 - Metal Fabrications; primary structural support, including pre-punching of support members by steel supplier in accordance with template supplied by operable partition supplier's template.

C. Section 06100 - Rough Carpentry; wood framing and supports, and blocking at head and jambs as required.

D. Section 09260 - Gypsum Board Assemblies; metal framing and gypsum board wall systems adjacent to operable partitions, including blocking and insulation.

E. Section 09260 - Gypsum Board Assemblies; wall and ceiling framing at head and jambs.

1.2 REFERENCES

A. ASTM E 90 - Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

B. ASTM E 557 - Standard Practice for the Installation of Operable Partitions.

1.3 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Material descriptions, construction details, finishes, installation details, and operating instructions for each type of operable partition, component, and accessory specified.

C. Shop Drawings: Show location and extent of operable partitions. Include plans, elevations, sections, details, attachments to other construction, and accessories. Indicate dimensions, weights, conditions at openings, and at storage areas, and required installation, storage, and operating clearances. Indicate location and installation requirements for hardware and track, including floor tolerances required and direction of travel. Indicate blocking to be provided by others.

D. Setting Drawings: Show imbedded items and cutouts required in other work, including support beam punching template.

E. Samples: Color samples demonstrating full range of finishes available to Architect. Verification samples shall be available in same thickness and material indicated for the work.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who is certified in writing by the operable partition manufacturer, as qualified to install the manufacturer's partition systems for work similar in material, design, and extent to that indicated for this Project.

B. Acoustical Performance: Test operable partitions in accordance with ASTM E 90 test procedure to attain no less than the STC rating specified. Provide a complete and unedited written test report by the testing laboratory upon request.

C. Preparation of Opening: Conform to ASTM E 557.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Clearly mark packages and panels with numbering systems used on Shop Drawings. Do not use permanent markings on panels.

B. Protect panels during delivery, storage, and handling to comply with manufacturer's instructions and as required to prevent damage.

1.6 WARRANTY

A. Provide operable partition manufacturer's written warranty agreeing to repair or replace components with manufacturing defects for a period of two years.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Acceptable Manufacturer: Modernfold, Inc., which is located at: 215 W. New Rd. ; Greenfield, IN 46140; Toll Free Tel: 800-869-9685; Tel: 317-468-6700; Email: request info (info@modernfold.com); Web: www.modernfold.com

B. Requests for substitutions will be considered in accordance with provisions of Section 10650.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until supports and substrates have been properly prepared.

B. Notify Architect in writing of unsatisfactory preparation prior to installation. Do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions and ASTM E 557 installation procedures. Test for proper operation and make necessary adjustments until satisfactory results are obtained.

3.3 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 15400

PLUMBING

PART ONE – GENERAL

1.01 DESCRIPTION

A. Work Included: Furnish and install all plumbing fixtures, sewer, water waste and vent piping, and all construction, materials and devices herein specified and shown on drawings or as required to completely execute the work.

B. Related Work Described Elsewhere:

(1) Heating, Ventilating, and Air Conditioning - Section 15600

1.02 QUALITY ASSURANCE

A. Qualifications of Installers: For the actual fabrication, installation, and testing of the work of this Section, use only thoroughly trained and experienced workmen, completely familiar with the items required and with the manufacturer's recommended methods of installation. In acceptance or rejection of the installed work, no allowance will be made for lack of skill on the part of the workmen.

B. Code and Standards:

(1) Comply with all pertinent codes and regulations including the BOCA National Plumbing Code.

C. Permits and Fees: The plumbing contractor at his expense shall furnish any necessary permits and fees required by local ordinances and local utilities for construction and inspection of work installed by him under this Contract. Sewer tap fees are not to be included in the bid, but will be taken care of by the Owner.

1.03 SUBMITTALS

A. General: Comply with the general conditions of these specifications.

B. Product Data: Within 20 calendar days after the award of the Contract, submit:

(1) A complete list of all materials to be used under this Section.
(2) Manufacturer's specifications and catalog cuts as required to demonstrate compliance with the specified requirements.

