Four Rivers Sanitation Authority
Rockford, Illinois

Bidding Requirements and Contract Forms

for

Collection Systems Operations Facility

Capital Project No. 2217

Bid Doc. No. 22-420

Four Rivers Sanitation Authority
Rockford, Illinois

Bidding Requirements and Contract Forms
and
General Provisions and Technical Specifications
for Sanitary Sewer Construction

for

Collection Systems Operations Facility

Capital Project No. 2217

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Timothy S. Hanson	. . . . .	Executive Director
Christopher T. Baer, PE	. . . . .	Director of Engineering

Table of Contents

Section I

Bidding Requirements

Notice to Bidders

The Four Rivers Sanitation Authority (FRSA) will receive signed and sealed bids for the Collection Systems Operations Facility, Capital Project No. 2217, at the Steve Graceffa Administration Building (Administration Building) at 3501 Kishwaukee Street, Rockford, Illinois until 2:00 p.m. on Friday, February 17, 2023 at which time and place all responsive and responsible bids will be publicly opened and read aloud.

The Collection Systems Operations Facility project consists of building construction, sitework, and landscaping for a new operations facility, including concrete slab-on-grade, steel frame, insulated metal wall panels, erection of previously-bid structural steel package, low slope membrane roofing, plumbing, electrical, mechanical systems, earthwork, storm sewer, sanitary sewer, watermain, PCC and HMA pavement, site lighting, and all other appurtenances as indicated in the Contract documents.

Bidder's attention is called to Article 2 – Instructions to Bidders 3.8 requirements for Statement of Qualifications. Bidder must have a permanent business office within forty (40) miles of FRSA's office at 3501 Kishwaukee Street in Rockford, Illinois.

All construction associated Project work shall be completed by December 15, 2023. Liquidated damages shall be $300.00 per calendar day beyond that date.

Bid documents may be obtained at a cost of $50.00 per set (non-refundable) by contacting the FRSA Engineering Department at 815-387-7660.

Plans and specifications may also be viewed at the offices of the Northern Illinois Building Contractors Association at 1111 S. Alpine Rd, Rockford, Illinois. For more information, visit the FRSA website at fourrivers.illinois.gov.

All construction shall be done in accordance with specifications on file with FRSA, including the *General Provisions and Technical Specifications for Sanitary Sewer Construction, Four Rivers Sanitation Authority* (Current Edition).

Each Proposal must be accompanied by the FRSA Bid Bond form with an acceptable Bid Security attached, in the amount of five percent (5%) of the total bid price. This amount is a guarantee that, if the Proposal is accepted, a Contract will be entered into and its performance properly secured.

The successful bidder will be required to furnish a satisfactory Performance Bond in the full amount of the Bid or Proposal. No Bid shall be withdrawn without FRSA's consent for a period of sixty (60) days after the scheduled closing time for receipt of bids.

A mandatory Pre-Bid Conference will be held on Wednesday, February 1, 2023 at 10:00 a.m. at FRSA's Administration Building. Bids will only be accepted by Contractors who are in attendance at the Pre-Bid Conference.

FRSA reserves the right to reject any or all bids, or any part thereof, or to accept any bid or any part thereof, or to waive any formalities in any bids, deemed to be in the best interest of FRSA.

Dated this 12th day of January, 2023.

BY: Timothy S. Hanson, Executive Director

Instructions to Bidders

1 General

1.1 Scope and Intent

This section of the Contract Documents provides detailed information and requirements for preparing bids to prospective bidders, bidders' responsibility, the preparation and the submission of bids, basis for awarding the Contract and other general information concerned with bidding and executing the Contract.

1.2 Contradictions

If in the case of apparent contradictions between or among the Contract Documents, the Contract Documents shall be consulted in the following order: Addenda, Agreement, Supplementary Drawings, Instructions to Bidders, Project Manual, Plans, Four Rivers Sanitation Authority (FRSA) General Provisions and Technical Specifications for Sanitary Sewer Construction. The language in the first such document in which language regarding the conflict, error or discrepancy occurs shall control.

1.3 Mandatory Pre-Bid Conference

A Mandatory Pre-Bid Conference for this project will be held on Wednesday February 2, 2023 at 2:00 p.m. in the FRSA Board Room at 3501 Kishwaukee Street, Rockford, Illinois. Bids will only be accepted by Contractors who are in attendance at the Pre-Bid Conference.

2 Legal Requirements

2.1 Illinois Regulations

A. Public Act 100-1177 (820 ILCS 130/) entitled the “Prevailing Wage Act” requires the Bidder to comply with prevailing wages in accordance with the Illinois Department of Labor Standards. The State of Illinois requires contractors and subcontractors on FRSA projects to submit certified payroll reports via the State’s Certified Transcript of Payroll Portal currently found at: https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/certifiedtranscriptofpayroll.aspx. The Bidder is responsible for verifying current information at the State’s website.

B. Public Act 83-1030 (30 ILCS 565/) entitled the "Steel Products Procurement Act" requires that steel products used or supplied in performance of this Contract or subcontract must be manufactured or produced in the United States with three exceptions.

The provisions of this Section shall not apply:

1. Where the Contract involves an expenditure of less than $500.
2. Where the executive head of the public agency certifies in writing that
   a) the specified products are not manufactured or produced in the United States in sufficient quantities to meet the agency's requirements, or
   b) obtaining the specified products, manufactured or produced in the United States would increase the cost of the Contract by more than 10%.
3. When its application is not in the public interest.

C. Public Act 96-929 (30 ILCS 570/) entitled the “Illinois Workers on Public Works Act” provides that Illinois residents be employed on Illinois public works projects, provided there has been a period of excessive unemployment (5%) in the State of Illinois as defined in the Act; and, further, that Illinois workers are available and capable of performing the particular type work involved.

D. Public Act 101-0221 entitled the “Workplace Transparency Act” requires that any party to a contract adopt and promulgate written sexual harassment policies that include, as a minimum, the following information:

1. the illegality of sexual harassment
2. the definition of sexual harassment under Illinois State law
3. a description of sexual harassment, utilizing examples
4. my (our) organization's internal complaint process including penalties
5. the legal recourse, investigative and complaint process available through the Illinois Department of Human Rights and the Illinois Human Rights Commission
6. directions on how to contact the Department and the Commission
7. protection against retaliation as provided by Section 6-101 of the Illinois Human Rights Act

Upon request, this information must be provided to the Illinois Department of Human Rights and the FRSA.

E. Regarding nondiscrimination in employment, the Contractor for this project will be required to comply with the Illinois Fair Employment Practices Commission's Rules and Regulations.

F. The Contractor for this project must comply with the Occupational Safety and Health Act.

G. The Contractor for this project must comply with the Federal Drug-Free Workplace Act.

H. Public Act 96-1416 requires the Certification of Clean Construction and Demolition Debris (CCDD) and uncontaminated soil prior to disposal at a CCDD fill site. The Contractor for this project must comply with Public Act 96-1416 and be responsible for the certifications and any fees associated with the disposal at a CCDD fill site.

1. In the event that contaminated soil is uncovered on the project, the Contractor must notify FRSA immediately. Any extra costs resulting from the presence of contaminated soil must be evaluated in accordance with FRSA General Provisions & Technical Specs for Sanitary Sewer Construction; General Conditions: Article 5 – Time Provisions and Article 8 – Changes.

2.2 Americans with Disabilities Act

The Contractor for this project will comply with all applicable requirements of the Americans with Disabilities Act of 1990 (ADA). The Contractor will hold harmless and indemnify Four Rivers Sanitation Authority (FRSA) and their representatives from all:

A. Suits, claims, or actions

B. Costs, either for defense (including but not limited to reasonable attorney's fees and expert witness fees) or for settlement

C. Damages of any kind (including but not limited to actual, punitive, and compensatory damages)

relating in any way to or arising out of the ADA, to which said firm is exposed or which it incurs in the execution of the Contract.

3 General Instructions

3.1 Bidder's Responsibility

Bidders are cautioned not to submit proposals until having carefully examined the entire site of the proposed work and adjacent premises and the various means of approach and access to the site, and having made all necessary investigations to inform themselves thoroughly as to the facilities for delivering, placing and handling the materials at the site, and having informed themselves thoroughly as to all difficulties involved in the completion of all the work under this Contract in accordance with its requirements.

Bidders must examine the Plans, Project Manual and other Contract Documents and shall exercise their own judgment as to the nature and amount of the whole of the work to be done and for the bid prices must assume all risk of variance, by whomsoever made, in any computation or statement of amount or quantities necessary to complete fully the work in strict compliance with the Contract Documents. The Bidder must satisfy himself by making borings or test pits, or by such methods as he may prefer, as to the character and location of the materials to be encountered or work to be performed. No pleas of ignorance of conditions that exist or that may hereafter exist, or of conditions or difficulties that may be encountered in the execution of the work under this Contract, as a result of failure to make the necessary examinations and investigations, will be accepted as an excuse for any failure or omission on the part of the Contractor to fulfill, in every detail, all of the requirements of the Contract Documents, or will be accepted as a basis for any claims whatsoever for extra compensation or for an extension of time.

The Contractor is responsible for verifying the location of all existing utilities in the project areas.

The Bidder, therefore, shall satisfy himself by such means as he may deem proper as to the location of all structures that may be encountered in construction of the work.

3.2 Addenda and Interpretations

No interpretation of the meaning of the Plans, Specifications, or other Contract Documents will be made to any bidder orally. Every request for such interpretation must be in writing addressed to Four Rivers Sanitation Authority, 3501 Kishwaukee Street, Rockford, Illinois. To be given consideration, such request must be received at least five (5) business days prior to the date fixed for the opening of bids. All such interpretations and any supplemental instructions will be in the form of written addenda which, if issued, will be sent by email, fax, or certified mail with acknowledgement of receipt requested, to all prospective bidders, at the respective addresses furnished for such purposes, not later than three (3) business days prior to the date fixed for the opening of bids. Failure of any bidder to receive any such

addenda or interpretation shall not relieve said bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

3.3 Laws and Regulations

The prospective bidder is advised that they must comply with all laws of the United States Government, State of Illinois, all ordinances and regulations of FRSA in the performance of the work under this Contract. The Bidder's attention is specifically called to that provision of the General Conditions regarding the rate of wage to be paid on the work.

3.4 Form, Preparation, and Presentation of Proposals

For particulars as to the quantity and quality of the supplies, materials and equipment to be furnished, and the nature and extent of the work or labor to be done, prospective bidders are referred to the Contract Documents, which may be examined or obtained at the office of FRSA.

Each bid will be submitted upon the prescribed Proposal form. All blank spaces for bid prices must be filled in, in ink, with the unit or total sum or both for which the Proposal is made. If the Proposal contains any omissions, erasures, alterations, additions or items not called for in the itemized Proposal, or contains irregularities of any kind, such may constitute sufficient cause for rejection of bid. In case of any discrepancy in the unit price or amount bid for any item in the Proposal, the unit price as expressed in figures will govern. In no case is the agreement form to be filled out or signed by the bidder.

Bidders may opt to contact FRSA's Engineering Department at 815.387.7660 to obtain an electronic Proposal form. If used, this form must be attached to the hard copy Proposal form and appropriately signed and executed with the bid.

The bid must be verified and be presented on the prescribed form in a sealed envelope on or before the time and at the place stated in the Advertisement for Bids, endorsed with the name of the person, firm or corporation presenting it, the date of presentation, and the title of the work for which the bid is made. If forwarded by mail, the sealed envelope containing the Proposal and marked as directed above, must be enclosed in another envelope addressed to Clerk of the Four Rivers Sanitation Authority, 3501 Kishwaukee Street, Rockford, Illinois, 61109 and be sent preferably by certified mail. FRSA will not accept facsimile generated bids.

3.6 Bid Security

Each Proposal must be accompanied by the FRSA Bid Bond form with an acceptable Bid Security attached, in the amount specified in Article One, Notice to Bidders. This sum is a guarantee that, if the Proposal is accepted, a contract will be entered into and its performance properly secured. The FRSA's Bid Bond Form included in the bid packet must be used. No other Bid Bond form may be substituted.

Within ten (10) days after the opening of bids, the deposits of all but the three lowest bidders will be returned. The deposits of the remaining two unsuccessful bidders will be returned within three (3) days after the execution of the Contract, or, if no such Contract has been executed, within sixty (60) days after the date of opening bids. The deposit of the successful bidder will be returned only after he has duly executed the Contract and furnished the required bond and insurance.

3.7 Affidavit of Compliance

Each proposal must be accompanied by an executed Affidavit of Compliance. A separate Affidavit of Compliance form is enclosed with the Proposal packet. Failure to submit an executed Affidavit of Compliance with the Proposal may constitute sufficient cause for rejection of the bid.

3.8 Statement of Qualifications

Each Proposal must be accompanied by a Statement of Qualifications certifying that the bidder is registered to do business in the State of Illinois, has a permanent business office within forty (40) miles of the FRSA office at 3501 Kishwaukee Street in Rockford, IL, and provides documentation that the bidder possesses the appropriate financial, material, equipment, facility and personnel resources and expertise necessary to meet all contractual obligations.

3.9 Comparison of Proposals

Bids on lump sum contracts will be considered upon the basis of the lowest sum responsive and responsible bid.

3.10 Acceptance of Bids and Basis of Award

The contract will be award, if at all, to the lowest responsive, responsible bidder. No bidder may withdraw his bid after the scheduled closing time for receipt of bids, for at least sixty (60) days. Four Rivers Sanitation Authority also reserves the right to reject any or all bids.

The bidder whose proposal is accepted will be notified of the Notice of Award issued by FRSA Executive Director. The bidder shall enter into a written contract for the performance of the work and furnish the required bonds and insurance certificate within ten (10) days after written notice by FRSA's Director of Engineering.

If the bidder does not comply with the Notice of Award, FRSA will issue a Deficiency Notice. If the bidder to whom the contract is awarded refuses or neglects to execute it or fails to furnish the required bond and insurance within five (5) days after receipt of Deficiency Notice, the amount of their deposit shall be forfeited and shall be retained by FRSA for damages. No plea of mistake in the bid shall be available to the bidder for the recovery of his deposit or as a defense to any action based upon the neglect or refusal to execute a contract.

3.10.1 Evaluation of Responsiveness

The responsiveness of bidders will be judged on the basis of the completeness of the bid submitted. To be responsive, a Bid must be submitted on the forms provided as part of the Bid Documents and comply with all the requirements of the Instruction to Bidders.

3.10.2 Evaluation of Responsibility

To be judged as responsible, the bidder shall:

A. Have adequate financial resources for performance, the necessary experience, organization, technical qualifications, and facilities, or a firm commitment to obtain such by subcontracts;

B. Be able to comply with the required completion schedule for the project;

C. Have a satisfactory record of integrity, judgment, and performance, including, in particular, any prior performance on contracts from FRSA;

D. Have an adequate financial management system and audit procedures, that provide efficient and effective accountability and control of all property, funds, and assets;

E. Conform to the civil rights, equal employment opportunity and labor law requirements of the Bid Documents.

F. Have satisfactorily completed contracts of similar scope.

3.11 The Rejection of Bids

FRSA reserves the right to reject any bid if the evidence submitted in the statement of the bidder's qualifications, or if investigation of such bidder fails to satisfy FRSA that such bidder is properly qualified to carry out the obligations and to complete the work contemplated therein. Any or all proposals will be rejected if there is reason to believe that collusion exists among the bidders. Conditional bids will not be accepted. FRSA reserves the right to reject any and all bids and to accept the bid which they deem most favorable to the interest of FRSA after all Proposals have been examined and canvassed.

3.12 Insurance and Bonding

Contractor shall provide all necessary insurance and bonds required to complete the project. No more than ten (10) calendar days subsequent to FRSA's issuance of an award letter, the Contractor shall provide documentation to prove that he has obtained all required insurance and bonds. FRSA shall be the sole judge as to the acceptability of any such proof.

Contractor shall provide and maintain all insurance and bonds as required by FRSA.

3.12.1 General

The Contractor shall ensure that:

A. All insurance policies shall be specific to the project.

B. The insurance certificate shall state: This certifies that the insurance coverage meets or exceeds that required for Collection Systems Operations Facility, Capital Project No. 2217.

C. FRSA shall be named as Additional Insured in all policies; this shall include the Owners' Contractors' Protective Policy option.

D. All completed operations coverages and bonds shall remain in force for a period of two (2) years following acceptance of the Project and completed operations shall stay in force for two (2) years following completion of the Project.

3.12.2 Insurance

The Contractor shall, for the duration of the Contract and for two (2) years following project acceptance, maintain the following:

A. General Liability: $1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project or the general aggregate limit shall be twice the required occurrence limit. The Contractor shall provide "XCU" coverage.

B. Automobile Liability: $1,000,000 combined single limit per accident for bodily injury and property damage including coverages for owned, hired or non—owned vehicles, as applicable.

C. Workers' Compensation and Employers Liability: Workers' Compensation limits as required by statute and Employers Liability limits of $500,000 per accident and $500,000 per disease.

D. Umbrella: $2,000,000 per occurrence/aggregate for contracts valued at $500,000 or over, or $1,000,000 for contracts below $500,000. $10,000 is maximum allowable self-retained limit.

E. Errors and Omissions: If the Contractor performs professional services, he shall maintain errors and omissions insurance with a limit no lower than $1,000,000 for the duration of the contract.

The policies shall contain, or be endorsed to contain, the following provisions in the General Liability and Automobile Liability Coverage's:

1. Unless otherwise provided in paragraph "c" of this section, FRSA, its officers, officials, employees and volunteers shall be covered as additional insureds as respects liability arising out of activities performed by or on insured's general supervision of the Contractor, products and completed operations of the Contractor, premises owned, occupied or used by the Contractor, or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to FRSA, its officers, officials, employees, volunteers, or agents.
2. Unless otherwise provided in paragraph "c" of this section, the Contractor's insurance coverage shall be primary insurance as respects FRSA, its officers, officials, employees, volunteers, and agents. Any insurance or self-insurance maintained by FRSA, its officers, officials, employees, volunteers, or agents shall be excess of the Contractor's insurance and shall not contribute with it.
3. As an acceptable alternative to provisions "a" and "b" of this section, the Contractor may provide owner's and contractor's protective liability insurance with coverage limits, named insureds, and in conformity with all applicable specifications of this section.
4. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to FRSA, its officers, officials, employees, volunteers, or agents.
5. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
6. All Coverages — Each insurance policy required by this clause shall not be suspended, voided, canceled by either party, reduced in coverage, or in limits except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to FRSA.

3.12.3 Best's Ratings

FRSA shall be the sole judge of whether or not said insurer's ratios are satisfactory. FRSA 's decision shall be final and FRSA 's bidding procedures contain no appeal provision.

A. Alphabetical Rating: For purposes of this Request for Bids, "insurer" shall mean any surety, insurance carrier, or other organization which proposes to provide an insurance policy or bond for the Contractor. No insurer or surety rated lower than "A-, Excellent" in the current *Best's Key Rating Guide* shall be acceptable to FRSA.

B. Financial Size Rating: Provided an insurer's alphabetical rating is satisfactory, FRSA will examine said insurer's financial size rating.

1. If Best classifies the insurer XII or larger, said insurer shall be acceptable to FRSA.
2. If Best classifies the insurer as smaller than XII, but larger than VI, said insurer shall be submitted to FRSA's Director of Management Services and/or FRSA's insurance consultant for review.

   Financial Size ratings less than VII are not acceptable and will disqualify the Contractor.

3.12.4 Performance Bond and Labor & Materials Payment Bond Form

The Contractor shall provide a Performance Bond and Labor & Materials Payment Bond form acceptable to FRSA. The performance bond shall be for either 100% of the contract price or for the Contractor's unit price times the estimated number of units, as applicable.

This Request for Bids contains a Performance Bond and a Labor & Material Bond form for the Contractor's use.

If the Contractor fails to provide acceptable bonds within the specified time, he shall be in default.

3.12.5 Correction of Contractor's Insurance or Bond Deficiencies

If FRSA determines that the Contractor's insurance or bond documentation does not conform to these specifications, FRSA shall inform said Contractor of the non-conformity. If said Contractor fails to provide conforming insurance or bond documentation within five (5) calendar days of FRSA's deficiency notice, he shall be in default.

3.12.6 Indemnification Clause

Contractor shall protect, indemnify, hold and save harmless and defend FRSA, its officers, officials, employees, volunteers, and agents against any and all claims, costs, causes, actions and expenses, including but not limited to attorney's fees incurred by reason of a lawsuit or claim for compensation arising in favor of any person, including the employees, officers, independent contractors, or subcontractors of the Contractor or FRSA, on account of personal injuries or death, or damages to property occurring, growing out of, incident to, or resulting directly or indirectly from the performance by the Contractor or subcontractor, whether such loss, damage, injury or liability is contributed to by the negligence of FRSA or by premises themselves or any equipment thereon whether latent or patent, or from other causes whatsoever, except that the successful bidder shall have no liability for damages or the costs incident thereto caused by the sole negligence of FRSA.

The indemnification shall not be limited by a limitation on amount or type of damages payable by or for the Contractor or its subcontractor under any employee benefits act including, but not limited, to the Workers Compensation Act.

No inspection by FRSA, its employees, or agents shall be deemed a waiver by FRSA of full compliance with the requirements of the Contract. This indemnification shall not be limited by the required minimum insurance coverages in the Contract.

3.13 Tax Exemption

FRSA is exempt, by law, from paying bidder Federal Excise Tax and Illinois Retailers' Occupational Tax. Therefore, the bidder shall exclude those taxes from his bid. FRSA's tax exemption number is E9992-3696-06. The bidder shall include all other applicable taxes in his bid price.

Proposal

Project: **Collection Systems Operations Facility**
Structural Steel Package
Capital Project No. 2217

Location: The Operations Facility will be constructed on FRSA-owned properties north of FRSA's treatment plant (3333 Kishwaukee Street) and adjacent to Martin Road and Lyle Street.

Completion Date: December 15, 2023

Liquidated Damages: $300/ per calendar day beyond December 15, 2023

To: Board of Trustees
Four Rivers Sanitation Authority
3501 Kishwaukee Street
Rockford, IL 61109

From: _____
(Individual, Partnership or Corporation, as case may be)

_____
(Address of Individual, Partnership or Corporation)

Gentlemen:

I (We), the undersigned, hereby propose to furnish all materials, equipment, tools, services, labor, and whatever else may be required to construct and place in service the above subject Sanitary Sewer for the Four Rivers Sanitation Authority all in accordance with the plans and specifications, provided by Four Rivers Sanitation Authority. The undersigned also affirms and declares:

1. That I (we), have, examined and am (are) familiar with all the related contract documents and found that they are accurate and complete and are approved by the undersigned.
2. That I (we), have carefully examined the site of the work, and that, from my (our) investigation, has satisfied myself (ourselves) as to the nature and location of the work, the character, quality, and quantity of materials and the kind and extent of equipment and other facilities needed for the performance of the work, the general and local conditions and all difficulties to be encountered, and all other items which may, in any way, effect the work or its performance.
3. That this bid is made without any understanding, agreement or connection with any other person, firm, or corporation making a bid for the same purposes, and is in all

respects fair and without collusion or fraud; and that I (we) are not barred from bidding as a result of a bid-rigging or bid-rotating conviction.

4. That accompanying the Proposal is a Bidder's Bond in the amount specified in Article 1, Notice to Bidders, payable to the Board of Trustees of the Four Rivers Sanitation Authority, which it is agreed, shall be retained as liquidated damages by said Four Rivers Sanitation Authority if the undersigned fails to execute the Contract in conformity with the contract documents incorporated in the contract documents and furnish bond as specified, within ten (10) days after notification of the award of the contract to the undersigned.

5. The Bidder is of lawful age and that no other person, firm or corporation has any interest in this Proposal or in the Contract proposed to be entered into.

6. The Bidder is not in arrears to the Four Rivers Sanitation Authority, upon debt or contract, and is not a defaulter, as surety or otherwise, upon any obligation to the Four Rivers Sanitation Authority.

7. No officer or employee or person whose salary is payable in whole or in part by the Four Rivers Sanitation Authority is, shall be or become interested, directly or indirectly as a contracting party, partner, stockholder, surety of otherwise, in this Proposal, or in the performance of the Contract, or in the work to which it is relates, or in any portion of the profits thereof.

8. The Bidder which I represent complies with all applicable requirements of the Americans with Disabilities Act (ADA) and the Occupational Safety and Health Act (OSHA) and that if said bidder is awarded a contract, it will complete all OSHA-required or ADA-required employee and customer training, will make available all required information, and will hold harmless and indemnify the Four Rivers Sanitation Authority and the Four Rivers Sanitation Authority's representatives.

   In regard to participation in an approved Apprenticeship program, upon request, Contractor will be required to provide written proof of participation.

9. The undersigned, as Bidder, declares that he has adopted and promulgated written sexual harassment policies in accordance with Public Act 101-0221 and will make this information available upon request.

10. The undersigned, as Bidder, declares he will comply with prevailing wages in accordance with the Illinois Department of Labor Standards. The State of Illinois requires contractors and subcontractors on public works projects (including Four Rivers Sanitation Authority) to submit certified payroll reports via the State's Certified Transcript of Payroll Portal found at www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/certifiedtranscriptofpayroll.aspx.

10. The undersigned, as Bidder, declares he will comply with the Federal Drug Free Workplace Act.

12. The undersigned, as Bidder, declares he will comply with Public Act 83-1030 entitled "Steel Products Procurement Act".

13. The undersigned, as Bidder, declares he will comply with Public Act 96-929 (30 ILCS 570) regarding Illinois residents' employment.

14. The undersigned, as Bidder, declares he will comply with non-discrimination in employment in accordance with the Illinois Fair Employment Practices Commissions Rules & Regulations.

15. The undersigned, as Bidder, declares that he currently participates in an apprenticeship or training program that is registered with the United States Department of Labor's Bureau of Apprenticeship and Training or other acceptable State of Illinois Department of Labor monitored program.

In submitting this bid, it is understood that the right is reserved by the Four Rivers Sanitation Authority to reject any and all bids. It is agreed that this bid may not be withdrawn for a period of thirty (30) days from the opening thereof.

The undersigned further declares that he (they) has (have) carefully examined the following items of work and that the cost of all the work to complete this project is given in this Proposal.

Lump Sum Bid Amount

Total Amount of Lump Sum Bid, expressed in figures, for providing all materials, equipment, warranty, and labor to complete this project in conformity with all specifications in this Invitation to Bid.

$_____

Adjustment Unit Price Work

Bidder has included in the Lump Sum Bid price the cost for the quantities of work described by the Adjustment Prices at the unit price as indicated below. The Adjustment Unit Prices will apply in the event that the final measured quantities exceed the estimated quantities included in the Lump Sum Bid. A single price shall be bid for each item.

ADJUSTMENT PRICES					
No.	**Item**	**Unit**	**Unit Price**	**Amount**	**Total Price**
1	Removal of Unsuitable Soils (Section 31-2000)	CY		200	
2	Select Engineered Fill or Granular Fill to Replace Unsuitable Soils (Section 31-2000)	CY		200	

The undersigned acknowledges that he has received Addendum numbers _____, _____ _____, _____, and realizes that all Addenda are considered part of the Contract.

Date: _____

Bidder: _____ By: _____
(Printed Name of Firm) (Authorized Rep's Signature)

_____ By: _____
(Printed Street Address) (Printed Authorized Rep's Name)

_____ By: _____
(Printed City, State, Zip) (Printed Authorized Rep's Title)

_____ By: _____
(Area Code and Phone Number) (Fax Number)

_____
(Authorized Rep's Email Address)

Fair Employment Practices Affidavit of Compliance

Project: Collection System Operations Facility, Capital Project No. 2217

NOTE: THE BIDDER MUST EXECUTE THIS AFFIDAVIT AND SUBMIT IT WITH ITS SIGNED BID. THE FOUR RIVERS SANITATION AUTHORITY CANNOT ACCEPT ANY BID WHICH DOES NOT CONTAIN THIS AFFIDAVIT

_____, being first duly sworn, deposes and says that:
(Name of person making affidavit)

They are: _____ of _____
(Officer's Title) (Company Name)

that said company is and "Equal Opportunity Employer" as defined by Section 2000(e) of Chapter 21, Title 42 of the United States Code annotated and Federal Executive Orders #11375 which are incorporated herein by reference;

and that said company will comply with any and all requirements of Title 44 Admin. Code 750. APPENDIX A – Equal Opportunity Clause, Rules and Regulations, Illinois Department of Human Rights, which read as follows:

"In the event of the contractor's non-compliance with the provisions of this Equal Employment Opportunity Clause, the Illinois Human Rights Act or the Rules and Regulations of the Illinois Department of Human Rights ("Department"), the contractor may be declared ineligible for future contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations, and the contract may be cancelled or voided in whole or in part, and such other sanctions or penalties may be imposed or remedies invoked as provided by statute or regulation. During the performance to this contract, the contractor agrees as follows:

1. That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, marital status, national origin or ancestry, citizen status, age, physical or mental handicap unrelated to ability, sexual orientation, military status or an unfavorable discharge from military service; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.

2. That, if he or she hires additional employees in order to perform this contract or any portion of this contract, he or she will determine the availability (in accordance with the Department's Rules and Regulations) of minorities and women in the areas from which he or she may reasonably recruit and he or she will hire for each job classification for which employees are hired in a way that minorities and women are not underutilized.

3. That, in all solicitations or advertisements for employees placed by him or her or on his or her behalf, he or she will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, sexual orientation, marital status, national origin or ancestry, citizenship status, age, physical or mental handicap unrelated to ability, sexual orientation, military status or an unfavorable discharge from military service.

4. That he or she will send to each labor organization or representative of workers with which he or she has or is bound by a collective bargaining or other agreement or understanding, a notice advising such labor organization or representative of the contractor's obligations under the Illinois Human Rights Act and the Department's Rules and Regulations. If any labor organization or representative fails or refuses to cooperate with the contractor in his or her efforts to comply with such Act and Rules and Regulations, the contractor will promptly so notify the Department and the contracting agency and will recruit employees from other sources when necessary to fulfill its obligations under the contract.

5. That he or she will submit reports as required by the Department's Rules and Regulations, furnish all relevant information as may from time to time be requested by the Department or the contracting agency, and in all respects comply with the Illinois Human Rights Act and the Departments Rules and Regulations.

6. That he or she will permit access to all relevant books, records, accounts and work sites by personnel of the contracting agency and the Department for purposes of investigation to ascertain compliance with the Illinois Human Rights Act and the Department's Rules and Regulations.

7. That he or she will include verbatim or by reference the provisions of this clause in every subcontract awarded under which any portion of the contract obligations are undertaken or assumed, so that the provisions will be binding upon the subcontractor. In the same manner as with other provisions of this contract, the contractor will be liable for compliance with applicable provisions of this clause by such subcontractors; and further it will promptly notify the contracting agency and the Department in the event any subcontractor fails or refuses to comply with the provisions. In addition, the contractor will not utilize any subcontractor declared by the Illinois Human Rights Commission to be ineligible for contacts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.

(Source: Amended at 32 I11. Reg. 16484, effective September 23, 2008)"

IL Dept of Human Rights Registration No.: _____ Expiration Date: _____

_____
Signature

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

_____
Notary Public

Bid Bond

KNOW ALL MEN BY THESE PRESENTS, that we:

_____ (hereinafter called the Principal) and

_____ (hereinafter called the Surety)

a Corporation chartered and existing under the laws of the State of _____ with its principal offices in the City of _____ and authorized to do business in the State of Illinois are held and firmly bound onto the Four Rivers Sanitation Authority (FRSA) of Winnebago County, Illinois, in the full and just sum of: **FIVE PERCENT (5%) OF THE TOTAL BID PRICE** good lawful money of the United States of America, to be paid upon demand of the FRSA, to which payment will and truly to be made we bind ourselves, our heirs, executors, administrators, and assigns, jointly and severally and firmly by these presents.

WHEREAS, the Principal is about to submit, or has submitted to FRSA, a proposal for the Collection Systems Operations Facility project which consists of building construction, sitework, and landscaping for a new operations facility, including concrete slab-on-grade, steel frame, insulated metal wall panels, erection of previously-bid structural steel package, low slope membrane roofing, plumbing, electrical, mechanical systems, earthwork, storm sewer, sanitary sewer, watermain, PCC and HMA pavement, site lighting, and all other appurtenances as indicated in the Contract documents.

WHEREAS, the Principal desires to file this bond, in accordance with law, to accompany this Proposal.

NOW THEREFORE, The conditions of this obligation are such that if the Proposal be accepted, the Principal shall, within ten days after the date of receipt of a written notice of award of Contract, execute a Contract in accordance with the Proposal and upon the terms, conditions, and prices set forth therein, in the form and manner required by FRSA, and execute a sufficient and satisfactory Contract Performance Bond payable to said FRSA in an amount of one hundred percent (100%) of the Contract price (including alternates) in form and with security satisfactory to said FRSA, then this obligation to be void, otherwise to be and remain in full force and virtue in law; and the Surety shall, upon failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to the aforesaid FRSA, upon demand, the amount hereof in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

IN TESTIMONY THEREOF, the Principal and Surety have caused these presents to be duly signed and sealed this _____ day of _____, 20___ _____.

_____

Principal

(Seal)

By _____

Name: _____

Title: _____

Date: _____

Attest:

_____

Secretary

_____

Surety

(Seal)

By _____

Name: _____

Title: _____

Date: _____

Agreement

1. General

THIS AGREEMENT, made and concluded this _____ day of _____ _____, 2023, between the Four Rivers Sanitation Authority (FRSA), Rockford, Illinois, acting by and through the Board of Trustees, and _____, his/their executors, administrators, successors or assigns:

2. Scope of Work

WITNESSETH: That for and in consideration of the payments and agreements made in the Proposal attached hereto, to be made and performed by FRSA and according to the terms expressed in the Bond referring to these presents, the Contractor agrees with FRSA at his/their own proper cost and expense to do all the work, furnish all equipment, materials and all labor necessary to complete the work in accordance with the plans and specifications hereinafter described, and in full compliance with all of the terms of this agreement and the requirements of FRSA and its representative.

And it is also understood and agreed that the Bidding Requirements, Detailed Specifications, Contract Forms, General Conditions, General Requirements, Technical Specifications, Plans, Addenda, and provisions required by law are all essential documents of the contract, and are a part hereof, as if herein set out verbatim or as if attached, except for titles, subtitles, headings, table of contents and portions specifically excluded.

3. Contract Price

FRSA shall pay to the Contractor, and the Contractor shall accept, in full payment for the performance of this Contract, subject to any additions or deductions provided for hereby, in current funds, the Total Contract Price of _____ and 00/100 ($_____).

Payments are to be made to the Contractor in accordance with and subject to the provisions of Section 7 of this Agreement, which is a part of this Contract.

4. Bond

The Contractor has entered into and herewith tenders a bond of even date herewith, in the penal sum of _____ and 00/100 ($_____) to insure the faithful performance of this Contract, which said bond is hereby made a part of this Contract by reference.

5. Maintenance and Guarantee

The Contractor shall promptly repair, replace, restore or rebuild any imperfections that may arise and shall maintain satisfactory to FRSA all work for a period three years from the date of final acceptance of the Contract for trench settlement and for a period of two years all other work, except where periods of maintenance and guarantee are provided for. The Contractor shall, for this period, indemnify and save harmless the

FRSA, its officers and agents from any injury done to property or persons as a direct or alleged result of imperfections in the Contractors' work, and shall immediately assume and take charge of the defense of such action or suits in like manner and to all intents and purposes as if said actions and suits had been brought directly against the Contractor.

If the Contractor shall fail to repair, replace, rebuild or restore such defective or damaged work promptly after receiving notice given by FRSA, the FRSA shall have the right to have the work done by others and to call on the Contractor and his bondsman to pay the costs thereof.

6. Contract Execution

IT IS EXPRESSLY UNDERSTOOD AND AGREED that the entire improvement shall be done in a thorough and workmanlike manner, under the direction and to the satisfaction of FRSA and in full compliance with all the requirements of its representative under them. All loss or damage arising out of the nature of the work to be done, or from any detention of unforeseen obstruction or difficulty which may be encountered in the prosecution of the work, or from the action of the elements, shall be sustained by the Contractor.

The Contractor will be held responsible for all accidents, and hereby agrees to indemnify and protect FRSA from all suits, claims, and actions brought against it, and all cost, and damages which FRSA may be put to by reason of an injury or alleged injury, to the person or property of another in the execution of this contract, or the performance of the work, or in guarding the same, or for any material used in its prosecution or in its construction.

Any person employed on the work who shall refuse or neglect to obey the directions of FRSA or its representative, or who shall be deemed by FRSA to be incompetent, or who shall be guilty of any disorderly conduct, or who shall commit any trespass on any public or private property in the vicinity of the work, shall at once be removed from the work by the Contractor when so requested by FRSA.

Any request to extend the contract completion date must be considered by the Board at the Board meeting prior to the then-existing contract termination date. Any deviation from this action will result in the liquidated damage clause in the contract to be exercised.

7. Payments to Contractor

FRSA hereby covenants and agrees, in consideration of the covenants and agreements in this Contract, specified to be kept and performed by the Contractor and subject to the conditions herein contained, and if FRSA receives an acceptable invoice prior to the tenth day of the month and receives approval of the work by the FRSA's Director of Engineering, FRSA shall issue payment before the fifth day of the succeeding month. If FRSA receives an acceptable invoice on or after the tenth day of the month, FRSA shall issue payment before the fifth day of the second succeeding month.

FRSA reserves the right at all times to refuse to issue payment in case the Contractor has neglected or failed to pay any subcontractors, workmen or employee on the work.

8. Subcontracts

No part of the work herein provided for shall be sublet or subcontracted without the express consent of FRSA, to be entered in the records, and in no case shall consent relieve the Contractor from the obligation herein entered into, or change the terms of this Agreement.

9. Contractor's Responsibility

This Contract shall extend to and be binding upon the successors and assigns, and upon the heirs, administrators, executors, and legal representatives of the Contractor.

In consideration of and to induce the award of this Contract to him, the Contractor represents and warrants: that he is not in arrears to FRSA upon debt of the Contract and that he is not a defaulter, as surety, contractor or otherwise; that he is financially solvent and sufficiently experienced and competent to perform the work; that the work can be performed as called for by the Contract; that the facts stated in his proposal and the information given by him is true and correct in all respects, and that he is fully informed regarding all the conditions affecting the work to be done and labor and materials to be furnished for the completion of this Contract and that his information was secured by personal investigation and research.

The Contractor shall pay not less than the prevailing wage rate as determined by the Department of Labor, to all laborers, workmen and mechanics performing work under this Contract. Contractor shall comply with current revisions of the wage standards; as required by law. The Contractor shall be responsible for verifying the prevailing wages each month and notifying all subcontractors of the appropriate monthly rates. The State of Illinois requires contractors and subcontractors on FRSA projects to submit certified payroll reports via the State's Certified Transcript of Payroll Portal currently found at: https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/certifiedtranscriptofpayroll.aspx. The Contractor is responsible for verifying current website.

In regard to nondiscrimination in employment, Contractor will be required to comply with the Illinois Fair Employment Practices Commission's Rules and Regulations as provided herein.

The Contractor shall comply with the American Disabilities Act of 1990 (ADA). The Contractor will hold harmless and indemnify FRSA and their representatives from all:

(a) suits, claims, or actions;
(b) costs, either for defense (including but not limited to reasonable attorney's fees and expert witness fees) or for settlement, and;
(c) damages of any kind (including but not limited to actual, punitive, and compensatory damages)

relating in any way to or arising out of the ADA, to which said firm is exposed or which it incurs in the execution of the contract.

Contractor shall also comply with Public Act 101-0221, which requires any party to a contract to adopt and enforce a written policy regarding sexual harassment that includes, as a minimum, the following information:

(a) the illegality of sexual harassment
(b) the definition of sexual harassment under Illinois State law;
(c) a description of sexual harassment, utilizing examples;
(d) my (our) organization's internal complaint process including penalties;
(e) through the Illinois Department of Human Rights and the Illinois Human Rights Commission;
(f) directions on how to contact the Department and the Commission; and
(g) protection against retaliation as provided by Section 6-101 of the Illinois Human Rights Act.

Upon request this information will be provided to the Illinois Department of Human Rights. Upon FRSA award of a contract, FRSA will be provided this information described no more than ten working days after FRSA issues its award notification.

The Contractor shall comply with Public Act 96-929 (30 ILCS 570) which provides that Illinois residents be employed on Illinois public works projects, provided there has been a period of excessive unemployment (5%) in the State of Illinois as defined in the Act; and further, that Illinois workers are available and capable of performing the particular type work involved.

The Contractor shall comply with all rules and regulations of OSHA during the execution of this Contract.

The Contractor shall comply with the Federal Drug Free Workplace Act.

The Steel Products Procurement Act, Illinois Public Act 83-1030, requires that steel products used or supplied in performance of this Contract or subcontract shall be manufactured or produced in the United States with three exceptions, as explained in the Instructions to Bidders.

The Contractor shall comply with Public Act 96-1416 regarding the disposal of CCDD and uncontaminated soil at CCDD fill sites as explained in the Instructions to Bidders.

10. Time

Work under this Agreement shall be commenced upon written Notice to Proceed. The completion date for this project shall be December 15, 2023.

11. Liquidated Damages

The amount of liquidated damages shall be $300.00 per calendar day.

12. Counterparts

This Agreement may be executed and recorded in counterparts, each of which shall be deemed an original and all of which, when taken together, shall constitute one and the same instrument. The Parties hereby acknowledge and agree that facsimile signatures or signatures transmitted by electronic mail in so-called “pdf” format shall be legal and binding and shall have the same full force and effect as if an original of this

Agreement had been delivered. Each of the parties (a) intend to be bound by the signatures on any document sent by facsimile or electronic mail, (b) are aware that the other party will rely on such signatures, and (c) hereby waive any defenses to the enforcement of the terms of this Agreement based on the foregoing forms of signature.

13. Seals

IN WITNESS WHEREOF, the parties have hereunto set their hands and seals, and such of them as are corporations have caused these presents to be signed by their duly authorized officers.

Four Rivers Sanitation Authority
Winnebago County, Illinois

(Seal)

By _____
President, Board of Trustees

ATTEST: _____
Clerk of the Board

Contractor

By _____
Contractor's Officer

(Corporate Seal)

Name: _____
Title: _____
Date:

_____

ATTEST: _____

Labor & Material Payment Bond

TO: _____Contractor Name

_____Contractor City, State

KNOW ALL MEN BY THESE PRESENTS

That _____(Contractor)

as Principal, and _____

a corporation of the State of _____ as Surety, are held and firmly bound unto the Four Rivers Sanitation Authority, as Obligee, for the use and benefit of claimants as hereinafter defined in the amount of

_____Dollars ($_____), for the payment where of Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated _____20___ Entered into a Contract with Obligee for _____ in accordance with contract documents prepared by the Four Rivers Sanitation Authority which Contract is by reference made a part hereof, and is hereinafter referred to as “the Contract”.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if Principal shall promptly pay for all laborers, workers and mechanics engaged in the work under the Contract, and not less than the general prevailing rate of hourly wages of a similar character in the locality in which the work is performed, as determined by the State of Illinois Department of Labor pursuant to the Illinois Compiled Statutes 280 ILCS 130 / 1-12 et.seq. and for all material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect.

1. A claimant is deemed as any person, firm, or corporation having contracts with the Principal or with any of Principal’s subcontractors for labor or materials furnished in the performance of the Contract on account of which this Bond is given.
2. Nothing in this Bond contained shall be taken to make the Obligee liable to any subcontractor, material man or laborer, or to any other person to any greater extent than it would have been liable prior to the enactment of The Public Construction Bond Act, approved June 20, 1931, as amended; provided further, that any person having a claim for labor and materials furnished in the performance of the Contract shall have no right of action unless he shall have filed a verified notice of such claim with the Obligee within 180 days after the date of the last item of work or the furnishing of the last item of materials, which claim shall have been verified and shall contain the name and address of the claimant, the business address of the claimant within the State of Illinois, if any, or if the claimant be a foreign corporation having no place of business

within the State the principal place of business of the corporation, and in all cases of partnership the names and residences of each of the partners, the name of the Contractor for the Obligee, the name of the person, firm or corporation by whom the claimant was employed or to whom such claimant furnished materials, the amount of the claim and a brief description of the public improvement for the construction or installation of which the contract is to be performed. No defect in the notice herein provided for shall deprive the claimant of its right of action under the terms and provisions of this Bond unless it shall affirmatively appear that such defect has prejudiced the rights of an interested party asserting the same.

3. No action shall be brought on this Bond until the expiration of 120 days after the date of the last item of work or of the furnishing of the last item of material except in cases where the final settlement between Obligee and the Contractor shall have been made prior to the expiration of the 120 day period, in which case action may be taken immediately following such final settlement; nor shall any action of any kind be brought later than 6 months after the acceptance by the Obligee of the work. Such suit shall be brought only in the circuit court of this State in the judicial district in which the Contract is to be performed.

4. Surety hereby waives notice of any changes in the Contract, including extensions of time for the performance thereof.

5. The amount of this Bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder.

6. The Principal and Surety shall be liable for any attorneys' fees, engineering costs, or court costs incurred by the Obligee relative to claims made against this Bond.

Signed and Sealed this _____day of _____, 20___.

CONTRACTOR

_____
Contractor Firm Name

By: _____
Signature

_____
Printed Name

_____
Title

SURETY

By: _____
Attorney-in-Fact Signature

_____
Printed Name

_____
Resident Agent

ATTEST:

_____
Corporate Secretary (Corporations only)

Performance Bond

KNOW ALL MEN BY THESE PRESENTS, that WHEREAS, the Four Rivers Sanitation Authority has awarded to: _____ hereinafter designated as the "Principal", a contract, dated, _____, for the Four Rivers Sanitation Authority.

WHEREAS, said Principal is required under the terms of said Contract to furnish a bond for the faithful performance of said Contract (the "Bond");

NOW, THEREFORE, we the Principal and _____, as Surety, are firmly bound unto the Four Rivers Sanitation Authority in the penal sum of _____ Dollars ($_____) lawful money of the United States for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally firmly by these presents for a performance bond. The conditions of this obligation is such that if the said Principal does well and faithfully performs all the conditions and covenants of said Contract, according to the true intent and meaning thereof, upon its part to be kept and performed, then the above obligation is to be null and void, otherwise to remain in full force and effect.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the above bounden Principal, its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the said Contract, including the provisions for liquidated damages in the said Contract, any changes, additions or alterations thereof made as therein provided, on its part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the Four Rivers Sanitation Authority, its officers and agents, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect. And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the specifications accompanying the same and no inadvertent overpayment of progress payments shall in any way affect its obligations on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the specifications or of any inadvertent overpayment of progress payments. The Four Rivers Sanitation Authority shall be named as beneficiary on this Performance Bond.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their seal this _____day of _____, 20_____, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR	**SURETY**
_____	
Contractor Firm Name	
By: _____	By: _____
Signature	Attorney-in-Fact Signature
_____	_____
Printed Name	Printed Name
_____	_____
Title	Resident Agent

ATTEST:

_____

Corporate Secretary (Corporations only)

Section II

Project Manual

PROJECT MANUAL

New Collection Systems Operations Facility

Four Rivers Sanitation Authority

Rockford, IL

FRSA Capital Project No. 2217
BA Project No. 2021-13

Date 1-17-2023

BLAKEMORE ARCHITECTS

400 North First Street
Rockford, IL. 61107
Phone 815-227-0023
www.blakemore-architects.com

SECTION 00 0101
PROJECT TITLE PAGE

PROJECT MANUAL

FOR
COLLECTIONS SYSTEMS OPERATIONS FACILITY - GENERAL CONSTRUCTION BID
CAPITAL PROJECT NO. 2217

FOUR RIVERS SANITATION AUTHORITY
3501 KISHWAUKEE STREET
ROCKFORD , ILLINOIS 61109

DATE: JANUARY 17, 2023

PREPARED BY:

BLAKEMORE ARCHITECTS, INC
400 N. FIRST STREET
ROCKFORD, ILLINOIS 61107
815-227-0023
WWW.BLAKEMORE-ARCHITECTS.COM

END OF PROJECT TITLE PAGE

SECTION 00 0102

PROJECT INFORMATION

PART 1 GENERAL

1.01 PROJECT IDENTIFICATION

A. Project Name: Collections Systems Operations Facility - General Construction Bid, located at: 3501 Kishwaukee Street, Rockford, Illinois

B. Blakemore Architects's Project Number: 2022-13.

C. Four Rivers Sanitation Authority (FRSA)'s Capital Project Number: 2217.

D. The Owner, hereinafter referred to as Owner: Four Rivers Sanitation Authority
   1. Sales Tax Exemption Number: E999223696.