(3) Manufacturer's recommended installation procedures which, when approved by the Owner, will become the basis for inspecting and accepting or rejecting actual installation procedures used on the work.

C. Record Drawings: During progress of the work maintain an accurate record of the installation of all items and lines.

1.04 PRODUCT HANDLING

A. Protection: Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all other trades.

B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Owner and at no additional cost to the Owner.

PART TWO - PRODUCTS

2.01 PIPING

A. Sanitary Waste and Vent System:

(1) All waste and venting piping shall be Schedule 40 "PVC" plastic pipe.

B. Water Supply Piping:

(1) All supply piping shall be “PEX”.

2.02 PIPE SLEEVES AND ESCUTCHEONS

A. All pipe sleeves and escutcheons shall equal or exceed the quality of "Adjusto-Crete", shall have ample clearance for pipe and covering, and shall have chrome plated wall and floor escutcheons over the pipe in finished areas.

2.03 HANGERS AND SUPPORTS

A. Hangers and Supports, unless otherwise shown on the drawings, shall equal or exceed the quality of the following:

Item	Manufacturer and number
Pipe ring hanger	Grinnel 107R
Side beam clamp	Grinnel 202
Trapeze hangers	Superstrut A1200
Vertical riser	Grinnel 261

B. Hanger rods shall conform to the following:

Pipe Size	Rod Diameter
1/2 inch to 2 inch	3/8 inch
2-1/2 inch to 3-1/2 inch	1/2 inch
4 inch to 5 inch	5/8 inch

(1) At the Contractor's option, trapeze hangers may be used where parallel runs of pipe occur. All rods on Trapeze hangers shall be 1/2 inch minimum.

2.04 ISOLATION

A. Isolate all dissimilar metals with isolators equaling or exceeding the quality of "EPCO" dielectric unions.

2.05 INSULATION

A. Pipe insulating materials shall equal or exceed the quality of the following:

(1) Johns Manville 3/8" thick foam plastic "Aerotube" or equal.

2.06 ACCESS PLATES

A. Provide access plates equaling or exceeding the quality of Smith number 4760, prime coated steel for painted walls, with Allen key locking devices.

2.07 FIXTURES AND EQUIPMENT

A. Provide fixtures and equipment equaling or exceeding the quality of the manufacturer and model numbers shown on the Drawings, complete with all required stops, supplies, backing drain, trim, and other items necessary. All fixtures shall be in color "white", unless otherwise shown on drawings, and have stop valve and water connections. Chrome stop valves, wastes, and supplies are to be used at all exposed areas.

2.08 OTHER MATERIALS

A. All other materials, not specifically described but required for a complete and proper installation of the work of this Section, shall be new, first quality of their respective kinds, and as selected by the Contractor subject to the approval of the Owner.

PART THREE - EXECUTION

3.01 INSPECTION

A. Examine the areas and conditions under which work of this Section will be installed. Correct conditions detrimental to the proper and timely completion of the work. Do no proceed until unsatisfactory conditions have been corrected.

3.02 PLUMBING SYSTEM LAYOUT

A. Lay out the plumbing system in careful coordination with the Drawings, determining proper elevations for all components of the system and using only the minimum number of bends to produce a satisfactorily functioning system. Follow the general layout shown on the Drawings in all cases except where other work may interfere. Lay out all pipes to fall within partition, walls, or roof cavities, and to not require furring other than as shown on the Drawings.

3.03 INSTALLATION, GENERAL

A. Do no cut into or reduce the size of any load-carrying member without the prior approval of the Owner. Install all pipes in clear all beams and obstructions and in accordance with the following:

(1) Install all piping promptly, capping or plugging all open ends.
(2) Install all piping generally level and plumb, free from traps, and in a manner to conserve space for other work.
(3) Cushion all traps and bearings to minimize transfer of sound. Provide complete isolation of all dissimilar metals. Firmly anchor all pipes into position.
(4) Provide uniform pitch of at least 1/4 - 1/2 inch per foot for all horizontal waste and soil piping within the building.
(5) Provide air chambers at all fixtures; 16 inch minimum length and same diameter as the branch.
(6) Conceal all piping unless otherwise shown on the Drawings.
(7) Inspect each piece of pipe, couplings, fittings, and equipment for defects and obstructions. Promptly remove all defective material for the site. Do not use lead in any solder.