1.02 NOTICE TO PROSPECTIVE BIDDERS

A. These documents constitute an Invitation to Bid to and request for qualifications from General Contractors for the construction of the project described below.

B. Notice Date: 01-17-2023.

1.03 PROJECT DESCRIPTION

A. Summary Project Description: Bids for General Construction, including Site work and Landscaping. This bid package to include erection of previously released structural steel package for new building along with items indicated in drawings for scope .

1.04 PROJECT CONSULTANTS

A. Architect
   1. Blakemore Architects, Inc
      a. 400 North First Street
      b. Rockford, Illinois 61107
      c. Brian Blakemore-Principal in charge

B. Structural Engineer
   1. Core4 Engineering
      a. 12308 North Corporate Parkway
      b. Suite 300 Mequon, WI 53092
      c. 1-262-236-9372
      d. Brian Hess- Project Manager

C. MEP Engineer: Legacy Designs.
   1. Address: 6116 mulford Village Dr.
   2. City, State, Zip: Rockford, IL 61107.
   3. Phone/Fax: 815-484-4708.
   4. E-mail: frank@legacydesigns.net.

D. Landscape Architect: Matt Adas - Arc Design Resources.
   1. Address: 5291 Zenith Parkway.
   2. City, State, Zip: Loves Park, Illinois 61111.
   3. Phone/Fax: 815484-4300.
   4. E-mail: madas@arcdesign.com.

E. Stormwater Consulting Engineer: Andrew Reeter - Fehr Graham
   1. Address: 200 Pairie Street, Suite 208
   2. City,State, Zip: Rockford, Illinois 61107
   3. Phone: 815-394-4700
   4. Email: areeter@fehrgraham.com

1.05 PROCUREMENT TIMETABLE

A. Mandatory Pre-Bid conference will be held on: Wednesday February 1, 2023 at 10:00 am at Four Rivers Sanitary Authority's Administartion Building at 3501 Kishwaukee Street, Rockford,

Illinpois. Bids will only be accepted from General Contractors who are in attendance at the Pre-bid conference.

B. Last Request for Information Due: 5 days prior to due date of bids (February 10, 2023).

C. Last Addendum (if necessary) will be issued no later than 3 business days prior to due date of bids (February 17, 2023).

D. Bid Due Date: February 17, 2023, before 2:00 PM local time.

E. Bid Opening: Same day, 2:00 pm local time.

F. Bids May Not Be Withdrawn Until: 60 days after due date.

G. Contract Time: To be stated in bid documents.

H. Desired Final Completion Date: December 1, 2023.

I. The Owner reserves the right to reject and or all bids received for this project. Any changes to the procurement timetable will be communicated by the Owner via Addendum."

1.06 PROCUREMENT DOCUMENTS

A. Documents may be procured from Four Rivers Sanitaztion Authority

B. Documents may be viewed at:
   1. Northern Illinois Building Contractors Association at 1111 S. Alpine Road in Rockford, Illinois.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 00 2113

INSTRUCTIONS TO BIDDERS

SUMMARY

1.01 THE INSTRUCTIONS IN THIS DOCUMENT AMEND OR SUPPLEMENT THE INSTRUCTIONS TO BIDDERS AND OTHER PROVISIONS OF THE BIDDING AND CONTRACT DOCUMENTS.

1.02 DOCUMENT INCLUDES

A. Invitation
   1. Bid Submission
   2. Work Identified in the Contract Documents
   3. Contract Time

B. Bid Documents and Contract Documents
   1. Definitions
   2. Contract Documents Identification
   3. Inquiries/Addenda

C. Qualifications
   1. Prequalification
   2. Subcontractors/Suppliers/Others

D. Bid Submission
   1. Bid Depository
   2. Submission Procedure

E. Offer Acceptance/Rejection
   1. Duration of Offer
   2. Acceptance of Offer

1.03 RELATED DOCUMENTS

INVITATION

2.01 BID SUBMISSION

A. Bids signed, executed, and dated will be received at the office of Four Rivers Sanitation Authority (FRSA) at 3501 Kishwaukee Street, Rockford, Illinois

B. Offers will be opened publicly immediately after the time for receipt of bids.

2.02 INTENT

A. The intent of this Bid request is to obtain an offer to perform work to complete project named Collections Systems Operations Facility - General Construction Bid for a Stipulated Sum contract, in accordance with Contract Documents.

2.03 WORK IDENTIFIED IN THE CONTRACT DOCUMENTS

A. Work of this proposed Contract comprises building construction, site development, and Landscaping and , including concrete slab on grade, steel frame, insulated metal wall panels, erection of previously bid steel package, low slope membrane roofing on steel structure, plumbing, electrical, and mechanical systems. Contractor to coordinate with Owner (FRSA) for work.

B. Permit Information:
   1. City Building Permit: Owner submitted application to City, General Contractor responsibility for Permit fees.
   2. IEPA NPDES Construction General Permit: Owner submitted Notice of Intent to IEPA, all fees Owner responsibility
   3. City of Rockford Stormwater Management Permit: Owner submitted to City, all fees Owner responsibility
   4. IEPA Public Water Permit: Owner will submit to City of Rockford, all fees Owner responsibility

5. FRSA Industrial/Commercial Service Connection Permit: Contractor responsibility, fees included in Contractor's bid

2.04 CONTRACT TIME

A. The bidder, in submitting an offer, accepts the Contract Time period stated by FRSA for performing the Work. The completion date in the Agreement shall be December 1, 2023 .

BID DOCUMENTS AND CONTRACT DOCUMENTS

3.01 DEFINITIONS

A. Bid Documents: Contract Documents supplemented with Invitation To Bid and Instructions to Bidders.

B. Bid, Offer, or Bidding: Act of submitting an offer under seal.

3.02 CONTRACT DOCUMENTS IDENTIFICATION

A. The Contract Documents are identified as Project Number BA 2022-13, as prepared by Blakemore Architects who is located at 400 First Street, Rockford, Illinois 61107, and with contents as identified in the Project Manual and Drawings.

3.03 AVAILABILITY

A. One sets of Bid Documents can be obtained by bidders upon receipt of a deposit, by cash, in the amount of $50.00 for one set. Only Four Rivers Sanitation Authority will distribute bid documents.

B. Bid Documents are made available only for the purpose of obtaining offers for this project. Their use does not grant a license for other purposes.

3.04 EXAMINATION

A. Bid documents may be obtained at a cost of $50.00 per set (non-refundable) by contacting the FRSA Engineering Department at 815-387-7660.

B. Bid Documents are on display at the offices of the following construction plan rooms:
   1. Northern Illinois Building Contractors Association-1111 S. Alpine Street, Rockford, Illinois.
   2. Four Rivers Sanitation Authority, 3501 Kishwaukee Street, Rockford, Illinois by appointment.

C. Upon receipt of Bid Documents verify that documents are complete. Notify FRSA who will then notify Blakemore Architects should the documents be incomplete.

D. Immediately notify FRSA who will then notify Blakemore Architects upon finding discrepancies or omissions in the Bid Documents.

3.05 INQUIRIES/ADDENDA

A. Direct questions to Tyler Nelson at FRSA, telephone 815-387-7660 or email: TNelson@Fourrivers.illinois.gov

B. Addenda may be issued during the bidding period. All Addenda become part of the Contract Documents. Include resultant costs in the Bid Amount.

C. Verbal answers are not binding on any party.

D. Carification requests from bidders will be accepted up to 5 business days prior to due date of bids (or February 10, 2023). Final Addendum (as necessary) will be issued no later than 3 business days prior to due date of bids (or February 14, 2023).

QUALIFICATIONS

4.01 EVIDENCE OF QUALIFICATIONS

A. To demonstrate qualification for performing the Work of this Contract, bidders may be requested to submit written evidence of financial position, license to perform work in the State.

BID SUBMISSION

BID ENCLOSURES/REQUIREMENTS

OFFER ACCEPTANCE/REJECTION

7.01 DURATION OF OFFER

A. Bids shall remain open to acceptance and shall be irrevocable for a period of thirty (30) days after the bid closing date.

7.02 ACCEPTANCE OF OFFER

A. Owner reserves the right to accept or reject any or all offers.

B. After acceptance by Owner, Blakemore Architects on behalf of Owner, will issue to the successful bidder, a written Bid Acceptance.

END OF INSTRUCTIONS TO BIDDERS

1997 EDITION

AIA DOCUMENT A701-1997

Instructions to Bidders

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

TABLE OF ARTICLES

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ARTICLE 1 DEFINITIONS

1.1 Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement or Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders, the bid form, and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications and all Addenda issued prior to execution of the Contract.

1.2 Definitions set forth in the General Conditions of the Contract for Construction, AIA Document A201, or in other Contract Documents are applicable to the Bidding Documents.

1.3 Addenda are written or graphic instruments issued by the Architect prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids.

1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment or services or a portion of the Work as described in the Bidding Documents.

1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

2.1 The Bidder by making a Bid represents that:

2.1.1 The Bidder has read and understands the Bidding Documents or Contract Documents, to the extent that such documentation relates to the Work for which the Bid is submitted, and for other portions of the Project, if any, being bid concurrently or presently under construction.

2.1.2 The Bid is made in compliance with the Bidding Documents.

2.1.3 The Bidder has visited the site, become familiar with local conditions under which the Work is to be performed and has correlated the Bidder's personal observations with the requirements of the proposed Contract Documents.

2.1.4 The Bid is based upon the materials, equipment and systems required by the Bidding Documents without exception.

ARTICLE 3 BIDDING DOCUMENTS

3.1 COPIES

3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Advertisement or Invitation to Bid in the number and for the deposit sum, if any, stated therein. The deposit will be refunded to Bidders who submit a bona fide Bid and return the Bidding Documents in good condition within ten days after receipt of Bids. The cost of replacement of missing or damaged documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the Bidding Documents and the Bidder's deposit will be refunded.

3.1.2 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the Advertisement or Invitation to Bid, or in supplementary instructions to bidders.

3.1.3 Bidders shall use complete sets of Bidding Documents in preparing Bids; neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

3.1.4 The Owner and Architect may make copies of the Bidding Documents available on the above terms for the purpose of obtaining Bids on the Work. No license or grant of use is conferred by issuance of copies of the Bidding Documents.

3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

3.2.1 The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted, shall examine the site and local conditions, and shall at once report to the Architect errors, inconsistencies or ambiguities discovered.

3.2.2 Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request which shall reach the Architect at least seven days prior to the date for receipt of Bids.

3.2.3 Interpretations, corrections and changes of the Bidding Documents will be made by Addendum. Interpretations, corrections and changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon them.

3.3 SUBSTITUTIONS

3.3.1 The materials, products and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution.

3.3.2 No substitution will be considered prior to receipt of Bids unless written request for approval has been received by the Architect at least ten days prior to the date for receipt of Bids. Such requests shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for an evaluation. A statement setting forth changes in other materials, equipment or other portions of the Work, including changes in the work of other contracts that incorporation of the proposed substitution would require, shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

3.3.3 If the Architect approves a proposed substitution prior to receipt of Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

3.3.4 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

3.4 ADDENDA

3.4.1 Addenda will be transmitted to all who are known by the issuing office to have received a complete set of Bidding Documents.

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

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

3.4.4 Each Bidder shall ascertain prior to submitting a Bid that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

4.1 PREPARATION OF BIDS

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

4.1.2 All blanks on the bid form shall be legibly executed in a non-erasable medium.

4.1.3 Sums shall be expressed in both words and figures. In case of discrepancy, the amount written in words shall govern.

4.1.4 Interlineations, alterations and erasures must be initialed by the signer of the Bid.

4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change."

4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall make no additional stipulations on the bid form nor qualify the Bid in any other manner.

4.1.7 Each copy of the Bid shall state the legal name of the Bidder and the nature of legal form of the Bidder. The Bidder shall provide evidence of legal authority to perform within the jurisdiction of the Work. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.

4.2 BID SECURITY

4.2.1 Each Bid shall be accompanied by a bid security in the form and amount required if so stipulated in the Instructions to Bidders. The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and will, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. The amount of the bid security shall not be forfeited to the Owner in the event the Owner fails to comply with Paragraph 6.2.

4.2.2 If a surety bond is required, it shall be written on AIA Document A310, Bid Bond, unless otherwise provided in the Bidding Documents, and the attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of the power of attorney.

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

4.3 SUBMISSION OF BIDS

4.3.1 All copies of the Bid, the bid security, if any, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

4.3.2 Bids shall be deposited at the designated location prior to the time and date for receipt of Bids. Bids received after the time and date for receipt of Bids will be returned unopened.

4.3.3 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

4.3.4 Oral, telephonic, telegraphic, facsimile or other electronically transmitted bids will not be considered.

4.4 MODIFICATION OR WITHDRAWAL OF BID

4.4.1 A Bid may not be modified, withdrawn or canceled by the Bidder during the stipulated time period following the time and date designated for the receipt of Bids, and each Bidder so agrees in submitting a Bid.

4.4.2 Prior to the time and date designated for receipt of Bids, a Bid submitted may be modified or withdrawn by notice to the party receiving Bids at the place designated for receipt of Bids. Such notice shall be in writing over the signature of the Bidder. Written confirmation over the signature of the Bidder shall be received, and date- and time-stamped by the receiving party on or before the date and time set for receipt of Bids. A change shall be so worded as not to reveal the amount of the original Bid.

4.4.3 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.

4.4.4 Bid security, if required, shall be in an amount sufficient for the Bid as resubmitted.

ARTICLE 5 CONSIDERATION OF BIDS

5.1 OPENING OF BIDS

At the discretion of the Owner, if stipulated in the Advertisement or Invitation to Bid, the properly identified Bids received on time will be publicly opened and will be read aloud. An abstract of the Bids may be made available to Bidders.

5.2 REJECTION OF BIDS

The Owner shall have the right to reject any or all Bids. A Bid not accompanied by a required bid security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or irregular is subject to rejection.

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5.3 ACCEPTANCE OF BID (AWARD)

5.3.1 It is the intent of the Owner to award a Contract to the lowest qualified Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's own best interests.

5.3.2 The Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the low Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

6.1 CONTRACTOR'S QUALIFICATION STATEMENT

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request, a properly executed AIA Document A305, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted as a prerequisite to the issuance of Bidding Documents.

6.2 OWNER'S FINANCIAL CAPABILITY

The Owner shall, at the request of the Bidder to whom award of a Contract is under consideration and no later than seven days prior to the expiration of the time for withdrawal of Bids, furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. Unless such reasonable evidence is furnished, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

6.3 SUBMITTALS

6.3.1 The Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, after notification of selection for the award of a Contract, furnish to the Owner through the Architect in writing:

.1 a designation of the Work to be performed with the Bidder's own forces;

.2 names of the manufacturers, products, and the suppliers of principal items or systems of materials and equipment proposed for the Work; and

.3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder in writing if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, (1) withdraw the Bid or (2) submit an acceptable substitute person or entity with an adjustment in the Base Bid or Alternate Bid to cover the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

7.1 BOND REQUIREMENTS

7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Bonds may be secured through the Bidder's usual sources.

7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

7.1.3 If the Owner requires that bonds be secured from other than the Bidder's usual sources, changes in cost will be adjusted as provided in the Contract Documents.

7.2 TIME OF DELIVERY AND FORM OF BONDS

7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to be commenced prior thereto in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Subparagraph 7.2.1.

7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond. Both bonds shall be written in the amount of the Contract Sum.

7.2.3 The bonds shall be dated on or after the date of the Contract.

7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

ARTICLE 8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on AIA Document A101, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment Is a Stipulated Sum.

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AIA DOCUMENT A701-1997
INSTRUCTIONS TO BIDDERS

The American Institute
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1735 New York Avenue, N.W.
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9/97

SECTION 00 3100

AVAILABLE PROJECT INFORMATION

PART 1 GENERAL

1.01 EXISTING CONDITIONS

A. Certain information relating to existing surface and subsurface conditions and structures is available to bidders but will not be part of the Contract Documents, as follows:

B. Geotechnical Report: Geocon Project No. 22-G0297, dated 2-17-2022.

C. Steel Shop Drawings: Previously Issued Steel Package Shop Drawings For Review Only. For use by General Contractors in obtaining steel erection bids. See attached link for access to those drawings:
https://www.dropbox.com/sh/ahq9t2q2skv2tdg/AABqX7WaMtFjBDCDsTJPsdEua?dl=0

1.02 PRELIMINARY DATA

A. Certain preliminary investigations and studies made by the Owner are available to the bidders but will not be part of Contract Documents, as follows:
   1. Steel Package Shop Drawings for use in bidding the erection portion of the project to be part of the GC's bid under this bid.

1.03 PERMITS

A. Owner has obtained the following permits and/or approvals that are required to be secured prior to commencement of construction work on this project:
   1. Zoning Board of Appeals approvals.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

3.01 OBTAINMENT OF PERMITS

A. Contractor to obtain the following required permits, at no cost to Owner:
   1. Building Permit for all trades.

EXISTING REPORTS AND SURVEYS

4.01 SUBSURFACE INVESTIGATION REPORT

A. A copy of a geotechnical report (Geocon), project number 22-G0297, dated Feb. 17, 2022) with respect to the building site is included with this document:

B. This report, by its nature, cannot reveal all conditions that exist on the site. Should subsurface conditions be found to vary substantially from this report, changes in the design and construction of foundations will be made, with resulting credits or expenditures to the Contract Sum accruing to the Owner.
   1. If required that work to remove the unsuitable material will be paid for at a per-CY price as requested by FRSA..

END OF SECTION

GEOCON
PROFESSIONAL SERVICES

February 17, 2022

Mr. Tyler Nelson
Senior Civil Engineer/Project Manager
Four Rivers Sanitation Authority
3333 Kishwaukee St
Rockford, IL 61109

Subject: Geotechnical Engineering Report
Proposed Collection System Facility
Four Rivers Sanitation Authority
NEC Blair Street and Martin Road
Rockford, Illinois
GEOCON Project No. 22-G0297

Dear Mr. Nelson:

Pursuant to our proposal for geotechnical engineering services, we have completed a subsurface exploration and geotechnical analyses for the above referenced project. This Geotechnical Engineering Report includes our findings and recommendations for the proposed project referenced above.

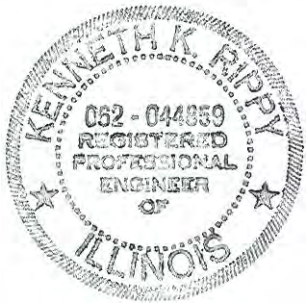
GEOCON Professional Services, Inc. (GEOCON) appreciates the opportunity to be of service during this phase of the project. If there are any questions or comments you may have regarding the contents of this report, or if we may be of any further service, please contact us at your convenience.

Sincerely,

GEOCON Professional Services, LLC.

Joe Abu-Bakr, EIT
Project Engineer

Kenneth K. Rippy, PE
Geotechnical Engineer



GEOCON
PROFESSIONAL SERVICES

GEOTECHNICAL ENGINEERING REPORT

Proposed Collection System Facility
Four Rivers Sanitation Authority
NEC Blair Street and Martin Road
Rockford, Illinois

Mr. Tyler Nelson
Senior Civil Engineer/Project Manager
Four Rivers Sanitation Authority
3333 Kishwaukee St
Rockford, IL 61109

Prepared by:
GEOCON Professional Services, LLC.
9370 West Laraway Road, Suite D
Frankfort, Illinois 60423

February 17, 2022

GEOCON Project No. 22-G0297

TABLE OF CONTENTS

GEOTECHNICAL ENGINEERING REPORT
Proposed Collection System Facility
Four Rivers Sanitation Authority
NEC of Blair Street and Martin Road
Rockford, Illinois

INTRODUCTION

This report presents the results of the subsurface exploration for the Proposed Collection System Facility to be constructed on previously developed property located in the northeast corner of Blair Street and Martin Road, in Rockford, Illinois. The purpose of this report was to determine and evaluate the subsurface conditions existing at the subject site, and to establish related geotechnical parameters to be utilized for the economical design and construction of the foundations for this project.

Authorization to perform this subsurface exploration and analysis was provided in the form of Purchase Order No. 82584, dated January 21, 2022. The scope and conditions for performance of the work were provided in GEOCON Proposal No 21-P020, dated January 14, 2022.

SITE AND PROJECT DESCRIPTION

The Proposed Collection System Facility will be constructed on vacant, previously developed property located north of Martin Road, east of Blair Street, west of Lyle Street and south of Barry Road. The property was previously developed with single family homes that have been demolished. No information was made available regarding underground demolition of the former structures and related backfill, therefore it is assumed the work was done in an uncontrolled manner. Surface topography generally slopes down to the south towards the Rock River with surface elevations at the boring locations ranging from El. 721.2 feet at SB-1, to El. 727.1 feet at SB-3.

It is understood the proposed project will include a 53,000 SF red iron utility building with concrete slab on grade floor supported on spread footings, a future fueling station, wash bay and parking areas.

Gravity loads on columns are as follows:

- Interior columns range from 124k to 165k
- Exterior columns range from 25k to 42k

FFE for the utility building will be El. 726.50 feet, indicating that up to about 4 feet of fill will be required to prepare the building pad for construction.

SUBSURFACE EXPLORATION

The scope of the exploration, including the number, location, and depth of the borings, was determined by GEOCON in consultation with the client. Eight (8) borings extending to 20 feet were advanced for the project at the approximate locations shown on the Boring Location Diagram included in the Appendix. The boring locations were staked in the field by the client prior to drilling and surface elevations noted on the logs were provided. After completion of the borings, the holes were backfilled with soil cuttings and patched with like materials as encountered at the boring.

For safety reasons, the boreholes were not allowed to remain open and precluded the collection of delayed water readings.

Drilling and Sampling Procedures

The soil borings were performed with a truck mounted drilling rig equipped with a rotary head. Conventional, continuous flight, hollow-stem augers were used to advance the borings with

representative samples obtained in each boring employing split-barrel sampling techniques in accordance with ASTM Procedure D-1586. Soil samples were secured at 2.5-foot intervals in the upper 15-feet, followed by 5-foot interval sampling.

The Standard Penetration Test (SPT) is defined as the number of blows required to advance a 2-inch O.D., split-barrel sampler a distance of one foot by a 140-pound hammer falling 30 inches, commonly described as the N-value. These sampler resistances provide a useful indication of the consistency or relative density of most soil deposits and are reported on the boring logs presented in the Appendix. Samples of cohesive soils obtained from the borings were tested with a calibrated hand penetrometer to aid in evaluating the soil strength characteristics. The results from this testing is tabulated on the boring logs.

Water level observations were made during drilling operations and upon completion and of the borings. This data is noted on the boring logs and within the *Groundwater Conditions* section.

It should be noted that it is difficult to determine the stratigraphy the upper 2 to 3 feet of the profile from soil borings due to the size of the bore hole, about 6 inches in diameter, and intermittent sample intervals. Further, the split spoon sampler tends to push through softer soils such as fill or topsoil, resulting in little or no sample recovery from these soils. It is recommended that shallow test pits be excavated to better define the exact depth of topsoil or fill if such information is required prior to construction.

Laboratory Tests

Additional characteristics of the foundation materials were determined in the laboratory to provide data on which to classify and estimate the engineering properties of the subsurface soil deposits encountered in the borings. All samples were visually classified by the geotechnical engineer according to the Unified Soil Classification System (ASTM D-2488). An explanation of the symbols used in this system is included in the Appendix.

Representative samples were tested in the laboratory to determine the natural moisture content of the soils. All moisture contents are expressed as a percentage of the dry weight of soil. Representative samples of the cohesive soils encountered in the borings were tested in the laboratory with a calibrated RIMAC spring tester to determine the approximate unconfined compressive strength of the soil samples.

The laboratory testing program selected for this project is intended to assist with determination of soil classification as well as strength and deformation characteristics of the subsurface soil deposits that will provide foundation support for the proposed structures. All laboratory testing was performed in general accordance with the respective ASTM Methods, as applicable, and the results are included on the boring logs included in the Appendix. Unless notified to the contrary, all samples will be disposed of after one month.

SOIL CONDITIONS

The types of materials encountered at the test boring locations are described on the Soil Boring Logs. The lines delineating the changes in strata on the logs represent an approximate boundary between the various soil classifications. It must be recognized that the soil descriptions are considered representative for the specific test hole location, but the variations may occur between the sampling intervals and boring locations. A summary of the major soil profile components is described in the following paragraphs. A more detailed description and supporting data for each boring location can be found on the individual boring logs.

Surface conditions at the borings consisted of dark brown to black sandy topsoil extending to a depth of about 3.5 feet. The black sandy topsoil can be described as possible fill or fill, as evidenced by the presence of glass observed in the samples collected from SB-5 and SB-7. The sandy topsoil was described as very loose to dense with N values ranging from 3 to 30 blows per foot, moisture contents ranging from 6.3 to 23.8 percent and organic contents ranging from 2.3 to 6.8 percent. Note the organic content tests were performed at a depth of about 2 feet below grade, expect higher organic contents nearer the surface. Also note concrete debris was encountered in the upper 12 inches of the profile at SB-3, likely originating from the demolition process of the former houses located on the site.

Brown fine sand was encountered below a depth of about 3.5 feet, and the stratum extended to the boring termination depth, 20 feet below grade. The sand was described as loose to medium dense with N values ranging from 3 to 27 blows per foot with average N values in the upper 10 feet of the soil profile ranging from 6 blows per foot at SB-8, to 14 blows per foot at SB-7. Moisture contents of samples of the brown fine sand ranged from 1.2 to 12.9 percent.

Further information regarding the soil conditions can be found on the boring logs included in the Appendix.

GROUNDWATER CONDITIONS

At the time of drilling, groundwater was not encountered within the depth of the borings, 20 feet below grade. It should be noted groundwater levels fluctuate over time and are influenced by seasonal precipitation and varying permeability characteristics of the subsurface soils. Shallow perched water may be present where fill soils exist from the previous development of the site.

ENGINEERING RECOMMENDATIONS

Site Preparation and Earthwork

Prior to mass grading the surficial topsoil with organic contents higher than about 8 percent should be stripped from the surface. Based on the results of the borings the stripping depth will likely range from about 12 to 18 inches at this site. After initial stripping the subgrade should be evaluated by a representative of the geotechnical engineer who should verify the subgrade soils do not contain debris that may have been buried during the demolition process, or excessive organic material. Any such materials that are deemed unsuitable for support of the slabs and pavements associated with this project should be undercut and removed from the subgrade.

In order to evaluate the subgrade stability prior to mass grading, it is recommended that the subgrade soils be proof rolled to identify any weak or unsuitable areas at or just below the subgrade elevation. Proofrolling may be accomplished with a fully loaded single axle dump truck or other pneumatic tire equipment which provides a similar subgrade loading. Areas that experience rutting or pumping under the proof roll load should be improved by subgrade improvement methods such as disking and recompaction, or removal and replacement. Disking, drying and recompaction must be carried out during suitable weather conditions. The removal and replacement method involves undercutting the excessively unsuitable soils and replacing with IDOT CA-1 crushed limestone aggregate. The CA-1 can be supplemented with geogrid in minimum lifts of 1 foot and capped off with a minimum of 6 inches of IDOT CA-6 to reduce surface water to infiltrate the subgrade. After the subgrade soils are stabilized, and suitable for support of new site grading fill or the floor slab, low areas may then be raised to the planned grades with properly compacted fill as described in the following section.

The existing subgrade soils will be susceptible to disturbance from precipitation, construction traffic, and vibrations. Care should be taken to avoid disturbance of the subgrade soil and construction traffic over

prepared subgrades should be avoided. If the subgrade soils become disturbed during construction, they should be scarified and recompacted or removed and replaced prior to placing new site grading fill or granular subbase material.

Mass grading and earthwork operations should be observed and evaluated by a representative of the geotechnical engineer.

Controlled Compacted Fill

It is recommended that fill materials used for structural support in the building areas consist of well-graded granular soils or lean clay, free of organic matter or other deleterious material. All structural fill should be placed on firm subgrades, and the fill should be placed in lifts and properly compacted. All newly placed fill should be placed in 9 inch or less loose lifts and compacted to at least 95 percent of the Modified Proctor test (ASTM D-1557) maximum dry density. The fill should be placed within +/- 2 percent of the optimum moisture content value determined by laboratory Proctor testing.

Backfill placed in utility excavations or against foundation walls should consist of structure backfill such as IDOT CA-6 or CA-7. Proper placement and compaction of backfill in these areas is considered essential in order to reduce the potential for distress of overlying pavements, floor slabs and footings. The placement of backfill against unsupported walls may induce movement, particularly where the backfill is placed on one side of the wall to a higher elevation than the backfill on the other side. Small, hand-operated compactors should be used in confined areas.

The site should be graded to promote runoff of surface water in order to minimize ponding of precipitation on the prepared subgrades, or in excavations. If the subgrade becomes saturated, or becomes deteriorated from repeated construction traffic, the affected material should be removed, and these materials should be disked and recompacted or undercut and replaced with suitable fill prior to further construction in those areas.

GEOCON recommends that the evaluation of the subgrade and selection of fill materials for various applications should be done in consultation with the geotechnical engineer, and placement of fill for structural applications be monitored and tested by a representative of the geotechnical engineer.

Spread Footings

Based on the soil conditions encountered during the subsurface investigation and laboratory test results, standard depth spread footings may be used to support the planned structures. Spread footing foundations may be placed directly on the native brown fine sand soils, or on controlled compacted fill extending to suitable bearing soils. Spread footings can be designed for a net allowable bearing pressure of 3,000 pounds per square foot (psf). The net allowable soil bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation.

Field observation of the foundation subgrade soil should be performed by a representative of the geotechnical engineer at the time of construction. At a minimum, the foundation observation and testing program should include visual inspection of the foundation excavations prior to concrete placement, to verify material type and confirm that any loose or otherwise disturbed soil has been removed from the excavation. Dynamic Cone Penetrometer (DCP) and hand penetrometer testing should be performed to verify that soils present within the influence zone of the foundations exhibits a minimum correlated N value of 12 blows per foot. In order to meet this criteria we recommend the native sand be recompacted using a hoe pack attachment prior to setting forms or reinforcing steel.

Unsuitable or lower strength bearing soils present within the influence zone of the foundation systems that do not meet the minimum strength requirements described above should be removed and replaced

with lean concrete or select granular material, consisting of IDOT CA-1 crushed limestone aggregate capped off with a minimum of 6 inches of CA-6 or equivalent. Fill materials placed below the foundations should extend a minimum of 6" beyond the edge of the footings for each foot of fill placed.

It is recommended that exterior footings be placed at a minimum depth of 4 feet below the finished grade for frost protection purposes. All footings should be protected from the effects of frost if construction is carried out during winter months.

To avoid disproportionately small footing sizes, it is recommended that continuous footings have a minimum dimension of 18 inches and isolated footings have a minimum dimension of 24 inches. A one-third increase in allowable design bearing pressure could be used in designing footings for added temporary live loads such as those due to wind gusts or seismic activity.

Foundation Settlement

The results of the field and laboratory testing were used to estimate settlement of the proposed foundations. Correlations between physical soil index properties such as moisture content, Standard Penetration N-values, and compressibility parameters, were used in the analyses. It is our opinion that foundation settlement will be within tolerable limits (less than 1 inch) provided the recommended design and construction criteria are followed, and the sand below the foundation is recompacted as recommended herein. It is recommended that the construction of foundations be monitored and tested by a representative of the geotechnical engineer.

Seismic Considerations

The maximum depth of soil exploration for this project was 20 feet below ground surface. Based on the data obtained from the borings within this depth, and knowledge of the area geology, a Seismic Site Classification of “D” appears feasible for this site, in general accordance with the 2018 Edition of the IBC. Additional information downloaded from the USGS website regarding seismicity criteria applicable for this project is provided in the Appendix.

Lateral Loads

Resistance to lateral loads can be computed as the sum of the passive earth pressure against the soil adjacent to the foundation and the frictional resistance at the base of the foundation. For shallow foundations, a coefficient of friction of 0.45 may be used for compacted granular material. For the purposes of resisting lateral loads, passive resistance in the frost zone should be neglected due to potential strength loss during freeze thaw cycles. The capacities provided above are ultimate values, and it is recommended that an appropriate factor of safety be used to arrive at allowable values of lateral resistances.

Slabs-on-Grade

Floor slab subgrades should be prepared during mass grading in accordance with the recommendations presented in previous sections of this report. It is anticipated that some amount of time will pass between mass grading and final preparation of the floor slab subgrade, any areas that experience deterioration from weather or repeated construction traffic should be repaired by disking and recompaction, or by undercutting and replacement with CA-1 crushed limestone aggregate.

Beneath slab-on-grade areas, a minimum of 6 inches of granular material is recommended to facilitate fine grading and provide a capillary cut-off. Floor slabs should be isolated from walls and foundations to minimize the risk of cracking due to differential movements between the walls and the floor slab.

The floor slab subgrade materials should be placed and compacted to a minimum of 95 percent of the

Modified Proctor test (ASTM D-1557) maximum dry density. Floor slabs can be designed using a vertical modulus of subgrade reaction of 100 pounds per cubic inch (pci).

Pavement Recommendations

Similar to the floor slab areas, it is anticipated that pavement subgrades will be prepared during mass grading in accordance with the recommendations presented in previous sections of this report. Any areas that experience deterioration over time from weather or repeated construction traffic should be repaired by disking and recompaction, or by undercutting and replacement with CA-1 crushed limestone aggregate.

Aggregate base may be placed after the subgrade has been properly compacted, fine graded and proofrolled. The proofrolling and backfilling operations should be inspected by a representative of GEOCON to assure sufficient remediation of unsuitable materials and proper placement of backfill in accordance with the recommendations in the previous, applicable sections of this report. For the design of the paved areas, it is recommended that an IBR/CBR value of 6 be employed. Recommended pavement sections are shown in Table 4A and 4B below:

TABLE 4A. RECOMMENDED HMA PAVEMENT SECTION

Pavement Material	Light Duty Parking Areas	Heavy Duty Drives & Parking Areas
	Thickness (inches)	
Hot Mix Asphalt Surface Course 9.5mm	2	2
Hot Mix Asphalt Binder Course 19.0mm	2	4
Aggregate Base (IDOT) CA-06	10	12
Total Pavement Section	14	18

TABLE 4B. RECOMMENDED PCC PAVEMENT SECTION

Pavement Material	Light Duty Parking Areas	Heavy Duty Drives & Parking Areas
	Thickness (inches)	
PCC	5	8
Aggregate Base (IDOT) CA-06	6	6
Total Pavement Section	11	14

It is recommended that the aggregate base be compacted to a minimum of 95 percent of the Modified Proctor test (ASTM D-1557) maximum dry density. The hot mix asphalt should be compacted to a minimum of 93 percent of the maximum theoretical density value. Also, rigid pavements, such as Portland cement concrete pavements, are recommended to have a maximum joint spacing of 12 to 15 feet. The joints should be sealed after cutting to retard the downward migration of water and incompressibles; however, the sealing material should not be applied until the majority of the shrinkage cracking has occurred.

It is recommended that saw-cut joints, if used, be completed as soon as possible after the concrete has cured sufficiently to safely allow the placement of saw cutting equipment and personnel on the surface of the concrete. Prompt completion of saw-cut joints will greatly assist in channeling the propagation of

shrinkage cracks that occur during initial curing of the concrete, thereby reducing the appearance of cracks in undesired areas.

Pavements should be sloped to promptly remove surface water. Ponding of water on pavement sections and saturation of pavement subgrades is a common cause of premature pavement deterioration. Routine maintenance consisting of repairing damaged areas is helpful in maintaining pavement life and serviceability. Pavement specifications should reference the Illinois Department of Transportation (IDOT) Standard Specifications.

CONSTRUCTION CONSIDERATIONS

Groundwater Control

Groundwater and/or surface water infiltration may be encountered during excavation at this site, especially if construction occurs during or after periods of increased precipitation. It is likely that dewatering can be accomplished using a series of sump pumps and pits to dewater the excavations for the greater portion of the site, but more extensive dewatering may be required for deeper excavations where saturated sand layers are encountered.

When designing site drainage patterns, site runoff should be diverted away from the foundations and directed towards on-site detention areas, or storm sewer systems. Such measures reduce the potential for softening and possible erosion of the foundation and pavement subgrade soils. It is especially important that water not be allowed to collect next to the building foundations.

Excavations

All excavations should comply with the requirements of OSHA 29CFR, Part 1926, Subpart P, "Excavations," regarding excavation and trench safety, as well as other applicable codes. This document states that excavation safety is the sole responsibility of the contractor and accordingly reference to this OSHA requirement should be included in the project specifications. Excavation slopes shall in no case be steeper than those specified by OSHA and all excavations should be monitored by a competent person, as defined by the OSHA standard. Appropriate shoring or sloping techniques should be used to prevent cave-ins.

Excavations near existing foundations, pavements or utilities should be made with caution as disturbance within foundation influence zones that support adjacent structures could result in excessive settlement. If the proposed construction will extend into the influence zone of the existing foundations, a shoring or underpinning system may be required to protect or support the adjacent structures.

GENERAL COMMENTS

This geotechnical exploration and foundation analysis has been conducted to aid in the evaluation of the foundation conditions on the subject site. The recommendations presented herein are based on the available soil information obtained and the design information provided. Any changes in the soil conditions encountered during construction, design, or building locations should be brought to the attention of the soils engineer to determine if modifications in the recommendations are required. The final design plans and specifications should also be reviewed by the soils engineer to determine that the recommendations presented herein have been interpreted and implemented as intended. It is recommended that the earthwork and foundation operations be monitored by the Geotechnical Engineer, to test and evaluate the bearing capacities, and the selection, placement and compaction of controlled fills.

This geotechnical study has been conducted in a manner consistent with that level of care ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. The findings, recommendations, and opinions contained herein have been promulgated in accordance with generally accepted practice in the fields of foundation engineering, soils mechanics, and engineering geology. No other representations, expressed or implied, and no warranty or guarantee is included or intended in this report.

APPENDIX

Site Vicinity Map
Boring Location Diagram
Site Plan
Soil Boring Logs
General Notes
USGS Seismic Summary Report

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FIGURE 1
SITE VICINITY DIAGRAM
Proposed Collection System Facility
3333 Kishwaukee St.
Rockford, IL 61109

PROJECT NUMBER: 22-G0279

DATE: February 2022

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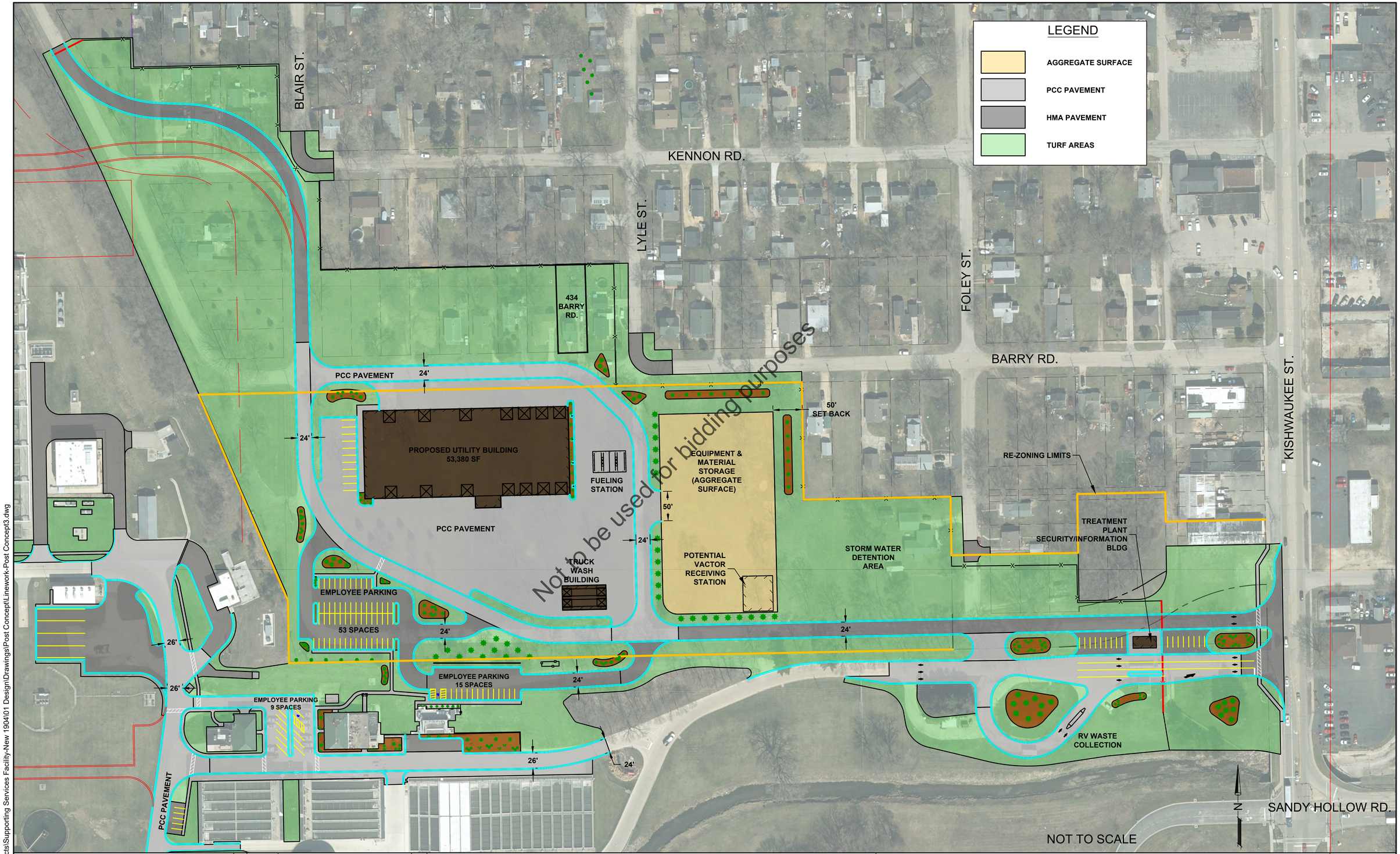
9370 Laraway Road, Suite D
Frankfort, IL 60423
P.815.806.9986 F. 815.464.8691

FIGURE 2
BORING LOCATION DIAGRAM
Proposed Collection System Facility
3333 Kishwaukee St.
Rockford, IL 61109

PROJECT NUMBER: 22-G0279

DATE: February 2022



file: I:\District Projects\Supporting Services Facility-New 1904\01 Design\Drawings\Post Concept\Linework-Post Concept3.dwg

Four Rivers Sanitation Authority

No.	DATE	REVISION	INT.

FRSA TREATMENT PLANT
FUTURE SITE IMPROVEMENTS

SITE LAYOUT & GEOMETRY EXHIBIT

Sheet No.
1 OF 1

Date
1/10/2022

BORING NO. SB-1

GEOCON PROFESSIONAL SERVICES

CLIENT Four Rivers Sanitation Authority **PROJECT NAME** Proposed Collection System Facility

PROJECT NUMBER 22-G0297 **PROJECT LOCATION** Rockford, IL 61109

DATE COMPLETED 2/4/22 **LOGGED BY** DA/DL **DRILLING METHOD** 3.25 in. I.D. HSA

DEPTH (ft)	ELEVATION (ft.)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (Qp) (tsf)	UNC. STRENGTH (Qu) (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	ORGANIC CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
0	717.7		black SANDY TOPSOIL PID = 0.0 ppm	SS 1	100	10-15-11 (26)			8.5					
5			brown FINE SAND trace gravel loose to medium dense PID = 0.0 ppm	SS 2	78	4-3-4 (7)			4.3					
			PID = 0.0 ppm	SS 3	78	1-2-1 (3)			5.8					
10			PID = 0.0 ppm	SS 4	78	3-4-4 (8)			5.8					
			PID = 0.0 ppm	SS 5	89	5-5-5 (10)			2.7					
15			PID = 0.0 ppm	SS 6	89	4-4-7 (11)			2.5					
20	701.2		PID = 0.0 ppm	SS 7	78	4-7-7 (14)			3.0					
			Bottom of borehole at 20.0 feet.											

COMPLETION DEPTH 20 ft **GROUND ELEVATION** 721.23 ft

CAVE DEPTH ft **BACKFILL** Soil Cuttings

GROUND WATER LEVELS:

AT TIME OF DRILLING ---

AT END OF DRILLING ---

AFTER DRILLING ---

NOTES

Groundwater levels were recorded at the time of drilling and may not represent the groundwater conditions at the time of construction.

Lines of Demarcation represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes.

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BORING NO. SB-2

GEOCON PROFESSIONAL SERVICES

CLIENT Four Rivers Sanitation Authority **PROJECT NAME** Proposed Collection System Facility

PROJECT NUMBER 22-G0297 **PROJECT LOCATION** Rockford, IL 61109

DATE COMPLETED 2/4/22 **LOGGED BY** DA/DL **DRILLING METHOD** 3.25 in. I.D. HSA

DEPTH (ft)	ELEVATION (ft.)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (Qp) (tsf)	UNC. STRENGTH (Qu) (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	ORGANIC CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
0	719.0		black SANDY TOPSOIL PID = 0.7 ppm	SS 1	89	10-6-4 (10)			10.8		2.3			
5			brown FINE SAND trace gravel loose to medium dense PID = 0.4 ppm	SS 2	78	4-4-3 (7)			4.1					
			PID = 0.4 ppm	SS 3	56	4-4-5 (9)			5.1					
10			PID = 0.3 ppm	SS 4	67	3-4-4 (8)			1.8					
			PID = 0.3 ppm	SS 5	78	4-6-7 (13)			1.9					
15			PID = 0.1 ppm	SS 6	33	6-12-15 (27)			4.0					
20	702.5		PID = 0.1 ppm	SS 7	78	8-7-10 (17)			2.6					
			Bottom of borehole at 20.0 feet.											

COMPLETION DEPTH 20 ft **GROUND ELEVATION** 722.54 ft

CAVE DEPTH ft **BACKFILL** Soil Cuttings

GROUND WATER LEVELS:

AT TIME OF DRILLING ---

AT END OF DRILLING ---

AFTER DRILLING ---

NOTES

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BORING NO. SB-3

GEOCON PROFESSIONAL SERVICES

CLIENT Four Rivers Sanitation Authority **PROJECT NAME** Proposed Collection System Facility

PROJECT NUMBER 22-G0297 **PROJECT LOCATION** Rockford, IL 61109

DATE COMPLETED 2/4/22 **LOGGED BY** DA/DL **DRILLING METHOD** 3.25 in. I.D. HSA

DEPTH (ft)	ELEVATION (ft.)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (Qp) (tsf)	UNC. STRENGTH (Qu) (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	ORGANIC CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
0	726.6		6" TOPSOIL											
	726.4		3" CONCRETE DEBRIS											
			dark brown FINE SAND trace roots loose PID = 1.4 ppm	SS 1	100	50/5"			6.3					
	723.6		brown FINE SAND trace gravel loose to medium dense PID = 0.5 ppm	SS 2	67	3-2-3 (5)			6.2					
5			PID = 0.0 ppm	SS 3	78	3-5-5 (10)			2.5					
			PID = 0.0 ppm	SS 4	78	6-7-6 (13)			3.0					
10			PID = 0.0 ppm	SS 5	100	4-3-2 (5)			1.2					
			PID = 0.0 ppm	SS 6	89	2-3-2 (5)			2.2					
15														
			PID = 0.0 ppm	SS 7	89	3-2-2 (4)			3.9					
20	707.1		Bottom of borehole at 20.0 feet.											