3.04 INSULATION

A. Cold Water Piping: Insulate all cold water piping concealed within exterior walls and ceilings and ran exposed within the building spaces, using the specified insulation.

B. Hot water piping: Insulate all hot water piping concealed in exterior walls and ceilings. Note: Do not run piping where it may be subject to freezing.

3.05 CLOSING IN UNINSPECTED WORK

A. Do not cover up or enclose until it has been properly and completely inspected and approved. Should any of the work be covered up or enclosed prior to all required inspections and approvals, uncover the work as required and, after it has been completely inspected and approved, make all repairs and replacements with such materials and workmanship as are necessary to the approval of the Owner, and at no additional cost to the Owner.

3.06 TESTING

A. General: Furnish all test pumps, gages, equipment, and personnel required, and test as necessary to demonstrate the integrity of the finished installation to the approval of all pertinent authorities and the Owner.

B. Soil and Waste: Unless otherwise directed, plug all openings and fill with water to a height equal to the lowest vent. Allow to stand for one hour or longer as required. Re-calk leaking joints, as directed and then re-test.

C. Water Lines: Test and make tight at 150 psi water gauge. Retain for four hours; repair all leaking joints as directed; and then re-test.

D. Valves: Test all bonnets for tightness. Test operate all valves at least once from closed-to-open-to-closed positions while valve is under pressure. Test all automatic valves for proper operation at the settings indicated. Test pressure relief valves at least three times.

E. Other: Test all piping specialties for proper operation. Test all air vent points to ensure that air has been vented.

F. Sterilization: Sterilize all water lines after purging in accordance with the current procedures of the American Water Works Association for flushing and disinfecting water mains. Upon completion thoroughly flush the entire portable water system. Chlorinate only when the building is unoccupied and deliver a copy of the certification to the Architect.

END OF SECTION

SECTION 15600

HEATING, VENTILATING, AND AIR CONDITIONING

PART ONE - GENERAL

1.01 DESCRIPTION

A. Work Included: Heating, ventilating, and air conditioning required for this work is indicated on the Drawings and includes, but is not necessarily limited to:

(1) Filters
(2) Exhaust fans
(3) Controls
(4) Ducts, dampers, grilles, registers, and diffusers
(5) Insulation of ducts
(6) All other items required for a complete and operating heating, ventilating, and air conditioning system.

B. Related Work Described Elsewhere:

(1) Plumbing Section 15400

1.02 QUALITY ASSURANCE

A. Qualifications of Installers:

(1) For the actual fabrication, installation, and testing of work under this Section, use only thoroughly trained and experienced workmen completely familiar with the items required and the manufacturer's current recommended methods of installation.

(2) In acceptance or rejection of installed work, the Owner will make no allowance for lack of skill on the part of workmen.

B. Codes and Standards: In addition to complying with all pertinent codes and regulations, comply with all pertinent recommendations contained in "Duct Manual and Sheet Metal Construction for Ventilating and Air Conditioning Systems", latest edition, as published by the Sheet Metal and Air Conditioning Contractors' National Association.

1.03 SUBMITTALS

A. General: Comply with the general requirements of the specifications.

B. Product Data: Within 30 calendar days after award of the Contract submit:

(1) Complete materials list of all items proposed to be furnished and the interface of ducts and equipment with all other items.

(2) Manufacturer's recommended installation procedures which, when approved by the Owner, will become the basis for inspecting and accepting or rejecting actual installation procedures used on the work.