COMPLETION DEPTH 20 ft **GROUND ELEVATION** 727.14 ft

CAVE DEPTH ft **BACKFILL** Soil Cuttings

GROUND WATER LEVELS:

AT TIME OF DRILLING ---

AT END OF DRILLING ---

AFTER DRILLING ---

NOTES

Groundwater levels were recorded at the time of drilling and may not represent the groundwater conditions at the time of construction.

Lines of Demarcation represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes.

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BORING NO. SB-4

GEOCON PROFESSIONAL SERVICES

CLIENT Four Rivers Sanitation Authority **PROJECT NAME** Proposed Collection System Facility

PROJECT NUMBER 22-G0297 **PROJECT LOCATION** Rockford, IL 61109

DATE COMPLETED 2/4/22 **LOGGED BY** DA/DL **DRILLING METHOD** 3.25 in. I.D. HSA

DEPTH (ft)	ELEVATION (ft.)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (Qp) (tsf)	UNC. STRENGTH (Qu) (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	ORGANIC CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
0	725.1		18" TOPSOIL PID = 0.2 ppm											
			dark brown and black FINE SAND trace organics medium dense	SS 1	100	10-8-3 (11)			12.3		6.8			
	723.1		brown FINE SAND trace gravel loose to medium dense PID = 0.1 ppm	SS 2	100	3-3-3 (6)			6.0					
5			PID = 0.1 ppm	SS 3	78	4-4-6 (10)			2.4					
10			PID = 0.0 ppm	SS 4	78	3-3-3 (6)			3.1					
			PID = 0.0 ppm	SS 5	67	2-4-4 (8)			3.0					
15			PID = 0.1 ppm	SS 6	89	3-2-2 (4)			5.5					
20	706.6		PID = 0.1 ppm	SS 7	89	3-5-6 (11)			3.2					
			Bottom of borehole at 20.0 feet.											

COMPLETION DEPTH 20 ft **GROUND ELEVATION** 726.6 ft

CAVE DEPTH ft **BACKFILL** Soil Cuttings

GROUND WATER LEVELS:

AT TIME OF DRILLING ---

AT END OF DRILLING ---

AFTER DRILLING ---

NOTES

Groundwater levels were recorded at the time of drilling and may not represent the groundwater conditions at the time of construction.

Lines of Demarcation represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes.

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BORING NO. SB-5

GEOCON PROFESSIONAL SERVICES

CLIENT Four Rivers Sanitation Authority **PROJECT NAME** Proposed Collection System Facility

PROJECT NUMBER 22-G0297 **PROJECT LOCATION** Rockford, IL 61109

DATE COMPLETED 2/4/22 **LOGGED BY** DA/DL **DRILLING METHOD** 3.25 in. I.D. HSA

DEPTH (ft)	ELEVATION (ft.)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (Qp) (tsf)	UNC. STRENGTH (Qu) (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	ORGANIC CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
0	719.6		black SANDY TOPSOIL FILL trace glass PID = 1.9 ppm	SS 1	67	5-4-4 (8)			12.2		2.4			
5			brown FINE SAND trace gravel loose to medium dense PID = 0.6 ppm	SS 2	78	3-3-1 (4)			2.8					
			PID = 0.6 ppm	SS 3	67	3-7-7 (14)			3.5					
10			PID = 0.0 ppm	SS 4	78	4-5-6 (11)			3.3					
			PID = 0.4 ppm	SS 5	78	5-6-7 (13)			4.5					
15			PID = 0.0 ppm	SS 6	78	4-5-8 (13)			5.8					
20	703.1		PID = 0.0 ppm	SS 7	89	6-6-7 (13)			3.9					

Bottom of borehole at 20.0 feet.

COMPLETION DEPTH 20 ft **GROUND ELEVATION** 723.07 ft

CAVE DEPTH ft **BACKFILL** Soil Cuttings

GROUND WATER LEVELS:

AT TIME OF DRILLING ---

AT END OF DRILLING ---

AFTER DRILLING ---

NOTES

Groundwater levels were recorded at the time of drilling and may not represent the groundwater conditions at the time of construction.

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BORING NO. SB-6

GEOCON PROFESSIONAL SERVICES

CLIENT Four Rivers Sanitation Authority **PROJECT NAME** Proposed Collection System Facility

PROJECT NUMBER 22-G0297 **PROJECT LOCATION** Rockford, IL 61109

DATE COMPLETED 2/4/22 **LOGGED BY** DA/DL **DRILLING METHOD** 3.25 in. I.D. HSA

DEPTH (ft)	ELEVATION (ft.)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (Qp) (tsf)	UNC. STRENGTH (Qu) (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	ORGANIC CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
0	719.1		black SANDY TOPSOIL medium dense PID = 0.4 ppm	SS 1	100	12-13-9 (22)			10.8		2.7			
5			brown FINE SAND trace gravel loose to medium dense PID = 0.6 ppm	SS 2	100	4-2-2 (4)			7.6					
			PID = 0.1 ppm	SS 3	78	3-3-5 (8)			1.9					
10			PID = 0.0 ppm	SS 4	78	3-4-5 (9)			2.1					
			PID = 0.3 ppm	SS 5	100	3-4-8 (12)			2.6					
15			PID = 0.2 ppm	SS 6	78	4-6-11 (17)			2.9					
20	702.6		PID = 0.2 ppm	SS 7	89	3-5-8 (13)			1.8					
			Bottom of borehole at 20.0 feet.											

COMPLETION DEPTH 20 ft **GROUND ELEVATION** 722.59 ft

CAVE DEPTH ft **BACKFILL** Soil Cuttings

GROUND WATER LEVELS:

AT TIME OF DRILLING ---

AT END OF DRILLING ---

AFTER DRILLING ---

NOTES

Groundwater levels were recorded at the time of drilling and may not represent the groundwater conditions at the time of construction.

Lines of Demarcation represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes.

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BORING NO. SB-7

GEOCON PROFESSIONAL SERVICES

CLIENT Four Rivers Sanitation Authority **PROJECT NAME** Proposed Collection System Facility

PROJECT NUMBER 22-G0297 **PROJECT LOCATION** Rockford, IL 61109

DATE COMPLETED 2/4/22 **LOGGED BY** DA/DL **DRILLING METHOD** 3.25 in. I.D. HSA

DEPTH (ft)	ELEVATION (ft.)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (Qp) (tsf)	UNC. STRENGTH (Qu) (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	ORGANIC CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
0	721.9		black SANDY TOPSOIL FILL trace glass PID = 1.2 ppm	SS 1	100	15-19-11 (30)			13.3					
5			brown FINE SAND trace gravel loose to medium dense PID = 0.9 ppm	SS 2	67	5-5-6 (11)			5.4					
			PID = 1.3 ppm	SS 3	67	4-4-4 (8)			2.2					
10			PID = 1.3 ppm	SS 4	67	3-4-5 (9)			2.3					
			PID = 0.8 ppm	SS 5	67	3-5-9 (14)			2.6					
15			PID = 0.0 ppm	SS 6	78	4-8-10 (18)			2.2					
20	705.4		PID = 0.0 ppm	SS 7	78	6-8-11 (19)			2.5					
			Bottom of borehole at 20.0 feet.											

COMPLETION DEPTH 20 ft **GROUND ELEVATION** 725.37 ft

CAVE DEPTH ft **BACKFILL** Soil Cuttings

GROUND WATER LEVELS:

AT TIME OF DRILLING ---

AT END OF DRILLING ---

AFTER DRILLING ---

NOTES

Groundwater levels were recorded at the time of drilling and may not represent the groundwater conditions at the time of construction.

Lines of Demarcation represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes.

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BORING NO. SB-8

GEOCON PROFESSIONAL SERVICES

CLIENT Four Rivers Sanitation Authority **PROJECT NAME** Proposed Collection System Facility

PROJECT NUMBER 22-G0297 **PROJECT LOCATION** Rockford, IL 61109

DATE COMPLETED 2/4/22 **LOGGED BY** DA/DL **DRILLING METHOD** 3.25 in. I.D. HSA

DEPTH (ft)	ELEVATION (ft.)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (Qp) (tsf)	UNC. STRENGTH (Qu) (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	ORGANIC CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX
0	724.2		15" TOPSOIL											
			PID = 0.6 ppm dark brown and black FINE SAND with topsoil and roots very loose	SS 1	56	7-2-1 (3)			23.8		5.5			
	721.9		brown FINE SAND trace gravel loose to medium dense PID = 0.3 ppm	SS 2	56	3-3-2 (5)			12.9					
5			PID = 0.1 ppm	SS 3	89	3-3-3 (6)			4.3					
			PID = 0.0 ppm	SS 4	89	3-4-6 (10)			2.6					
10			PID = 0.1 ppm	SS 5	89	4-4-6 (10)			2.9					
			PID = 0.1 ppm	SS 6	89	7-9-9 (18)			2.8					
15														
			PID = 0.0 ppm	SS 7	100	4-6-7 (13)			2.7					
20	705.4		Bottom of borehole at 20.0 feet.											

COMPLETION DEPTH 20 ft **GROUND ELEVATION** 725.42 ft

CAVE DEPTH ft **BACKFILL** Soil Cuttings

GROUND WATER LEVELS:

AT TIME OF DRILLING ---

AT END OF DRILLING ---

AFTER DRILLING ---

NOTES

Groundwater levels were recorded at the time of drilling and may not represent the groundwater conditions at the time of construction.

Lines of Demarcation represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes.

9370 W. Laraway Road, Suite D Frankfort, IL 60423 Phone 815-806-9986 Fax 815-464-8691

GENERAL NOTES

CLIENT Four Rivers Sanitation Authority
PROJECT NAME Proposed Collection System Facility
PROJECT NUMBER 22-G0297
PROJECT LOCATION Rockford, IL 61109

SAMPLE IDENTIFICATION

Visual soil classifications are made in general accordance with the United Soil Classification System (USCS) on the basis of textural and particle size categorization, and various soil behavior characteristics. Visual classifications should be substantiated by appropriate laboratory testing when a more exact soil identification is required to satisfy specific project applications criteria.

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487-98)

MATERIAL TYPES	CRITERIA FOR ASSIGNING SOIL GROUP NAMES			GROUP SYMBOL	SOIL GROUP NAMES & LEGEND
COARSE-GRAINED SOILS >50% RETAINED ON NO. 200 SIEVE	GRAVELS >50% OF COARSE FRACTION RETAINED ON NO 4. SIEVE	CLEAN GRAVELS <5% FINES	$C_u \geq 4$ AND $1 \leq C_c \leq 3$	GW	WELL-GRADED GRAVEL
			$C_u \geq 4$ AND/OR $1 \geq C_c \geq 3$	GP	POORLY-GRADED GRAVEL
		GRAVELS WITH FINES >12% FINES	FINES CLASSIFY AS ML OR CL	GM	SILTY GRAVEL
			FINES CLASSIFY AS CL OR CH	GC	CLAYEY GRAVEL
	SANDS >50% OF COARSE FRACTION PASSES ON NO 4. SIEVE	CLEAN SANDS <5% FINES	$C_u \geq 6$ AND $1 \leq C_c \leq 3$	SW	WELL-GRADED SAND
			$C_u \geq 6$ AND/OR $1 \geq C_c \geq 3$	SP	POORLY-GRADED SAND
		SANDS AND FINES >12% FINES	FINES CLASSIFY AS ML OR MH	SM	SILTY SAND
			FINES CLASSIFY AS CL OR CH	SC	CLAYEY SAND
FINE-GRAINED SOILS >50% PASSES NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT<50	INORGANIC	PI>7 AND PLOTS>"A" LINE	CL	LEAN CLAY
			PI>4 AND PLOTS<"A" LINE	ML	SILT
		ORGANIC	LL (oven dried)/LL (not dried)<0.75	OL	ORGANIC CLAY OR SILT
	SILTS AND CLAYS LIQUID LIMIT>50	INORGANIC	PI PLOTS >"A" LINE	CH	FAT CLAY
			PI PLOTS <"A" LINE	MH	ELASTIC SILT
		ORGANIC	LL (oven dried)/LL (not dried)<0.75	OH	ORGANIC CLAY OR SILT
HIGHLY ORGANIC SOILS		PRIMARILY ORGANIC MATTER, DARK IN COLOR, AND ORGANIC ODOR		PT	PEAT

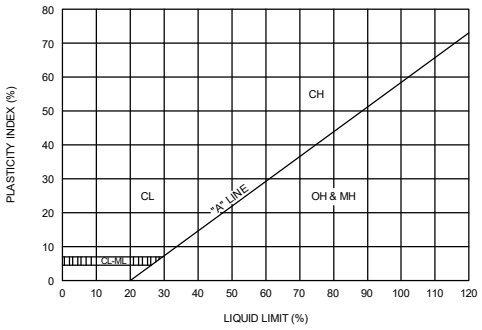
PROJECT LITHOLOGIC SYMBOLS (USCS)

CONCRETE: Concrete
SP: USCS Poorly-graded Sand
TOPSOIL: Topsoil

PROJECT SAMPLE TYPES

Split Spoon (SS)

PLASTICITY CHART



SOIL RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION

NON-COHESIVE SOILS		COHESIVE SOILS		
RELATIVE DENSITY	N-VALUE*	CONSISTENCY	N-VALUE*	COMPRESSIVE STRENGTH (TSF)
VERY LOOSE	0 - 4	VERY SOFT	0 - 2	0 - 0.25
LOOSE	4 - 10	SOFT	2 - 5	0.25 - 0.50
MEDIUM DENSE	10 - 30	MEDIUM STIFF	5 - 10	0.50 - 1.0
DENSE	30 - 50	STIFF	10 - 14	1.0 - 2.0
VERY DENSE	OVER 50	VERY STIFF	14 - 32	2.0 - 4.0
		HARD	OVER 32	OVER 4.0

* N-VALUE: NUMBER OF BLOWS OF 140 LB HAMMER FALLING 30 INCHES TO DRIVE A 2 INCH O.D. (1-3/8 INCH I.D.) SPLIT-BARREL SAMPLER THE LAST 12 INCHES OF AN 18-INCH DRIVE (ASTM-1586 STANDARD PENETRATION TEST).

ABBREVIATIONS

SS	-	SPLIT-SPOON SAMPLE	LL	-	LIQUID LIMIT (%)
ST	-	SHELBY TUBE SAMPLE	PL	-	PLASTIC LIMT (%)
AU	-	AUGER SAMPLE	PI	-	PLASTIC INDEX (%)
MC	-	MOISTURE CONTENT (%)	NP	-	NON PLASTIC
-200	-	PERCENT PASSING NO. 200 SIEVE	DD	-	DRY DENSITY (PCF)
Qp	-	POCKET PENETROMETER (TSF)	DCP	-	DYNAMIC CONE PENETROMETER
Qu	-	UNCONFINED STRENGTH (TSF)	IBV	-	IMMEDIATE BEARING VALUE

22-G0297 Proposed Collection System Facility

Martin Rd, Rockford, IL 61109, USA

Latitude, Longitude: 42.2241757, -89.090034

Date	2/17/2022, 8:21:23 AM
Design Code Reference Document	IBC-2015
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
S_S	0.124	MCE_R ground motion. (for 0.2 second period)
S_1	0.058	MCE_R ground motion. (for 1.0s period)
S_{MS}	0.198	Site-modified spectral acceleration value
S_{M1}	0.138	Site-modified spectral acceleration value
S_{DS}	0.132	Numeric seismic design value at 0.2 second SA
S_{D1}	0.092	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	B	Seismic design category
F_a	1.6	Site amplification factor at 0.2 second
F_v	2.4	Site amplification factor at 1.0 second
PGA	0.062	MCE_G peak ground acceleration
F_{PGA}	1.6	Site amplification factor at PGA
PGA_M	0.1	Site modified peak ground acceleration
T_L	12	Long-period transition period in seconds
SsRT	0.124	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	0.136	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.058	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.066	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.6	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.906	Mapped value of the risk coefficient at short periods

Type	Value	Description
C_{R1}	0.868	Mapped value of the risk coefficient at a period of 1 s

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SECTION 00 7200

GENERAL CONDITIONS

FORM OF GENERAL CONDITIONS

1.01 THE GENERAL CONDITIONS APPLICABLE TO THIS CONTRACT IS ATTACHED FOLLOWING THIS PAGE.

SUPPLEMENTARY CONDITIONS

2.01 REFER TO DOCUMENT 00 7300 - SUPPLEMENTARY CONDITIONS FOR AMENDMENTS TO THESE GENERAL CONDITIONS.

END OF SECTION

AIA® Document A201® – 2007

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

New Collection Systems Operation Facility-General Construction Bid
3501 Kishwaukee Street
Rockford, Illinois 61109

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

THE OWNER:
(Name, legal status and address)

Four Rivers Sanitation Authority
3501 Kishwaukee Street
Rockford, Illinois 61109

THE ARCHITECT:
(Name, legal status and address)

Blakemore Architects, Inc
400 N. First Street
Rockford, Illinois 61107

TABLE OF ARTICLES

Init.
/

INDEX
(Topics and numbers in bold are section headings.)

Init.
/

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 CONCEALED OR UNKNOWN CONDITIONS

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents:

.1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

.2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and

.3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled

to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce

other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the

Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and

.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

.1 The change in the Work;
.2 The amount of the adjustment, if any, in the Contract Sum; and
.3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
.2 Unit prices stated in the Contract Documents or subsequently agreed upon;
.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
.4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

.1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;

.2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;

.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and

.5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be

furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the

Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- **.1** liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- **.2** failure of the Work to comply with the requirements of the Contract Documents; or
- **.3** terms of special warranties required by the Contract Documents.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- **.1** employees on the Work and other persons who may be affected thereby;
- **.2** the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- **.3** other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 10.4 EMERGENCIES
In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS
§ 11.1 CONTRACTOR'S LIABILITY INSURANCE
§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

.1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;

.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;

.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;

.4 Claims for damages insured by usual personal injury liability coverage;

.5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;

.6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;

.7 Claims for bodily injury or property damage arising out of completed operations; and

.8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 OWNER'S LIABILITY INSURANCE
The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 PROPERTY INSURANCE
§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's

risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.3.3 LOSS OF USE INSURANCE

The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- **.1** Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- **.2** An act of government, such as a declaration of national emergency that requires all Work to be stopped;
- **.3** Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- **.4** The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- **.1** repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- **.2** fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- **.3** repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- **.4** otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

.1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker.

Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 ARBITRATION

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 CONSOLIDATION OR JOINDER

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.

SECTION 00 7301

SUPPLEMENTARY CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

TABLE OF CONTENTS

ARTICLE 1 GENERAL PROVISIONS

A. The "General Conditions of the Contract for Construction" AIA Document A 201, 2007 Edition; Articles 1 through 14, is a part of the Contract Documents attached herein.

B. The aforementioned AIA General Conditions shall remain in effect except for such modifications or deletions and such supplementary conditions as specified in this Section. Unaltered portions of the General Conditions shall remain in affect.

1.1BASIC DEFINITIONS

A. Section 1.1 of the General Conditions is supplemented as follows:

1.1.3 The term "General Work" shall mean the work, other than Mechanical and Electrical Work, specified in any or all Sections of Divisions 1 through 14.

The term "Mechanical Work" shall mean the Plumbing, Heating and Ventilating Work specified in any or all Sections of Divisions 1 and 15 and other Divisions specified. The term "Electrical Work" shall mean the Electrical Work specified in any or all Sections of Divisions 1 and 16 and other Divisions specified.

1.1.4 Where the word "building", "project" or "work" occurs herein or in the Specifications, it shall be construed as applying to all buildings. In all cases where device, material, units or part of equipment is referred to as singular in number, it is intended that such reference shall apply to as many such devices as are required to complete project and/or work on the project.

1.1.5 "Provide" wherever used in the specifications or on the drawings shall mean "furnish and install in place".

1.1.6 "Provide" wherever used in the specifications or on the drawings shall mean "furnish and install in place".

1.1.7 The term "Project Manual" shall mean the volume that includes the Bidding Requirements, Conditions of the Contract and the Specifications and other technical data and soil boring reports.

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

A. Subparagraph 1.2.1 of the General Conditions is supplemented as follows:

1.In the case of an inconsistency between drawings and specifications or within either document, not clarified by addenda, the better quality or greater quantity of Work shall be provided in accordance with the Architect's interpretation.
2.The Contractor shall provide all work and materials which any Section or part of the drawings, specifications or conditions require him to provide regardless of whether such requirement is or is not faithfully repeated in other parts of documents thereof to which the provision might be appropriate.
3.Where new rooms are shown on the floor plans but are not listed in the Room Finish Schedule, those rooms shall be finished the same as other rooms of a similar nature as listed in the Room Finish Schedule. Where new doors are designated on the floor plans but are not listed in the Door Schedule, provide doors, frames and hardware of the same type as are to be provided for rooms of a similar nature.

B. Sub-paragraph 1.2.2 of the General Conditions is supplemented as follows:
1.Project Manual Explanation:
a. Project Manual is composed of Title Page, Index, Bidding Requirements and Forms, Conditions of the Contract and Specifications. Divisions and Sections are arranged in format conforming to the 16 Division System of the CSI.
b. Where Sections contain "Work Includes" list, it merely serves as a table of contents for items described in the Section and is not intended to limit or restrict volume or type of work required by the Section of Specifications.
c. Imperative language is used generally in the specifications. Except as otherwise specified, requirements expressed imperatively are to be performed by the Contractor. For clarity of reading at certain locations, contrasting subjective language is used to describe the responsibilities which must be fulfilled indirectly by the Contractor or, when so noted, by others.

C. Subparagraph 1.2.3 of the General Conditions is supplemented as follows:
1. Where materials or devices are specified in these documents by reference to Government, Manufacturer's Association or Professional Society Standards, the pertinent sections of the latest edition of such standards, unless otherwise specified, shall have the same force and effect as if set forth in full in these specifications. The following abbreviations will be used as indicated for the principal societies:
AASHTO American Association of State Highway & Transportation Officials
ACI American Concrete Institute
AIA American Institute of Architects
AIEE American Institute of Electrical Engineers
AISC American Institute of Steel Construction
AMCA Air Moving and Conditioning Association
ANSI American National Standards Institute
ASCE American Society of Civil Engineers
ASME American Society of Mechanical Engineers
ASTM American Society of Testing Materials
AWI Architectural Woodwork Institute
AWS American Welding Society
NEC National Electric Code
NFPA National Fire Protection Association
SMACNA Sheet Metal and Air Conditioning Contractors National Association
UL Underwriter's Laboratories

1.5 EXECUTION OF CONTRACT DOCUMENTS

A.Subparagraph 1.5.2 of the General Conditions is supplemented as follows:
1.Site Investigation:
a. By executing the Contract, the Contractor acknowledges that he has satisfied himself as to the nature and location of the work, the general and local conditions, including those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, ground water table or

similar physical conditions of the ground, the character, quality and quantity of surface and sub-surface materials to be encountered, the character of equipment and facilities needed prior to and during the execution of the work and all other matters which can in any way affect the work or the cost thereof under this Contract. Any failure by the Contractor to acquaint himself with all the available information concerning these conditions will not relieve him from any obligation with respect to his Contract.

ARTICLE 3 CONTRACTOR

3.1 GENERAL

A. For the purpose of definition under Article 3 CONTRACTOR, Paragraph 3.1 of the General Conditions is supplemented as follows:

3.1.1 Contractor: The word "Contractor" is recognized as a party to the contract. The term "Contractor" unless otherwise modified, shall mean the Contractor to whom the contract has been awarded to perform the work required by all drawings and all 16 Divisions of the specifications and all Addenda issued. The terms General Contractor, Plumbing Contractor, Heating Contractor, Electrical Contractor, etc., may appear in certain Sections for clarity of describing the responsibilities which must be fulfilled as part of their respective Divisions of work.

3.4 LABOR AND MATERIALS

A. Paragraph 3.4 of the General Conditions is supplemented as follows:

1. In order that ready availability of materials, parts or components for repair, replacement or expansion may be assured, all such materials, parts and components shall be obtained where feasible from sources that maintain a regular domestic stock. Foreign produced materials and components shall be used only with Architect's prior written approval.
2. Materials: Substitution, Acceptance. Materials are specified in the following ways:
   a. Where materials are listed by manufacturer and trade name with no qualifying statement, comparable materials of other manufacturers complying with or exceeding the specification for the intended use, and as approved by the Architect, may be furnished. Such approved materials will be included in the bidding documents by Addendum or may be submitted on the substitution sheet of the Bid Form.
   b. Where more than one material or manufacturer and trade name are listed, Contractor has the option of selecting any one of the manufacturers or materials named. Within 30 days after award of contract and before ordering material and equipment, contractor shall submit in quadruplicate to Architect, listing of manufacturers or materials contractor proposes to use.
   c. Where material is listed by description or by SATM or Fed Spec numbers, any product meeting or exceeding requirements of such specification will be acceptable if material does not alter details as shown on drawings. If requested by Architect, evidence shall be furnished showing that material meets requirements of specifications.
   d. Materials shall be new and of the weights, grades, thickness and quality specified. Manufactured items or equipment shall be based on names specified. In substituting items or equipment Contractor assumes responsibility for any changes in system or for modifications required in other work to accommodate such substitution, despite Architect's acceptance of the substitution, either in the specifications or in an Addendum, and shall coordinate with other contractors whose work may be affected by such substitution.
   e. After the award of the Contract, substitutions will be considered only under one or more of the following conditions:
      (1) Required for compliance with subsequent interpretation of code requirements or insurance regulations.
      (2) Unavailability of specified products, through no fault of the Contractor.
      (3) Subsequent information discloses inability of specified products to perform properly or to fit into designated space.
      (4) When it is clearly seen, in the judgment of the Architect that a substitution would be substantially to the Owner's best interest, in terms of cost, time or other considerations.

f. Unless otherwise specifically provided for in the specifications, all workmanship, equipment, materials and articles incorporated in the work covered by this contract are to be of the best grade of their respective kinds for the purpose. When required by the Specifications, or when called for by the Architect, the Contractor shall furnish to the Architect for his review the name of the manufacturer of materials, machinery, mechanical and other equipment which he contemplates incorporating in the work, together with their respective performance capacities and other pertinent information. Samples of materials shall be submitted for review when and as directed. Machinery or equipment materials and articles installed or used without such review shall be at the risk of subsequent rejection.

3. Anchors and/or Fasteners: Use of fibrous braid or non-metallic expansion shields will not be permitted for fastening any material or fabricated items.

4. Labor: Contractors and subcontractors employed upon work shall be required to conform to labor laws of the State and various acts amendatory and supplementary thereto and to other laws, ordinances and legal requirements applicable thereto.

a. Work shall be performed by trained experienced personnel, skilled in their various crafts, under full time supervision of an approved engineer or foreman.

3.5 WARRANTY

A. Subparagraph 3.5.1 of the General Conditions is supplemented as follows:

1. The Contractor is obligated to correct, at his own expense for a period of one year or such longer period as may be specified, all work found defective or not in accordance with the contract documents. This shall not establish a period of limitation with respect to any other obligation that the Contractor might have under the contract.

3.6 TAXES

A. Subparagraph 3.6.1 of the General Conditions is supplemented as follows:

1. The Contractor shall also pay unemployment and social security taxes or other taxes imposed by Local, City, State or Federal governmental bodies. If the tax laws are subsequently amended by legislation during the life of the contract, the Contractor shall provide the net change caused by such amendment.

3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

A. Subparagraph 3.10.1 of the General Conditions is supplemented as follows:

1. As soon as possible, the Contractor shall develop a construction Schedule for his work and make copies for Architect's information. The contractor shall issue a copy of his schedule to the subcontractors for mechanical and electrical, who, in turn, shall promptly prepare construction schedules for their work. The General Contractor shall then make a combined Horizontal Bar Chart of Work for all parties involved, which will be used throughout construction to keep this project on schedule.

2. The Horizontal Bar Chart for the Work shall be posted in the project construction office and shall be brought up to date monthly by the General Contractor. Updated charts shall include schedule changes for the work of all prime contractors involved. Copies of updated bar charts shall be sent to the Owner and the Architect monthly.

3.11 DOCUMENTS AND SAMPLES AT THE SITE

A. Subparagraph 3.11.1 of the General Conditions is supplemented as follows:

1. The Contractor shall maintain record drawings throughout the construction of the project and shall be held solely responsible for their accuracy in accordance with Section 01700. The contractor shall update all modifications in the general site and building construction and shall require that all subcontractors update their respective record drawings one or more times each week. Contractor payment is contingent upon receipt of updated as built drawings and specifications.

2. Record drawings shall be turned over to the Architect at completion of the project.

3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

A. Subparagraph 3.12.1 of the General Conditions is supplemented as follows:

1. Only shop drawings that have been reviewed by Contractor and Architect shall be used at the jobsite and all copies shall bear the stamps of both the Contractor and Architect indicating general conformance to the design concept and contract documents. The contractor is required to review the shop drawings in detail for compliance with all applicable code requirements. The review made by the architect is advisory only and applies to the design arrangment and interpetion. This review shall not be construed as relieving the Contractor from compliance with the contract documents nor does it relieve the contractor (or theire sub-contractors) of responsibility for accruacy of details, dimensions or quanities. Changes on contract requirments cannot be made via shop drawing review but only by a properly executed change order.

3.18 INDEMNIFICATION

A. Paragraph 3.18 of the General Conditions is supplemented as follows:

1. Add a new subparagraph numbered 3.18.3 as follows: “None of the foregoing provisions shall deprive the Owner or the Architect of any action, right or remedy otherwise available to them or either of them at common law”.

2. Add a new subparagraph numbered 3.18.4 as follows: “In the event that any party is requested but refuses to honor the indemnity obligation hereunder, then the party indemnifying shall, in addition to all other obligations, pay the cost of bringing any such action, including attorneys fees, to the party requesting indemnity.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.2 MUTUAL RESPONSIBILITY

A. Subparagraph 6.2.2 of the General Conditions is supplemented as follows:

1.Each contractor shall perform work in proper sequence in relation to that of other contractors. Mechanical contractors shall fit their piping and ductwork into structure as job conditions may demand. Final decision as to right-of-way and run of pipes, ducts etc., shall be made by Architect or his representative at project coordination meetings.

2.Each contractor and subcontractor shall obtain complete data at site and inspect surfaces that are to receive his work before proceeding with his work; shall be solely responsible for accuracy of measurements and laying out of work; shall correct errors or defects due to faulty measurements taken, information obtained, layout or due to failure to report discrepancies. Work of previous contracts found to be unacceptable to receive work of this contract shall be reported to the Architect by contractors finding such conditions prior to beginning of the work.

3.Each contractor shall give due notice and proper information to other contractors of any special provision necessary for the placing and setting of his work coming in contact with work of other contractors. Failing to do so in proper time, he shall be held responsible and shall pay for any and all alterations and repairs necessitated by such neglect.

4.Each contractor shall cooperate in every way possible to allow for installation of equipment that is to be provided by Owner or Equipment Contractors during the course of the construction.

5.Each contractor shall furnish and install during the progress of construction all necessary sleeves, hangers etc., required for his work. Installation must be done at such time and in such a manner as not to delay or interfere with any other building operation. Where any such work has not been done, or coordinated with the other trades, and where the proper installation of all apparatus and materials included in the specification is governed thereby, or where correction of defective work or where additional work is ordered, which requires cutting or fitting, the Contractor responsible for such defective or ill-timed work shall, at his own expense, do all such cutting, fitting, patching or repairing.

6.The fire protection contractor shall meet with all other subcontractors, and the General Contractor to assure that the fire protection systems in now way hinder any other trade or sub contractor or systems.

ARTICLE 7 CHANGES IN THE WORK

7.1 CHANGES

A. Subparagraph 7.1.1 of the General Conditions is supplemented as follows:

No contractor shall have the right to prosecute or a suit-at-law to recover for an extra, unless his claim is based upon written change order signed by Owner.

B. Subparagraph 7.2.1 of the General Conditions is supplemented as follows:

In addition to information required by the General Conditions, Change Orders shall include itemized costs of related accessories separate from the cost of each item.

ARTICLE 8 TIME

8.2 PROGRESS AND COMPLETION

A. Subparagraph 8.2 of the General Conditions is supplemented as follows:

1.It is hereby understood and mutually agreed by and between Contractor and Owner that date of beginning, rate of progress and time for completion of work to be done hereunder are essential conditions of this contract.

2.Work shall proceed regularly, diligently and uninterrupted at such rate of progress as will insure the substantial completion of the work within the estimated completion time stated by Contractor or as otherwise established in the contract.

ARTICLE 9 PAYMENTS AND COMPLETION

9.3 APPLICATIONS FOR PAYMENT

1. Payments for this project will follow standard FRSA process – progress payments prepared for signature in first 5 days of the month, signed copy returned to FRSA no later than the 10th of the month, payment to occur after approval at Board meeting which is the 4th Monday of the month. Retainage to be 10% until project completion.

9.8 SUBSTANTIAL COMPLETION

A. Subparagraph 9.8 of the General Conditions is supplemented and modified as follows:

1.When the Architect determines that the work or designated portions thereof are substantially complete, the Architect will establish the date of substantial completion, as defined hereafter, and the date of acceptance of work by the Owner, through the use of a Certificate of Substantial Completion (AIA Document G704) and through other closing procedures which the Architect may direct. In any case, the Architect will prepare for submission to the Contractor a list of items to be completed or corrected hereafter referred to as the “punch list”. The failure to include any item on the punch list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents. The Architect will recommend final payment to the Contractor when the work on all punch lists is satisfactorily completed, all record drawings and guarantees are provided, and the Contractor meets all other requirements of the contract documents and paragraph 9.8 of the General Conditions.

2.Substantial Completion:

The Date of Substantial Completion of the Work or designated portion thereof is the Date certified by the Architect when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner can occupy the Work or designated portion thereof for the use for which it is intended.

On the Certificate of Substantial Completion, a time shall be fixed, not to exceed sixty (60) days, within which the Contractor shall finish all items on the final punch list accompanying the Certificate.

9.9 PARTIAL OCCUPANCY OR USE

A. Subparagraph 9.9.1 of the General Conditions is supplemented as follows:

1.In addition to all other precautions required by the Contract, such as barricades, signs, warning lights, etc., to make project completely safe for public use, the Contractor should provide and maintain dust tight barriers in the event of partial occupancy before substantial completion. Cost of barriers shall be paid by Contractor if project is behind schedule and by Owner if project is ahead of schedule.

2.Moving of equipment into building under other contracts or by the Owner will not constitute partial occupancy.

9.10 FINAL COMPLETION AND FINAL PAYMENT

A. Subparagraph 9.10.2 of the General Conditions is supplemented as follows:

1.Liens:

a. Neither the final payment nor any part of the retained percentage shall become due until the Contractor, if required, delivers to the Owner a complete release of all liens arising out of this contract, or receipts in full in lieu thereof and if required in either case, an affidavit that, so far as he has knowledge or information, the releases and receipts include all labor and material for which a lien could be filed; but the Contractor may, if any subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the Owner, to indemnify him against any lien. If any lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all moneys that the latter may be compelled to pay in discharging such a lien, including all costs and attorneys' fees.

ARTICLE 11 INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

A.Subparagraph 11.1.1 of the General Conditions is supplemented as follows:

1.During the term of the contract, the Contractor shall, at his own expense, purchase and maintain the following insurance in companies properly licensed and satisfactory to the Owner:

a. Workmen's Compensation including Occupational Disease and Employer's Liability Insurance.

1) State: Statutory amounts and coverage as required by Workman's Compensation Laws.

2) Worker's compensation insurance with statutory limits and employer's liability insurance with limits of not less than $500,000 per occurrence, per employee for disease and $500,000 aggregate for disease.

b. Comprehensive General Liability: Including coverage for direct operations, sublet work, contractual liability, completed operations and products liability, with limits not less than those stated below, which insurance shall fully protect him from claims for damages for bodily injury including accidental death, as well as claims or property damage and loss of use of property which may arise from activities under or incidental to the Contract, whether such activities be by himself or any of his subcontractors, or by anyone directly or indirectly employed or otherwise contracted by any of them.

1) Commercial general liability insurance with:

a)Limits of not less than $1,000,000.00.

b)Coverage to include:

i.Projects/completed operations to be maintained for a period of not less than three (3) years following the completion and final acceptance of the work;

ii. Project specific limits of liability;

iii. Contractual liability, specifically referring to the indemnity obligations in this Contract;

iv. Broad form property damage, including products/completed operations.

v.Personal injury liability with employee and contractual exclusions deleted.

vi. Deletion of explosion, collapse and underground (XCU) exclusions;

vii. Sever ability of interest and cross liability endorsements with copies attached to the certificate of insurance.

c)(Regarding Completed Operations and Products Liability - Continue coverage in force for one year after completion of the work and acceptance by the Owner.)

c.Personal Injury with Employment Exclusion Deleted:

1) $500,000 aggregate

2. Comprehensive automobile liability insurance with limits of $1,000,000.00 combined single limit covering owned, non-owned and hired vehicles.

B. Add a new subparagraph to General Conditions numbered 11.1.1.1, immediately prior to subparagraph 11.1.2 as follows:

1.The contractor shall also purchase and maintain such insurance as will protect the Owner (and his appointed "Owner's Representative") and the Architect and their agents and employees from and against all claims, damages, losses and expenses including attorneys' fees arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction

of tangible property (other than the work itself) including the loss of use resulting there from, and (2) is caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party to whom insurance is afforded pursuant to this paragraph.

2.In any and all claims against the Owner (and his appointed " Owner's Representative") or the Architect or any of their agents or employees by an employee of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the insurance obligation under this Paragraph shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under workman's compensation acts, disability benefit acts or other employee benefit acts.

3.The insurance obligations of the Contractor under this Paragraph shall not extend to the liability of the Architect, his agents or employees arising out of (1) the preparation of approval of maps, drawings, opinions, reports, surveys, Change Orders, designs, or specifications, or (2) the giving of or the failure to give directions or instructions by the Architect, his agents or employees provided such giving or failure to give is the primary cause of the injury or damage.

4.This insurance shall be for the same limits stated for the Contractor's other liability insurance.

C. Change the first line of subparagraph 11.1.2 of General Conditions to read as follows: "The insurance required by subparagraphs 11.1.1 and . . ."

D. All policies and certificates of insurance shall expressly provide that no less than sixty (60) days prior notice shall be given to Owner in the event of material alteration, cancellation or intent to non-renew the coverage evidenced by such policies or certificates of insurance.

E. Contractor shall carry sufficient comprehensive insurance on his equipment at site of work and en route to and from site to fully protect him; Contractor shall require the same coverage of his subcontractors. It is expressly understood and agreed that Owner and/or Architect shall have no responsibility therefore.

F. A certificate of insurance shall be filed with the Owner evidencing the coverage set forth above and including: An additional insured endorsement naming Owner, and any owned, affiliated or subsidiary company or corporation that is a party to this Contract and their board members, officers, employees, agents and consultants as additional insured. Any insurance maintained by the additional insureds shall be in excess of any coverage provided by the Contractor or its Subcontractors.

H. Intentionally left blank –

I. Contractors shall procure and maintain during the life of the Agreement, including any extensions thereof, the type of insurance specified, with insurance companies rated according to the most recent edition of A.M. Best, but not less than A (X).

1. Delete the semicolon at the end of Clause 11.1.1.1 and add:

including private entities performing Work at the site and exempt from the coverage on account of number of employees or occupation, which entities shall maintain voluntary compensation coverage at the same limits specified for mandatory coverage for the duration of the Project;

J. Delete the semicolon at the end of Clause 11.1.1.2 and add:

or persons or entities excluded by statute from the requirements of Clause 11.1.1.1 but required by the Contract Documents to provide the insurance required by that Clause;

K. Add the following clauses 11.1.1.9:

1.Liability Insurance shall include all major divisions of coverage and be on a comprehensive basis including:

a.Premises Operations (including X, C and U coverage as applicable).
b.Independent Contractors' Protective.
c.Products and Completed Operations.
d.Personal Injury Liability with Employment Exclusion deleted.
e.Owned, non-owned and hired motor vehicles.
f.Broad Form Property Damage including Completed Operations.

g.Completed operations coverage for two years after completion of the Work or for such longer period of time as described in the Contract Documents.
h.Waiver of Subrogation in favor of the additional insureds.
i.All policy or endorsements limitations relating specifically to operations pertaining to railroad property shall be eliminated. This is required only if the Work is on or within railroad property.

L. Add the following Clause 11.1.2.1 to 11.1.2:

1.The Contractor's Liability Insurance required by Subparagraph 11.1.1 shall be written for not less than the following limits, or greater if required by law:

a.State Statutory
b.Applicable Federal Statutory
c.Employer's Liability: $1,000,000 per Accident $1,000,000 Each Occurrence
d.Disease Policy Limit $1,000,000 Disease Each Employee

2.Commercial General Liability (including Premises Operations; Independent Contractor's Protective, Products and completed operations, Broad Form Property Damage): The limits of liability shall be written on an occurrence basis and shall provide coverage for not less than the following amounts:

a.Bodily Injury: $1,000,000 Each Occurrence, $1,000,000 Aggregate
b.Property Damage: $1,000,000 Each Occurrence, $1,000,000 Aggregate
c.Products and Completed Operations to be maintained for three (3) years after final payment: $1,000,000 Each Occurrence, $1,000,000 Aggregate
d.Property Damage Liability Insurance shall provide X, C and U coverage.
e.Broad Form Property Damage Coverage shall include Completed Operations.
f.Fire Legal Liability: $100,000 Each Occurrence

Note: Owner is added as an Additional Insured by Endorsement on the commercial general liability policy.

3.Broad Form Contractual Liability

a.Bodily Injury: $1,000,000 Each Occurrence, $1,000,000 Aggregate
b.Property Damage: $1,000,000 Each Occurrence, $1,000,000 Aggregate
c.Personal Injury with Employment Exclusion deleted: $1,000,000 Aggregate

4.Personal Injury Liability with Employment Exclusion deleted: $1,000,000 Aggregate

5. Business Auto Liability (including owned, non-owned and hired vehicles):

a.Bodily Injury: $1,000,000 Each Occurrence, $1,000,000 Aggregate
b.Property Damage: $1,000,000 Each Occurrence

Note: Owner is added as an Additional Insured by Endorsement on the automobile liability policy.

6.Umbrella Excess Liability

a.$2,000,000 Occurrence
b.$2,000,000 Aggregate
c.$10,000 for self insured hazards each occurrence

7.Aircraft Liability (owned and un-owned) when Aircraft are used in the performance of the Contract: $10,000,000 each occurrence combined single limit for bodily injury and property damage.

11.3 PROJECT MANAGEMENT PROTECTIVE LIABILITY INSURANCE

A.Subparagraph 11.3.1 of the General Conditions is supplemented as follows:

1.This insurance will be purchased and maintained by the contractor, and shall be subject to a maximum of $500.00 deductible and all losses falling within the scope of the deductible amount shall be borne by the Contractor.

11.4 PERFORMANCE AND PAYMENT BOND

A.Performance Bond and Payment Bond will not be required.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

12.2 CORRECTION OF WORK

A. Subparagraph 12.2.1 of the General Conditions is supplemented as follows:

1. Approval of any material or work at any stage of construction will not prevent its subsequent rejection for cause.

2. Guarantees and Warranties:

a.Nothing herein intends or implies that warranties or guarantees shall apply to work which has been abused or neglected by Owner or his successor in interest, or which has been subject to usual wear and tear or accidental damage not chargeable to Contractor or his agents.

b.Guarantee and Warranty time periods shall commence with the date of acceptance by Owner of the Certificate of Substantial Completion except as related to items of incomplete or uncorrected work noted on the Certificate's Punch List. The guarantee and warranty time periods for Punch List item shall commence with the date of Final Completion established by the Architect's issuance of the final certificate of payment.

c.The Contractor is obligated to correct at his own expense for a period of one year or such longer period as may be specified, all work found defective or not in accordance with the contract documents. This shall not establish a period of limitation with respect to any other obligation, which the Contractor might have under the contract.

ARTICLE 13 MISCELLANEOUS PROVISIONS

13.5 TESTS AND INSPECTIONS

A.Subparagraph 13.5.2 of the General Conditions is supplemented as follows:

1.The laboratory or inspection agency will be by the Owner and will perform, or cause to be performed, tests necessary to determine if specified results have been obtained. Contractor shall call for and schedule testing.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 TERMINATION BY THE CONTRACTOR

A.Subparagraph 14.1.1 if the General Conditions is supplemented as follows:

1.If the work should be stopped under an order of any court, or other public authority for a period of thirty (30) days, through no act or fault of the Contractor or of anyone employed by him, then the contractor may, upon twenty-one (21) days written notice to the Owner and the Architect, terminate this Contract and recover from the Owner payment for all work executed and any proven loss sustained for any materials and reasonable profit and damages.

2.If the Architect, or Owner if the architect is not reviewing payment requests under design build projects, has not issued a certificate for payment, through no fault of the Contractor, within twenty-one (21) days after the contractor's formal request for payment, or if the Owner has not made payment to the Contractor within twenty-one (21) days of its maturity and presentation, then the Contractor may, upon twenty-one (21) days written notice to the Owner and Architect, stop the work or terminate this Contract as set out in the preceding paragraph.

ARTICLE 15 CLAIMS AND DISPUTES

15.1 CLAIMS AND DISPUTES

A. Subparagraph 15.1 of the General Conditions is supplemented as follows:

1. Whenever any employee, agent or other representative of Contractor, or any employee, agent or other representative of a subcontractor, whose activities on or about the site arise out of the work of a contractor, shall cause or be a substantial factor in causing any damage (including but not limited to breaking, burning, overheating, freezing, exposing disconnecting, misconnecting, failing to guard or protect, and depriving of support) to the work, materials or property of a third party (including but not limited to the Owner, other contractors, subcontractors, material suppliers, delivery persons, frequenters, security holders, adjacent land owners, bodies politic, utilities or members of the public) such Contractor or Subcontractor shall promptly proceed to remedy and

correct such damage and to pay all costs, expenses and damages involved. To the extent that such Contractor or Subcontractor shall fail to do so, he shall be accountable, under his contract with the Owner, for all damages to the Owner directly or consequentially arising there from whether liquidated or not, and whether certain or contingent, including but not limited to costs of renovation, repair, replacement or relocation, vicarious liabilities, losses by delays, charges for architectural or their services, and extra costs, charges, work or materials of every description. Upon certification by the Architect of the identity of the responsible party and of the extent of such damage so cause, Owner shall be entitled for its security, to withhold or deduct from payments otherwise due such contractor any sum reasonably estimated to be required to secure Owner's right to such account, until Owner shall otherwise be fully indemnified and made whole. Such liability to account shall be deemed contractual and shall arise regardless of whether or not circumstances of conventional tort are present or proven, and shall bind the sureties and indemnitors of such Contractor or Subcontractor but the Owner shall not be deemed to have waived, released, settled or otherwise impaired its right to full account by reason of any payment, withholding, deduction, failure to withhold or deduct, or other form of claim or failure to claim; and in no event shall exercise or non-exercise of the Owner's right to be deemed or implied to impose on the Owner any liability toward any other person; or to affect, except as expressly provided, the rights or liabilities of any of the parties arising independently of this provision.