C. Record Documents: During progress of the work, maintain an accurate record of all changes made in the heating, ventilating, and air-conditioning system from the layout and materials shown on the approved submittals.

D. Manual: Upon completion of this portion of the work, and as a condition of its acceptance, deliver to the Owner one copy of a Manual compiled in accordance with the provisions of Section 0135 of these specifications. Include in each cop of the Manual a copy of the Record Documents.

1.04 PRODUCT HANDLING

A. Protection: Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all other trades.

B. Replacements: In the even of damage, immediately make all repairs and replacements necessary to the approval of the Owner and at no additional cost to the Owner.

PART TWO - PRODUCTS

2.01 EQUIPMENT

A. General: All equipment shall be the capacity and types shown on the Equipment Schedule in the Drawings, or specifications, and shall be in the listed manufacturer and model number or shall be an equal approved in advance by the Owner.

B. Single Source:

(1) For ease of maintenance and parts replacement, to the maximum extent possible, use equipment of a single manufacturer.

(2) The Owner reserves the right to reject any materials list which contains equipment from various manufacturers if suitable materials can be secured from fewer manufacturers, and to require source of materials to be unified to the maximum extent possible.

C. Ductwork: Shall be galvanized rectangular fabricated as per the latest edition of SMACNA installation guide. HVAC ductwork branch runs may be flex duct meeting Smacna rules connected to proper register boot fittings.

D. Insulation: Rectangular ducts shall have 1" duct liner pinned and glued. Branch runs shall be externally wrapped with foil faced 1½" insulation with seams sealed with foil tape.

E. Return air ad transfer grilles shall be "Titus", "Hart & Cooley", "Carnes", or equal.

F. Exhaust fans shall be "Broan", "Jenn Aire", "Nu-Tone" or approved equal. Restroom exhaust fans shall be equal to Nu-tone Model QT-80 with VS-63 15 minute switch and shall be exhausted to the building soffitt.

2.02 FIBERGLASS DUCTS

A. General: The Contractor may substitute fiberglass ducts in lieu of metal ducts, but only in concealed areas and locations where there is no danger of physical damage to the ducts.

B. Criteria: Where fiberglass ducts are used, provide minimum nominal thickness of 1". Coat the ends and edges of fiberglass duct sections jointed in the field, using a cementing material which will prevent delamination and corrosion. Finish ductwork shall not impart loose fibers or odors to the air. Ducts with largest dimension of 30" or less shall have a density of not less than 3.25 pounds per cubic foot; ducts wider than 30" shall have a density of not less than five pounds per cubic foot. Provide fiberglass ducts manufactured by Owens/Corning Fiberglass, Johns-Manvill, Certainteed, Therma-Flex or approved equal.

2.03 PIPE AND FITTINGS

A. Provide pipe and fittings complying with the provisions of Section 15400 of these Specifications.

2.04 OTHER MATERIALS

A. All other materials, not specifically described but required for a complete and proper installation, shall be as selected by the Contractor subject to the approval of the Owner.

PART THREE - EXECUTION

3.01 SURFACE CONDITIONS

A. Inspection:

(1) Prior to all work of this Section, carefully inspect the installed work of all other trades and verify all such work is complete to the point where this installation may properly commence.

(2) Verify that the work of this Section may be completed in strict accordance with all pertinent codes and regulations, the approved Shop Drawings, and the manufacturers' recommendations.

B. Discrepancies:

(1) In the event of discrepancy, immediately notify the Architect.

(2) Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved.

(3) Furnish and install flexible asbestos cloth or canvas connections between Air-handling units and ducts.

C. Volume Dampers: Furnish and install adjustable volume dampers in all branch supply ducts. Locate the dampers as close as possible to the main duct.

3.02 INSTALLATION OF GRILLES, REGISTERS, AND DIFFUSERS

A. Install and connect all grilles, registers, and diffusers in the location shown on the approved Shop Drawings, securely anchoring each item in place and sealing with rubber gaskets to prevent leakage.

3.03 EQUIPMENT IDENTIFICATION

A. General: Provide a thorough and complete system of identification of all pipe and equipment, including valves, dampers, and other appurtenances, to permit immediate and positive recognition of all components.

B. Equipment Labels: All equipment furnished and installed under this Section shall be provided with the manufacturer's metal identification labels securely attached to each individual piece of equipment, and showing complete and comprehensive performance, characteristics, size, model number, and serial number.

C. Dampers: At each access door, provide label with letters at least 1/2" high stating the damper number and its purpose. Identify fire dampers with red letters on a white background. Identify all other dampers with black letters on a white background.

3.04 CLEANING THE SYSTEM

A. Ductwork: After the ductwork has been tested and provide tight, thoroughly clean all components of the ductwork and remove all dirt, scale, oil, and other foreign substances which may have accumulated during the installation process.

B. Equipment: After the equipment has been started and proved operational, carefully clean all accessible parts of each piece of equipment, thoroughly removing all traces of dirt, oil, grease, and other foreign substances.

3.05 CLOSING-IN OF UNINSPECTED WORK

A. General: Do not allow or cause any of the work of this Section to be covered up or enclosed until it has been inspected, tested, and approved, do all things necessary to uncover all such work. After the work has been completely inspected, tested, and approved, provide all materials and labor necessary and make all repairs necessary to restore the work to its original and proper condition at no additional cost to the Owner.

3.06 COOPERATION WITH OTHER TRADES

A. Do all things necessary to operate with other trades in order that all systems in and work may be installed in the best arrangement. Coordinate as required with all other trades to share space in common areas and to provide the maximum of access to each system.

3.07 TESTING AND ADJUSTING

A. General: Provide all necessary personnel, equipment, and services and perform all tests necessary to demonstrate the integrity of the completed installation to the approval of the Owner and all other authorities having jurisdiction. Make all adjustments necessary to balance the completed system in accordance with the data shown on the Drawings.

B. Ventilating and Air Conditioning System: After completion of the work of installation, test and regulate all components of the ventilating and air-conditioning system.

3.08 INSTRUCTIONS

A. Upon completion of all required testing and balancing and at a date set by the Architect to coincide with the Owner's acceptance of the completed work, furnish all necessary personnel and thoroughly indoctrinate and instruct the Owner's maintenance and operation personnel in all aspects of operation and maintenance of the installed system. Demonstrate the contents of the Manual required to be submitted under Paragraph 1.03 above and ensure that the Owner's personnel are thoroughly familiar with all aspects of operation and maintenance of the installed system.

END OF SECTION

SECTION 16001

ELECTRICAL

PART ONE - GENERAL

1.01 DESCRIPTION

A. Work Included: Electrical work required for this work is shown on the Drawings and includes, but is not necessarily limited to:

(1) Branch circuit panels for power and lighting.
(2) Complete branch circuit wiring system for lighting, motors, receptacles, junction boxes, and similar uses.
(3) Lighting fixtures, wall switches, receptacles, and similar items.
(4) Wiring and system for telephone, computer and cable TV.(by others)
(5) Wiring, up to and including safety switches, for items described under Section 15400 and 15600 of these specifications.
(6) Wiring for security.

B. Related Works Described Elsewhere:

(1) Provide all required electrical connections and service to items described in all other Sections of these specifications.

1.02 QUALITY ASSURANCE

A. Qualifications of Installers: For the actual fabrication, installation, and testing of the work of this Section, use only thoroughly trained and experienced workmen completely familiar with the items required and with the manufacturers' recommended methods of installation. In acceptance or rejection of the installed work, no allowance will be made for lack of skill on the part of workmen.

B. Codes and Standards: In addition to complying with all pertinent codes and regulations, comply with:

(1) National Electrical Code, latest edition.
(2) Local Utility company regulations.