2. Whenever the Contractor or Subcontractors whose activities cause any such damage cannot in the opinion of the Architect, be specifically ascertained, or whenever a Contractor's or Subcontractor's proportionate responsibility to account therefore according to the foregoing provisions cannot, in the opinion of the Architect, be finally determined, the party to whose work sections the damage pertains shall proceed promptly to remedy and correct such damage, as extra work, and the reasonable charges for so doing, together with the amounts of any further damages which may so arise, shall be certified by the Architect to the Owner, with authorization to charge the aggregate sum to the respective accounts of all contractors who, directly or through subcontractors, material suppliers or delivery persons were engaged in any activity at the site of the damage when it arose, in proportion to the gross amounts of their respective contracts. Such allocated accountability shall continue as security to the Owner, until a different accountability is ascertained, in the opinion of the Architect or until the Owner is otherwise fully indemnified and made whole.

END OF SECTION

SECTION 01 1000

SUMMARY

PART 1 GENERAL

1.01 PROJECT

A. Owner's Name: Four Rivers Sanitation Authority.

B. Architects's Name: Blakemore Architects, Inc.

C. The Project consists of the construction of a new building with erection of previously bid red iron steel package (including the fabrication, Storage at fabricators yard until ready for erection and delivery to the project job site). Site Construction and Landscape work to be part of this bid.

1.02 CONTRACT DESCRIPTION

A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 00 5200 - Agreement Form.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 2500

SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedural requirements for proposed substitutions.

1.02 RELATED REQUIREMENTS

A. Section 00 2113 - Instructions to Bidders: Restrictions on timing of substitution requests.

B. Section 01 3000 - Administrative Requirements: Submittal procedures, coordination.

C. Section 01 6000 - Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling.

1.03 DEFINITIONS

A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.

1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
    a. Unavailability.
    b. Regulatory changes.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:

1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
2. Agrees to provide the same warranty for the substitution as for the specified product.
3. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
4. Waives claims for additional costs or time extension that may subsequently become apparent.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.

C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.

D. Limit each request to a single proposed substitution item.

3.02 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Blakemore Architects, in order to stay on approved project schedule.

B. Submit request for Substitution for Convenience immediately upon discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Blakemore Architects, in order to stay on approved project schedule.

1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
3. Bear the costs engendered by proposed substitution of:

a. Owner's compensation to the Blakemore Architects for any required redesign, time spent processing and evaluating the request.

3.03 RESOLUTION

A. Blakemore Architects may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.

3.04 ACCEPTANCE

A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

END OF SECTION

SECTION 01 3000

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General administrative requirements.

B. Number of copies of submittals.

C. Requests for Interpretation (RFI) procedures.

D. Submittal procedures.

1.02 GENERAL ADMINISTRATIVE REQUIREMENTS

A. Conform to requirements of Section 01 7000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.

B. Make the following types of submittals to FRSA who will distribute to Blakemore Architects:
   1. Requests for Interpretation (RFI).
   2. Shop drawings, product data, and samples.
   3. Applications for payment and change order requests.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 REQUESTS FOR INTERPRETATION (RFI)

A. Definition: A request seeking one of the following:
   1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.

3.02 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
   1. Shop drawings.

B. Submit to FRSA who will distribute to Blakemore Architects for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.

C. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below.

3.03 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
   1. Shop Drawings.

B. Submit for Blakemore Architects's knowledge as architect for Owner.

3.04 NUMBER OF COPIES OF SUBMITTALS

A. Documents for Review:
   1. Larger Sheets, Not Larger Than 36 by 48 inches: Submit the number of opaque reproductions that Contractor requires, plus two copies that will be retained by FRSA and Blakemore Architects.

3.05 SUBMITTAL PROCEDURES

A. General Requirements:
   1. Use a separate transmittal for each item.
   2. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.

a. Deliver submittals to FRSA who will distribute to Blakemore Architects at business address.

3. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
4. When revised for resubmission, identify all changes made since previous submission.
5. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.

B. Shop Drawing Procedures:
1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting the Contract Documents and coordinating related work.
2. Do not reproduce the Contract Documents to create shop drawings.
3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.

C. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.

D. When revised for resubmission, identify all changes made since previous submission.

E. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.

F. Submittals not requested will not be recognized or processed.

END OF SECTION

SECTION 01 3216

CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Construction progress schedule, bar chart type.

1.02 RELATED SECTIONS

A. Section 01 1000 - Summary: Work sequence.

1.03 SUBMITTALS

A. Within 10 days after date of Agreement, submit preliminary schedule.

B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

C. Submit updated schedule every 30 days to Owner and Architect.

D. Submit under transmittal letter form specified in Section 01 3000 - Administrative Requirements.

1.04 SCHEDULE FORMAT

A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTENT

A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.

B. Identify work of separate stages and other logically grouped activities.

C. Include conferences and meetings in schedule.

D. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.

E. Provide legend for symbols and abbreviations used.

3.02 BAR CHARTS

A. Include a separate bar for each major portion of Work or operation.

B. Identify the first work day of each week.

3.03 REVIEW AND EVALUATION OF SCHEDULE

A. Evaluate project status to determine work behind schedule and work ahead of schedule.

B. After review, revise as necessary as result of review, and resubmit within 10 days.

3.04 UPDATING SCHEDULE

A. Maintain schedules to record actual start and finish dates of completed activities.

B. Indicate progress of each activity to date of revision, with projected completion date of each activity.

C. Annotate diagrams to graphically depict current status of Work.

D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.

E. Indicate changes required to maintain Date of Substantial Completion.

F. Submit reports required to support recommended changes.

3.05 DISTRIBUTION OF SCHEDULE

A. Distribute copies of updated schedules to Contractor's project site file, to subcontractors, suppliers, Blakemore Architects, Owner, and other concerned parties.

B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

END OF SECTION

SECTION 01 4000

QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. References and standards.

B. Submittals.

C. Quality assurance.

D. Control of installation.

E. Tolerances.

F. Testing and inspection agencies and services.

G. Control of installation.

H. Tolerances.

I. Manufacturers' field services.

J. Defect Assessment.

K. Construction Staking.

1.02 RELATED REQUIREMENTS

A. Document 00 3100 - Available Project Information: Soil investigation data.

B. Document 00 7200 - General Conditions: Inspections and approvals required by public authorities.

C. Section 01 3000 - Administrative Requirements: Submittal procedures.

D. Section 01 6000 - Product Requirements: Requirements for material and product quality.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Testing Agency Qualifications:
   1. Prior to start of Work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.

C. Design Data: Submit for Blakemore Architects's knowledge and for Owner, for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
   1. Include required product data and shop drawings.
   2. Include a statement or certification attesting that design data conforms to criteria indicated, such as building codes, loads, functional, and similar engineering requirements.
   3. Include signature and seal of design professional responsible for allocated design services on calculations and drawings.

D. Test Reports: After each test/inspection, promptly submit two copies of report to Blakemore Architects and to Contractor.
   1. Include:
      a. Date issued.
      b. Project title and number.
      c. Name of inspector.
      d. Date and time of sampling or inspection.
      e. Identification of product and specifications section.
      f. Location in the Project.
      g. Type of test/inspection.
      h. Date of test/inspection.
      i. Results of test/inspection.
      j. Conformance with Contract Documents.

k. When requested by Blakemore Architects, provide interpretation of results.

2. Test reports are submitted for Blakemore Architects's knowledge and for Owner, for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

E. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Blakemore Architects, in quantities specified for Product Data.
   1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
   2. Certificates may be recent or previous test results on material or product, but must be acceptable to Blakemore Architects.

F. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

G. Manufacturer's Field Reports: Submit reports for Blakemore Architects's benefit and for Owner.
   1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the Contract Documents.

1.04 QUALITY ASSURANCE

A. Testing Agency Qualifications:
   1. Prior to start of work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.

1.05 TESTING AND INSPECTION AGENCIES AND SERVICES

A. Contractor shall employ and pay for services of an independent testing agency to perform other specified testing.

B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

C. Contractor shall provide surveyor services for all site, building and utility placement layout and staking, and for verification of installed foundations.

D. Contractor Employed Agency:
   1. Testing agency: Comply with requirements of ASTM E329, ASTM E 548, ASTM E543, ASTM C1021, ASTM C1077, and ASTM C1093.
   2. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

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

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

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Blakemore Architects before proceeding.

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

E. Have work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

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

3.02 TOLERANCES

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

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Blakemore Architects before proceeding.

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

3.03 TESTING AND INSPECTION

A. See individual specification sections for testing required.

B. Testing Agency Duties:
   1. Provide qualified personnel at site. Cooperate with Blakemore Architects and Contractor in performance of services.
   2. Perform specified sampling and testing of products in accordance with specified standards.
   3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
   4. Promptly notify Blakemore Architects and Contractor of observed irregularities or non-conformance of Work or products.
   5. Perform additional tests and inspections required by Blakemore Architects.
   6. Submit reports of all tests/inspections specified.

C. Limits on Testing/Inspection Agency Authority:
   1. Agency may not approve or accept any portion of the Work.
   2. Agency may not assume any duties of Contractor.
   3. Agency has no authority to stop the Work.

D. Contractor Responsibilities:
   1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
   2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
   3. Provide incidental labor and facilities:
      a. To provide access to Work to be tested/inspected.
      b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
      c. To facilitate tests/inspections.
      d. To provide storage and curing of test samples.
   4. Notify Blakemore Architects and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
   5. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

3.04 MANUFACTURERS' FIELD SERVICES

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

B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.05 DEFECT ASSESSMENT

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

B. If, in the opinion of Blakemore Architects, it is not practical to remove and replace the work, Blakemore Architects will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 01 5000

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary utilities.

B. Temporary sanitary facilities.

C. Temporary Controls: Barriers and enclosures.

D. Security requirements.

E. Vehicular access and parking.

F. Waste removal facilities and services.

G. Field offices.

1.02 RELATED REQUIREMENTS

A. Section 01 5100 - Temporary Utilities.

B. Section 01 5213 - Field Offices and Sheds.

1.03 TEMPORARY UTILITIES - SEE SECTION 01 5100

A. General Contractor is responsible for all temporary utilities, including water and power
   1. Electrical power and metering, consisting of Temp. power and perminant power.
   2. Water supply, consisting of Temporary and perminant water for construction use.

B. New permanent facilities may be used [if approved by the Owner].

1.04 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.

B. Maintain daily in clean and sanitary condition.

1.05 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.

C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.06 EXTERIOR ENCLOSURES

A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.07 INTERIOR ENCLOSURES

A. Provide temporary partitions and ceilings as required to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.

B. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces:

1.08 SECURITY

A. Protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

B. Coordinate with Owner's security program.

1.09 VEHICULAR ACCESS AND PARKING - SEE SECTION 01 5500

A. Coordinate access and haul routes with governing authorities and Owner.

B. Provide and maintain access to fire hydrants, free of obstructions.

C. Provide means of removing mud from vehicle wheels before entering streets.

D. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

1.10 WASTE REMOVAL

A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

B. Provide containers with lids. Remove trash from site periodically.

C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.11 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.

B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.

C. Clean and repair damage caused by installation or use of temporary work.

D. Restore new permanent facilities used during construction to specified condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 5100

TEMPORARY UTILITIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary Utilities: Electricity, lighting, heat, ventilation, water, and air conditioning.

1.02 RELATED REQUIREMENTS

A. Section 01 5000 - Temporary Facilities and Controls: Telephone service for administrative purposes.

1.03 TEMPORARY ELECTRICITY

A. Cost: By General Contractor.

B. Provide power service required from utility source.

C. Provide temporary electric feeder from nearest source as directed by electric utility electrical service at location as directed.

D. Provide power outlets for construction operations, with branch wiring and distribution boxes located as required. Provide flexible power cords as required.

E. Provide main service disconnect and over-current protection at convenient location and meter.

F. Permanent convenience receptacles may be utilized during construction.

G. Provide adequate distribution equipment, wiring, and outlets to provide single phase branch circuits for power and lighting.

1.04 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

A. Provide and maintain LED, compact fluorescent, or high-intensity discharge lighting as suitable for the application for construction operations in accordance with requirements of 29 CFR 1926 and authorities having jurisdiction.

B. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.

C. Maintain lighting and provide routine repairs.

D. Permanent building lighting may be utilized during construction.

1.05 TEMPORARY HEATING

A. Cost of Energy: By General Contractor

B. Provide heating devices and heat as needed to maintain specified conditions for construction operations.

C. Maintain minimum ambient temperature of 50 degrees F in areas where construction is in progress, unless indicated otherwise in specifications.

1.06 TEMPORARY COOLING

A. Cost of Energy: By Contractor.

B. Provide cooling devices and cooling if needed to maintain specified conditions for construction operations.

C. Maintain maximum ambient temperature of 80 degrees F in areas where construction is in progress, unless indicated otherwise in specifications.

1.07 TEMPORARY VENTILATION

A. Utilize existing ventilation equipment. Extend and supplement equipment with temporary fan units as required to maintain clean air for construction operations.

1.08 TEMPORARY WATER SERVICE

A. Cost of Water Used: By General Contractor.

B. Provide and maintain suitable quality water service for construction operations at time of project mobilization.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 6000

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General product requirements.

B. Transportation, handling, storage and protection.

C. Product option requirements.

D. Substitution limitations.

E. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

A. Document 00 2113 - Instructions to Bidders: Product options and substitution procedures prior to bid date.

B. Section 01 2500 - Substitution Procedures: Substitutions made during and after the Bidding/Negotiation Phase.

C. Section 01 4000 - Quality Requirements: Product quality monitoring.

1.03 REFERENCE STANDARDS

A. NEMA MG 1 - Motors and Generators; 2017.

B. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

D. Indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

PART 2 PRODUCTS

2.01 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by the Contract Documents.

B. DO NOT USE products having any of the following characteristics:

1. Containing lead, cadmium, asbestos.

C. Provide interchangeable components of the same manufacture for components being replaced.

D. Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Size terminal lugs to NFPA 70, include lugs for terminal box.

E. Cord and Plug: Provide minimum 6 foot cord and plug including grounding connector for connection to electric wiring system. Cord of longer length is specified in individual specification sections.

2.02 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.03 MAINTENANCE MATERIALS

A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.

B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

A. See Section 01 2500 - Substitution Procedures.

B. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.

C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

D. A request for substitution constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
   2. Will provide the same warranty for the substitution as for the specified product.
   3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.
   5. Will reimburse Owner and Blakemore Architects for review or redesign services associated with re-approval by authorities.

E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

F. Substitution Submittal Procedure:
   1. Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.
   2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
   3. The Blakemore Architects will notify Contractor in writing of decision to accept or reject request.

3.02 OWNER-SUPPLIED PRODUCTS

A. Owner's Responsibilities:
   1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
   2. Arrange and pay for product delivery to site.
   3. On delivery, inspect products jointly with Contractor.
   4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
   5. Arrange for manufacturers' warranties, inspections, and service.

B. General Contractor's Responsibilities:
   1. Review Owner reviewed shop drawings, product data, and samples.
   2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
   3. Handle, store, install and finish products.
   4. Repair or replace items damaged after receipt.

3.03 TRANSPORTATION AND HANDLING

A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.

B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

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

E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.

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

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

H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.04 STORAGE AND PROTECTION

A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.

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

C. Store with seals and labels intact and legible.

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

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

F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.

G. Comply with manufacturer's warranty conditions, if any.

H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

I. Prevent contact with material that may cause corrosion, discoloration, or staining.

J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 01 7000

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Requirements for alterations work, including selective demolition, ..

C. Pre-installation meetings.

D. Cutting and patching.

E. Surveying for laying out the work.

F. Cleaning and protection.

G. Starting of systems and equipment.

H. Demonstration and instruction of Owner personnel.

I. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

J. General requirements for maintenance service.

1.02 RELATED REQUIREMENTS

A. Section 01 3000 - Administrative Requirements: Submittals procedures, Electronic document submittal service.

B. Section 01 4000 - Quality Requirements: Testing and inspection procedures.

C. Section 01 5000 - Temporary Facilities and Controls: Temporary exterior enclosures.

D. Section 01 5100 - Temporary Utilities: Temporary heating, cooling, and ventilating facilities.

E. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties, and bonds.

F. Section 07 8400 - Firestopping.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
   1. Structural integrity of any element of Project.
   2. Integrity of weather exposed or moisture resistant element.
   3. Efficiency, maintenance, or safety of any operational element.
   4. Visual qualities of sight exposed elements.
   5. Work of Owner or separate Contractor.
   6. Include in request:
      a. Identification of Project.
      b. Location and description of affected work.
      c. Necessity for cutting or alteration.
      d. Description of proposed work and products to be used.
      e. Alternatives to cutting and patching.
      f. Effect on work of Owner or separate Contractor.
      g. Written permission of affected separate Contractor.
      h. Date and time work will be executed.

C. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.04 QUALIFICATIONS

A. For survey work, G.C shall employ a land surveyor registered in Illinois. Submit evidence of Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate.

B. For field engineering, employ a professional engineer of the discipline required for specific service on Project, licensed in Illinois. Employ only individual(s) trained and experienced in

establishing and maintaining horizontal and vertical control points necessary for laying out construction work on project of similar size, scope and/or complexity.

1.05 PROJECT CONDITIONS

A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion. Provide of necessary EPA permits.

C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

D. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
   1. Minimize amount of bare soil exposed at one time.
   2. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
   3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
   4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
   5. Provide Silt fencing as required by local authority.

E. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.

1.06 COORDINATION

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

B. Notify affected utility companies and comply with their requirements.

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

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

E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

F. Coordinate completion and clean-up of work of separate sections.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.

E. Verify that utility services are available, of the correct characteristics, and in the correct locations.

F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.

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

C. Notify Owner and Architect four days in advance of meeting date.

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

E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Blakemore Architects, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Contractor shall locate and protect survey control and reference points.

C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

D. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to civil engineer and owner.

E. Utilize recognized engineering survey practices.

F. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
   1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
   2. Grid or axis for structures.
   3. Building foundation, column locations, ground floor elevations.

G. Periodically verify layouts by same means.

H. Maintain a complete and accurate log of control and survey work as it progresses.

3.05 GENERAL INSTALLATION REQUIREMENTS

A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.06 ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as indicated.
   2. Report discrepancies to Blakemore Architects before disturbing existing installation.
   3. Beginning of alterations work constitutes acceptance of existing conditions.

B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
   1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
   2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.

C. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on drawings.
   2. Relocate items indicated on drawings.
   3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
   4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.

D. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, Telecommunications, and Security Systems): Remove, relocate, and extend existing systems to accommodate new construction.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
   2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
   3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
      a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
      b. Provide temporary connections as required to maintain existing systems in service.
   4. Verify that abandoned services serve only abandoned facilities.
   5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.

E. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.

F. Adapt existing work to fit new work: Make as neat and smooth transition as possible.

G. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.

H. Refinish existing surfaces as indicated:
   1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
   2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.

I. Clean existing systems and equipment.

J. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.

K. Do not begin new construction in alterations areas before demolition is complete.

L. Comply with all other applicable requirements of this section.

3.07 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.

B. See Alterations article above for additional requirements.

C. Perform whatever cutting and patching is necessary to:
   1. Complete the work.
   2. Fit products together to integrate with other work.
   3. Provide openings for penetration of mechanical, electrical, and other services.
   4. Match work that has been cut to adjacent work.
   5. Repair areas adjacent to cuts to required condition.
   6. Repair new work damaged by subsequent work.
   7. Remove samples of installed work for testing when requested.
   8. Remove and replace defective and non-conforming work.

D. Execute cutting and patching including excavation and fill to complete the work, to uncover work in order to install improperly sequenced work, to remove and replace defective or non-conforming work, to remove samples of installed work for testing when requested, to provide openings in the work for penetration of mechanical and electrical work, to execute patching to complement adjacent work, and to fit products together to integrate with other work.

E. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

F. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.

G. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

H. Restore work with new products in accordance with requirements of Contract Documents.

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

J. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.

K. Patching:
   1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
   2. Match color, texture, and appearance.
   3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

L. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

M. Make neat transitions. Patch work to match adjacent work in texture and appearance.

3.08 PROGRESS CLEANING

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

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.09 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

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

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

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

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

G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.10 SYSTEM STARTUP

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

B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.

C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

D. Verify that wiring and support components for equipment are complete and tested.

E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.

F. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.11 DEMONSTRATION AND INSTRUCTION

A. Demonstrate operation and maintenance of products to Owner's tennant personnel two weeks prior to date of Substantial Completion.

B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.

C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

D. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of Owner's personnel.

3.12 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.13 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.

B. Use cleaning materials that are nonhazardous.

C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

F. Clean filters of operating equipment.

G. Clean debris from roofs, downspouts, overflow drains, area drains, and drainage systems.

H. Clean site; sweep paved areas, rake clean landscaped surfaces.

I. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.14 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.
   1. Provide copies to Blakemore Architects and Owner.

B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.

C. Notify Blakemore Architects when work is actually ready for Substantial Completion walk through.

D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Blakemore Architects's Substantial Completion inspection.

E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Blakemore Architects's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Blakemore Architects.

F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

G. Accompany Project Coordinator on Contractor's preliminary final inspection.

H. Notify PCI and the Architect when work is considered finally complete.

I. Complete items of work determined by Blakemore Architects listed in executed Certificate of Substantial Completion.

3.15 MAINTENANCE

A. Provide service and maintenance of components indicated in specification sections.

B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.

C. Furnish service and maintenance of components indicated in specification sections for one year from date of Substantial Completion.

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

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

F. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

SECTION 01 7800

CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project Record Documents.

B. Operation and Maintenance Data.

C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

A. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

B. Section 01 7000 - Execution and Closeout Requirements: Contract closeout procedures.

C. Individual Product Sections: Specific requirements for operation and maintenance data.

D. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

A. Project Record Documents: Submit documents to Architect for review and then they will be forwarded to the Owner for review.

B. Operation and Maintenance Data:
   1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Blakemore Architects will review draft and return one copy with comments.
   2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
   3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Blakemore Architects comments. Revise content of all document sets as required prior to final submission.
   4. Submit two sets of revised final documents in final form within 10 days after final inspection.

C. Warranties and Bonds:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
   2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other modifications to the Contract.
   5. Reviewed shop drawings, product data, and samples.
   6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.
   3. Changes made by Addenda and modifications.

F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
   1. Measured depths of foundations in relation to finish first floor datum.
   2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
   3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
   4. Field changes of dimension and detail.
   5. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.

B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:
   1. Product data, with catalog number, size, composition, and color and texture designations.
   2. Information for re-ordering custom manufactured products.

B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

C. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:
   1. Description of unit or system, and component parts.
   2. Identify function, normal operating characteristics, and limiting conditions.
   3. Include performance curves, with engineering data and tests.
   4. Complete nomenclature and model number of replaceable parts.

B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

C. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

D. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

E. Provide servicing and lubrication schedule, and list of lubricants required.

F. Include manufacturer's printed operation and maintenance instructions.

G. Include sequence of operation by controls manufacturer.

H. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

I. Provide control diagrams by controls manufacturer as installed.

J. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.

K. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

L. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

M. Include test and balancing reports.

N. Additional Requirements: As specified in individual product specification sections.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.

B. Where systems involve more than one specification section, provide separate tabbed divider for each system.

C. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

D. Prepare data in the form of an instructional manual.

E. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.

F. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.

G. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Blakemore Architects, Consultants, Contractor and subcontractors, with names of responsible parties.

H. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.

I. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.

J. Text: Manufacturer's printed data, or typewritten data on 24 pound paper.

K. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

L. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, in three parts as follows:

1. Part 1: Directory, listing names, addresses, and telephone numbers of Blakemore Architects, Contractor, Subcontractors, and major equipment suppliers.
2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
    a. Significant design criteria.
    b. List of equipment.
    c. Parts list for each component.
    d. Operating instructions.

e. Maintenance instructions for equipment and systems.
f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.