1.03 SUBMITTALS

A. General: Comply with the provisions of the general conditions.

B. Product Date: Within 20 calendar days after award of the Contract, submit:

(1) A complete list of all materials proposed to be furnished and installed under this Section.
(2) Manufacturers' specifications and catalog cuts as required to demonstrate compliance with the specified requirements.
(3) Manufacturers' recommended installation procedures which, when approved by the Owner, will become the basis for inspecting and accepting or rejecting installation procedures used on the work.

1.04 PRODUCT HANDLING

A. Protection: Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all other trades.

B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Owner and at no additional cost to the Owner.

PART TWO - PRODUCTS

2.01 GROUND SYSTEM

A. All equipment including switchboards, transformers, conduit system, motors, and other apparatus, shall be grounded by conduit or conductor to cold water main or independent grounding electrode, with ground clamps as manufactured by Burndy, T&B, or an equal approved in advance by the Owner. Grounding shall be per the NEC.

2.02 ELECTRICAL DISTRIBUTION SYSTEM

A. Identification of Components: Identify all components by means of a neatly stenciled label, or etched micarta labels.

B. Electric Panels: Panel shall be Square 'D' as shown on drawings.

C. Cover plates shall be standard ivory plates, or brown to match walls.

D. All switches and receptacles are to be residential grade 20 amp.

E. Mount switches 4'-6" above finish floor and wall receptacles 12" above finish floor or 12" above cabinet counter tops.

F. Raceways and Fittings:

(1) All conduit installed concealed in walls, above the ceilings, or exposed in work areas, shall be rigid galvanized or sherardized steel conduit, or electrical metallic tubing with compression fitting. Indenter fittings are not acceptable.
(2) Conduit installed in the floor slab or underground shall be rigid galvanized or plastic per NEC. Conduit in direct contact with earth shall be coated with an asphaltum paint approved, or vinyl coated schedule 80 PVC.
(3) Electrical metallic tubing (EMT) shall conform to all requirements of the National Electrical Code.
(4) All outlets, junction boxes, and switch boxes shall be galvanized code-gage metal:

(a) Use deep boxes with conduits of 1" size or larger.
(b) Telephone outlets shall be standard 4" square boxes with single device over and one-hole telephone plates.

(5) Pull-boxes shall be galvanized code-gage sheet metal with screwed-on covers, of size and shape to accommodate wires without crowding and to suit the location.

(6) Provide sleeves and chases where conduits pass through floors and walls.

(7) New low voltage wiring shall be protected in all public area, and in apartments By Wire Trak or Genova Products, vinyl wire management.

G. Conductors: Wire and cable shall be 600 V insulated NEC standard THHN or XHHW. Branch circuit conductors within 3" of a ballast within the ballast compartment shall have 90 degree C (194 degrees F) insulation or better.

2.03 LIGHTING FIXTURES

A. General: All lighting fixtures shall be complete with all required suspension accessories, canopies, casings, sockets, holders, reflectors, and other items, and shall be completely wired and assembled.

B. Ballasts for all fluorescent fixtures shall be one of the high-power-factor Class P type, and their design and construction shall conform with CBM standards and be identified as such with the CBM-ETL label. Ballasts shall be equipped with a dual protection system consisting of non-resetting protector in the power capacitor and a UL approved protector adjacent to the coil.

C. Indoor lighting fixtures shall be as shown on the Fixture Schedule.

2.04 OTHER MATERIALS

A. All other materials, not specifically described but required for a complete and proper installation of the work of this Section, shall be as selected by the Contractor subject to the approval of the Owner.

PART THREE - EXECUTION

3.01 INSPECTION

A. Examine the areas and conditions under which the work of this Section will be installed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Coordination:

(1) Coordinate installation of electrical items with the schedules for other work, to prevent unnecessary delays in the total work.
(2) Where lighting fixtures and other electrical items are shown in conflict with locations of structural members and wiring to clear the encroachment.

B. Accuracy of Data: The data indicated on the Drawings and in these specifications are as exact as could be secured, but their absolute accuracy is not guaranteed. Exact location, distances, levels, and other conditions will be governed by the building. Use the Drawings and these specifications for guidance, and secure the Architect's approval of all changes in location.

C. Measurements: Verify all measurements at the site. No extra compensation will be made because of differences between locations shown on the Drawings and measurements at the building.

3.03 INSTALLATION OF RACEWAY AND FITTINGS

A. Concealment: Conceal all conduit in walls or ceiling space unless otherwise specifically approved by the Owner or indicated on the Drawings. Where conduit is allowed to be exposed, install the conduit parallel with or at right angles to structural members, walls, and lines of the building.

B. Installation:

(1) Keep all conduit at least 6" away from the covering on hot water pipes.

(2) Keep ends of conduit closed with approved conduit seals during construction of the building. Use conduit unions where union joints are required. Do not use running threads.
(3) Where conduit is installed in concrete slabs, on the ground, underground, or exposed to the weather, make all joints liquid-tight and gas-tight. Bury all underground conduit to a depth of 2'-0" below finished grade unless otherwise shown on the Drawings.
(4) Except for cables or wires otherwise called for, install all conductors in conduit, metal gutter raceway, or pull boxes.

3.04 INSTALLATION OF LIGHTING FIXTURES

A. General: Install all lighting fixtures complete and ready for service, in accordance with the Fixture Schedule on the Drawings:

(1) Wire all fixtures with fixture wiring of at least 150° C rating. Conductors in wiring channels of fixtures mounted in rows shall be the same size as the circuit wiring supplying the rows.
(2) Install all fluorescent fixtures straight and true with reference to adjacent walls.
(3) Install all lighting fixtures, including those mounted in continuous rows, so that the weight of the fixture is supported either directly or indirectly by a sound and safe structural member of the building, using adequate number and type of fasteners to ensure a safe installation. Screwed fastenings and toggles through ceiling or wall material are not acceptable.

B. Lamping: Provide all lamps.

3.05 INSTALLATION OF POWER EQUIPMENT

A. Provide all power and control wiring required for the work of other trades as described on the Drawings and in the various Sections of these specifications, except where the furnishing and installing of such wiring is specified elsewhere.

3.06 INSTALLATION OF CONDUCTORS

A. General:

(1) Unless otherwise indicated on the Drawings, all copper wires used for branch circuits shall be number 12 TW, protected by 20 ampere circuit breakers. Install larger wires, as indicated on the Drawings, where necessary to limit voltage drop. Do not use aluminum.
(2) The number of wires in a conduit run may be indicated on the Drawings by cross lines on the conduit run, where wire size is not shown, install number 12 conductors. Provide code-size conduit for number and size of wires shown or required, unless a

larger conduit size is indicated on the Drawings. Conduit is only required in locations per the National Electric Code and as shown on Drawings.

(3) Use identified (white) neutrals and color-coded phase wires for all branch circuit wiring. Make all splices electrically and mechanically secure with pressure-type connectors or soldering.

(4) Insulate and tape all splices in accordance with the governing code.

B. Home Runs: The Drawings indicate the general direction of home runs. Continue all such home runs to the panel as though the routes were completely indicated.

3.07 INSTALLATION OF PANELS

A. Installation: Unless otherwise indicated on the Drawings, install all panels with the top of the trim 6'-3" above the finished floor. Panels located where they are not visible to the public shall be surface mounted, if space permits.

B. Directories: Mount a typewritten directory behind glass and plastic on the inside of each panel door. On the directory, show the circuit number and complete description of all outlets on each circuit.

3.08 TESTING

A. General: Upon completion of this portion of the work, test all parts of the electrical system in the presence of the Owner. Demonstrate that all equipment furnished, installed, and/or connected under this Section of these specifications functions electrically in the required manner.

B. Test Requirements: All systems shall test free from short circuits and grounds, shall be free from mechanical and electrical defects, and shall show an insulation resistance between phase conductors and ground of not less than that required by the National Electrical Code.

C. Test all circuits for proper neutral connections.

END OF SECTION