3. Part 3: Project documents and certificates, including the following:
a. Shop drawings and product data.
b. Air and water balance reports.
c. Certificates.
d. Photocopies of warranties and bonds.

M. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Blakemore Architects, Consultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.

N. Provide a digital copy of all close-out documents and warrantee data.

3.06 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

E. Manual: Bind in commercial quality 8-1/2 by 11 inch three D side ring binders with durable plastic covers.

F. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.

G. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.

H. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

END OF SECTION

SECTION 02 4100

DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of built site elements.

1.02 RELATED REQUIREMENTS

A. Section 01 1000 - Summary: Sequencing and staging requirements.

B. Section 01 5000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.

C. Section 01 7000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

D. Section 31 2323 - Fill: Fill material for filling holes, pits, and excavations generated as a result of removal operations.

1.03 REFERENCE STANDARDS

A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.

B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

PART 3 EXECUTION

2.01 SCOPE

A. Remove portions of existing buildings in the following sequence:
   1. See Civil Drawings for locations of existing home sites..
   2. See Proposal Form and Section 31 2000 Earth Moving for Additional information associated with site demolition items.

B. Remove paving and curbs as required to accomplish new work.

C. Within area of new construction, remove foundation walls and footings to a minimum of 4 feet below finished grade.
   1. See Civil Drawings for locations of existing home sites.
   2. See Proposal Form and Section 31 2000 Earth Moving for Additional information associated with site demolition items

D. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as specified in Section 31 2200.

2.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   3. Provide, erect, and maintain temporary barriers and security devices.
   4. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
   5. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   6. Do not close or obstruct roadways or sidewalks without permit.
   7. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.

8. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.

B. Do not begin removal until receipt of notification to proceed from Owner.

C. Protect existing structures and other elements that are not to be removed.
   1. Provide bracing and shoring.
   2. Prevent movement or settlement of adjacent structures.
   3. Stop work immediately if adjacent structures appear to be in danger.

D. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.

2.03 EXISTING UTILITIES

A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

2.04 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.

C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 03 0516

UNDERSLAB VAPOR BARRIER

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sheet vapor barrier under concrete slabs on grade.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete: Preparation of subgrade, granular fill, placement of concrete.

1.03 REFERENCE STANDARDS

A. ASTM E1643 - Standard Practice for Selection, Design, Installation and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs; 2011 (Reapproved 2017).

B. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2017.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Submit manufacturers' data on manufactured products.

C. Samples: Submit samples of underslab vapor barrier to be used.

D. Manufacturer's Installation Instructions: Indicate installation procedures and interface required with adjacent construction.

PART 2 PRODUCTS

2.01 MATERIALS

A. Underslab Vapor Barrier:
   1. Water Vapor Permeance: Not more than 0.010 perms, maximum.
   2. Thickness: 10 mils.
   3. Basis of Design:
      a. Stego Industries LLC; Stego Wrap Vapor Barrier: www.stegoindustries.com.

B. Accessory Products: Vapor barrier manufacturer's recommended tape, adhesive, mastic, etc., for sealing seams and penetrations in vapor barrier.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install vapor barrier in accordance with manufacturer's instructions and ASTM E1643.

B. Install vapor barrier under interior slabs on grade; lap sheet over footings and seal to foundation walls.

C. Lap joints minimum 6 inches.

D. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions.

E. No penetration of vapor barrier is allowed except for reinforcing steel and permanent utilities.

F. Repair damaged vapor retarder before covering with other materials.

END OF SECTION

SECTION 03 1000

CONCRETE FORMING AND ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Formwork for cast-in place concrete, with shoring, bracing and anchorage.

B. Openings for other work.

C. Form accessories.

D. Form stripping.

1.02 RELATED REQUIREMENTS

A. Section 03 20 00 - Concrete Reinforcing.

B. Section 03 30 00 - Cast-in-Place Concrete.

C. Section 07 21 00 - Building Insulation: Rigid insulation

1.03 REFERENCE STANDARDS

A. ACI 117 - Standard Specifications for Tolerances for Concrete Construction and Materials; 2010.

B. ACI 301 Specifications for Structural Concrete; 2010 (Errata 2012).

C. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; 2011.

D. ACI 347R - Guide to Formwork for Concrete; 2014.

E. ASME A17.1- Safety Code for Elevators and Escalators; 2013.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver prefabricated forms and installation instructions in manufacturer's packaging.

B. Store prefabricated forms off ground in ventilated and protected manner to prevent deterioration from moisture.

PART 2 PRODUCTS

2.01 FORMWORK - GENERAL

A. Provide concrete forms, accessories, shoring, and bracing as required to accomplish cast-in-place concrete work.

B. Design and construct to provide resultant concrete that conforms to design with respect to shape, lines, and dimensions.

C. Comply with applicable state and local codes with respect to design, fabrication, erection, and removal of formwork.

D. Comply with relevant portions of ACI 347R, ACI 301, and ACI 318.

2.02 WOOD FORM MATERIALS

A. Form Materials: At the discretion of the Contractor.

2.03 REMOVABLE PREFABRICATED FORMS

A. Preformed Steel Forms: Minimum 16 gage, 0.0598 inch thick, matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.

B. Void Forms: Moisture resistant treated paper faces, biodegradable, structurally sufficient to support weight of wet concrete mix until initial set; 2 inches thick.

2.04 FORMWORK ACCESSORIES

A. Form Ties: Snap-off type, galvanized metal, fixed length, free of defects that could leave holes larger than 1 inch in concrete surface.

B. Form Release Agent: Capable of releasing forms from hardened concrete without staining or discoloring concrete or forming bugholes and other surface defects, compatible with concrete and form materials, and not requiring removal for satisfactory bonding of coatings to be applied.
   1. Composition: Colorless mineral oil-based, soy-based, or vegetable-oil based compound.
   2. Do not use materials containing diesel oil or petroleum-based compounds.
   3. VOC Content: None; water-based.
   4. Products:
      a. SpecChem, LLC; Bio Strip WB (water-based): www.specchemllc.com/sle.
      b. W.R. Meadows, Inc; Duogard: www.wrmeadows.com/sle.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

C. Dowel Sleeves: Plastic sleeve and nailable plastic base for smooth, round, steel load-transfer dowels.
   1. Products:
      a. BoMetals, Inc; QuicDowel: www.bometals.com/sle.
      b. Substitutions: See Section 01 60 00 - Product Requirements.

D. Expanded Metal Lath Tie Wire: 16-gage

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with drawings.

3.02 ERECTION - FORMWORK

A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301.

B. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.

C. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.

D. Align joints and make watertight. Keep form joints to a minimum.

E. Obtain approval before framing openings in structural members that are not indicated on drawings.

F. Install void forms in accordance with manufacturer's recommendations. Protect forms from moisture or crushing.

G. Coordinate this section with other sections of work that require attachment of components to formwork.

H. If formwork is placed after reinforcement, resulting in insufficient concrete cover over reinforcement, request instructions from Architect before proceeding.

I. Lap expanded metal lath sheets 4 to 6 inches at ends and 2-rib minimum at sides.

3.03 APPLICATION - FORM RELEASE AGENT

A. Apply form release agent on formwork in accordance with manufacturer's recommendations.

B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.

3.04 INSERTS, EMBEDDED PARTS, AND OPENINGS

A. Provide formed openings where required for items to be embedded in passing through concrete work.

B. Install accessories in accordance with manufacturer's instructions, so they are straight, level, and plumb. Ensure items are not disturbed during concrete placement.

C. Install rigid insulation specified under Section 07 21 00 between formwork faces, allowing for full concrete cover of reinforcing and ensuring that insulation will not be displaced by concrete pour.

3.05 FORM CLEANING

A. Clean forms as erection proceeds, to remove foreign matter within forms.

B. Clean formed cavities of debris prior to placing concrete.
   1. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.
   2. During cold weather, remove ice and snow from within forms. Do not use de-icing salts. Do not use water to clean out forms, unless formwork and concrete construction proceed within heated enclosure. Use compressed air or other means to remove foreign matter.

3.06 FORMWORK TOLERANCES

A. Construct formwork to maintain tolerances required by ACI 117, unless otherwise indicated.

B. Construct and align formwork for elevator hoistway in accordance with ASME A17.1.

3.07 FORM REMOVAL

A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.

B. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.

C. Store removed forms to prevent damage to form materials or to fresh concrete. Discard damaged forms.

END OF SECTION

SECTION 03 2000

CONCRETE REINFORCING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Reinforcing steel for cast-in-place concrete.

B. Supports and accessories for steel reinforcement.

1.02 RELATED REQUIREMENTS

A. Section 03 10 00 - Concrete Forming and Accessories.

B. Section 03 30 00 - Cast-in-Place Concrete.

1.03 REFERENCE STANDARDS

A. ACI 301 - Specifications for Structural Concrete; 2010 (Errata 2012).

B. ACI SP-66 - ACI Detailing Manual; 2004.

C. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement; 2015.

D. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2015.

E. CRSI (DA4) - Manual of Standard Practice; 2009.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Comply with requirements of ACI SP-66. Include bar schedules, shapes of bent bars, spacing of bars, and location of splices.

1. Prepare shop drawings under seal of a Professional Structural Engineer experienced in design of work of this type and licensed in Wisconsin.

1.05 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301.

PART 2 PRODUCTS

2.01 REINFORCEMENT

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).

1. Deformed billet-steel bars.
2. Unfinished.

B. Stirrup Steel: ASTM A1064/A1064M steel wire, unfinished.

C. Steel Welded Wire Reinforcement (WWR): Plain type; ASTM A1064/A1064M.

1. Form: Flat Sheets.

D. Reinforcement Accessories:

1. Tie Wire: Annealed, minimum 16 gage, 0.0508 inch.
2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
3. Provide stainless steel components for placement within 1-1/2 inches of weathering surfaces.

2.02 RE-BAR SPLICING:

A. Coupler Systems: Mechanical devices for splicing reinforcing bars; capable of developing full steel reinforcing design strength in tension and compression.

1. Products:
   a. Dayton Superior Corporation; Bar Lock Coupler System: www.daytonsuperior.com.
   b. Substitutions: See Section 01 60 00 - Product Requirements.

B. Dowel Bar Splicer with Dowel-Ins: Mechanical devices for connecting dowels; capable of developing full steel reinforcing design strength in tension and compression.
   1. Products:
      a. Dayton Superior Corporation; Dowel Bar Splicer D101A with Straight Dowel-In: www.daytonsuperior.com.
      b. Substitutions: See Section 01 60 00 - Product Requirements.

2.03 FABRICATION

A. Fabricate concrete reinforcing in accordance with CRSI (DA4) - Manual of Standard Practice.

B. Welding of reinforcement is not permitted.

C. Locate reinforcing splices not indicated on drawings at point of minimum stress.

PART 3 EXECUTION

3.01 PLACEMENT

A. Place, support and secure reinforcement against displacement. Do not deviate from required position.

B. Do not displace or damage vapor barrier.

C. Accommodate placement of formed openings.

D. Maintain concrete cover around reinforcing as described on Drawings.

END OF SECTION

SECTION 03 3000

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Floors and slabs on grade.

B. Concrete foundation walls.

C. Joint devices associated with concrete work.

D. Miscellaneous concrete elements, including equipment pads, light pole bases, and thrust blocks.

E. Concrete curing.

F. Concrete slab joint filler.

G. Salt Sealer for exterior Concrete.

1.02 RELATED REQUIREMENTS

A. Section 03 10 00 - Concrete Forming and Accessories: Forms and accessories for formwork.

B. Section 03 20 00 - Concrete Reinforcing.

C. Section 07 92 00 - Joint Sealants: Products and installation for sealants for saw cut joints and isolation joints in slabs.

D. Section 07 13 00 - Sheet Waterproofing

E. Section 07 21 00 - Thermal Insulation: Foundation Insulation

1.03 REFERENCE STANDARDS

A. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; 1991 (Reapproved 2009).

B. ACI 301 - Specifications for Structural Concrete; 2010 (Errata 2012).

C. ACI 302.1R - Guide for Concrete Floor and Slab Construction; 2004 (Errata 2007).

D. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000.

E. ACI 306R - Cold Weather Concreting; 2010.

F. ACI 308R - Guide to Curing Concrete; 2001 (Reapproved 2008).

G. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; 2011.

H. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2013.

I. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2015a.

J. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2015.

K. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or (50-mm) Cube Specimens); 2013.

L. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2012.

M. ASTM C150/C150M - Standard Specification for Portland Cement; 2015.

N. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a.

O. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2013.

1.04 SUBMITTALS

A. See Section 01 33 00 - Submittals, for additional requirements

B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.

C. Mix Design: Submit proposed concrete mix design.
   1. Indicate proposed mix design complies with requirements of ACI 301, Section 4 - Concrete Mixtures.

D. Samples: Submit samples of underslab vapor retarder to be used.

1.05 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 318 .

B. Follow recommendations of ACI 306R when concreting during cold weather.

PART 2 PRODUCTS

2.01 FORMWORK

A. Comply with requirements of Section 03 10 00.

2.02 REINFORCEMENT

A. Comply with requirements of Section 03 20 00.

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type I - Normal Portland type.

B. Fine and Coarse Aggregates: ASTM C33.

C. Fly Ash: ASTM C618 , Class F.

D. Water: Clean and not detrimental to concrete.

2.04 ADMIXTURES

A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

B. Air Entrainment Admixture: ASTM C260/C260M .
   1. Manufacturers:
      a. Daravair product line by Grace Construction Products.
      b. Master Aire AE 90, MasterAir VR 10, or MasterAir AE 200 by BASF - Master Builders, Inc.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

C. High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G.
   1. Manufacturers:
      a. Daracem 19 or ADVA 100, Grace Construction Products.
      b. Eucon 537, Euclid Chemical Co.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

D. Water Reducing and Retarding Admixture: ASTM C494/C494M Type D.
   1. Manufacturers:
      a. Daratard 17, Grace Construction Products.
      b. Eucon Retarder 75 or 100, Euclid Chemical Co.
      c. MasterPozzolith Series, by BASF - Master Builders, Inc.
      d. Substitutions: See Section 01 60 00 - Product Requirements.

E. Water Reducing Admixture: ASTM C494/C494M Type A.
   1. Manufacturers:
      a. Euclid Chemical Company; EUCON NW: www.euclidchemical.com/#sle.
      b. WRDA 82, Grace Construction Products.
      c. Eucon WR-91, Euclid Chemical Co..
      d. Substitutions: See Section 01 60 00 - Product Requirements.

2.05 ACCESSORY MATERIALS

A. Foundation Insulation: As specified under Section 07 21 00

B. Non-Shrink Cementitious Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.

1. Grout: Comply with ASTM C1107/C1107M .
2. Minimum Compressive Strength at 48 Hours: 2,000 pounds per square inch.
3. Minimum Compressive Strength at 28 Days: 7,000 pounds per square inch.
4. Flowable Products:
    a. Dayton Superior Corporation; Sure-Grip Precision Grout: www.daytonsuperior.com/#sle.
    b. L&M Construction Chemicals, Inc, a subsidiary of Laticrete International, Inc; DURAGROUT: www.laticrete.com/our-products/concrete-construction-chemicals/#sle.
    c. SpecChem, LLC; SC Precision Grout: www.specchemllc.com/#sle.
    d. W. R. Meadows, Inc; 588-10K: www.wrmeadows.com/#sle.
    e. Substitutions: See Section 01 60 00 - Product Requirements.

2.06 BONDING AND JOINTING PRODUCTS

A. Latex Bonding Agent: Non-redispersable acrylic latex, complying with ASTM C1059/C1059M , Type II.
1. Manufacturers:
    a. Euclid Chemical Company; AKKRO-7T: www.euclidchemical.com/#sle.
    b. SpecChem, LLC; Strong Bond Acrylic Bonder: www.specchemllc.com/#sle.
    c. W. R. Meadows, Inc; ACRY-LOK-: www.wrmeadows.com/#sle.
    d. Euclid Chemical Co.; Product: Flex-Con; www.euclidchemical.com .
    e. Dayton Superior; Acrylic Bonding Agent J40.
    f. Substitutions: See Section 01 60 00 - Product Requirements.

B. Epoxy Bonding System:
1. Manufacturers:
    a. Euclid Chemical Company; DURALFLEX LV: www.euclidchemical.com/#sle.
    b. Dayton Superior Corporation; Perma Prime 3C: www.daytonsuperior.com/#sle.
    c. SpecChem, LLC; SpecPoxy 1000, SpecPoxy 2000, SpecPoxy 3000, or SpecPoxy 3000FS: www.specchemllc.com/#sle.
    d. W. R. Meadows, Inc; Rezi-Weld Gel Paste, Rezi-Weld Gel Paste State, Rezi-Weld 1000: www.wrmeadows.com/sle.
    e. Substitutions: See Section 01 60 00 - Product Requirements.

C. Slab Isolation Joint Filler: 1/2 inch thick, height equal to slab thickness, with removable top section that will form 1/2 inch deep sealant pocket after removal.
1. Material: Closed-cell, non-absorbent, compressible polyethylene or polymer foam in sheet form.
2. Manufacturers:
    a. Nomaco, Inc; Nomaflex: www.nomaco.com/#sle.
    b. W. R. Meadows, Inc; Deck-O-Foam Joint Filler with pre-scored top strip: www.wrmeadows.com/#sle.
    c. Substitutions: See Section 01 60 00 - Product Requirements.

D. Slab Construction Joint Devices: Combination keyed joint form and screed, galvanized steel, with rectangular or round knockout holes for conduit or rebar to pass through joint form at 6 inches on center; ribbed steel stakes for setting.
1. Provide removable plastic cap strip that forms wedge-shaped joint for sealant installation.
2. Height: To suit slab thickness.
3. Manufacturers:
    a. BoMetals, Inc; Quickey: www.bometals.com/#sle.
    b. Substitutions: See Section 01 60 00 - Product Requirements.

E. Control Joint Filler:
1. BASF
2. TF-100, fast - setting two-component polyurea control joint filler.

2.07 CURING MATERIALS

A. Material must be compatible with resilient flooring and carpeting adhesives. Contractor shall verify compatibility before applying curing compound

2.08 DENISFIERS AND SEALERS

A. Sealer: Penetrating type, water-based, low-VOC content.
   1. Ultrasil Li+ manufactured by Euclid Chemical Co.: www.euclidchemical.com/.
   2. L.M. Scofield Company; Selectseal Plus: www.scofield.com
   3. Permaguard SPS manufactured by L & M Construction Chemicals: www.lmcc.com.
   4. Substitutions: See Section 01 60 00 - Product Requirements.
   5. Provide Salt Sealer:
      a. BASF
         1) Master Protect H 1000, High - performance, clear, breathable silane penetrating sealer. ASTM: D 6532. water exclusion, ASTM D 6490 Water Vaopr Transmission.
         2) Coverage: 250 sf / gallon.
         3) Install after 14-28 days.
         4) Clean all surfaces, power wash.
         5) Temp.:min 20F and rising
         6) Install per manif. instructions.

2.09 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.

B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301 .
   1. For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.

C. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.

2.10 MIX PROPORTIONING

A. Minimum amount of cementitious material identified in the following mix proportions shall apply for all mixes for which field experience or trial mixture information required by ACI 318 is not provided.

CLASS	TYPE OF CONSTRUCTION	MIN COMP STRENGTH AT 28 DAYS, PSI	MAX AGGREGATE SIZE, INCH	MIN LBS OF CEMENT PER CUBIC YARD	AIR ENTRAINMENT PERCENT +/- 1.5 %	NOTES
1	FOOTINGS	3000	1.50	470	NONE	10, 3
2	WALLS	4000	0.75	494	NONE	11, 4
3	INTERIOR SLABS ON GRADE	4000	0.75	540	NONE	4, 10, 12
4	EXTERIOR SLABS	4000	0.75	564	6.0	1, 5, 7, 11
5	MISC CONC	3000	0.75	470	6.0	1, 11
6	ELEVATED SLABS	4000	0.75	540	NONE	4,10

A. Notes:

1 - Air Entrained Concrete: Use for all exterior walls, exterior slabs, walks, platforms, ramps, steps, all portions of the site development concrete subject to freezing and thawing.
3 - Maximum water-cement ratio by weight shall be 0.54
4 - Maximum water-cement ratio by weight shall be 0.45
5 - Maximum water-cement ratio by weight shall be 0.50
6 - Do not use admixtures , plasticizers, slag, fly ash or other cement-replacing products.
7 - Provide at Contractor's option, a super plasticizer to mix
8 - Provide non-slip abrasive aggregate surface on all metal pan stairs and landings.
9 - Equilibrium dry weight of lightweight aggregate mix shall not exceed 115 pounds per cubic foot per ASTM C 567, Section 9.5.
10 - Maximum of 30 percent total replacement of Portland cement with Ground Granulated blast-Furnace Slag and fly ash at a ratio of 1:1; up to 250 pounds, with a maximum 15 percent fly ash content. If fly ash is used alone, limit the maximum replacement to 15 percent.
11 - Maximum of 30 percent total replacement of Portland cement with Ground Granulated blast-Furnace Slag and fly ash at a ratio of 1:1 where freeze-thaw durability and exposure to deicers is likely; up to 350 pounds, with a maximum of 20 percent fly ash. If fly ash is used alone, limit the maximum replacement to 20 percent.
12 - Include waterproofing admixture at manufacturer's recommended proportion and method for project conditions.

2.11 MIXING

A. Transit Mixers: Comply with ASTM C94/C94M.

PART 3 EXECUTION

3.01 PREPARATION

A. Verify that forms are clean and free of rust before applying release agent.

B. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.

C. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent in according to bonding agent manufacturer's instructions.
   1. Use epoxy bonding system for bonding to damp surfaces, for structural load-bearing applications, and where curing under humid conditions is required.
   2. Use latex bonding agent only for non-load-bearing applications.

D. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Lap joints minimum 6 inches. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering. Consult manufacturer'r installation requirements.

3.02 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R .

B. Place concrete for floor slabs in accordance with ACI 302.1R .

C. Ensure reinforcement, inserts, waterstops, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.

D. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.

E. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

3.03 SLAB JOINTING

A. Locate joints as indicated on the drawings.

B. Anchor joint fillers and devices to prevent movement during concrete placement.

C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.

D. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 4 to 12 hours after placing; use 3/16 inch thick blade and cut at least 1 inch deep but not less than one quarter (1/4) the depth of the slab.

E. Install joint devices in accordance with manufacturer's instructions.

F. Install construction joint devices in coordination with floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.

G. Apply sealants in joint devices in accordance with Section 07 92 00, and as required herein.
   1. BASF TF-100 Control Joint Filler:
      a. Concrete must be fully cured [28 days min., 90-120 day prefered].
      b. Joint surfaqces must be clean dry free of dirt loose particles, oil, grease, asphalt, tar, paint, wax, rust, waterproofing, curing compounds, membranes, other foriegn matter.
      c. Clean concrete where necessary with sandblasting, grinding, or wire bruxhing.
      d. Install TF-100 at full depth to allow for proper load transfer.
      e. Do not install over backer rod in saw cut joints.
      f. Read and follow all manufacturer's installation requirements.

3.04 FLOOR FLATNESS AND LEVELNESS TOLERANCES

A. An independent testing agency, as specified in Section 01 40 00, will inspect finished slabs for conformance to specified tolerances.

B. Maximum Variation of Surface Flatness:
   1. Exposed Concrete Floors: 1/4 inch in 10 feet. (FF25)
   2. Under Seamless Resilient Flooring: 1/4 inch in 10 feet. (FF25)
   3. Under Carpeting: 1/4 inch in 10 feet. (FF30-35) (FL20-25)

C. Correct the slab surface if tolerances are less than specified.

D. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.05 CONCRETE FINISHING

A. Repair surface defects, including tie holes, immediately after removing formwork.

B. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
   1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.

C. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
   1. Surfaces to Receive Thick Floor Coverings: "Wood float" as described in ACI 302.1R ; thick floor coverings include quarry tile, ceramic tile, and Portland cement terrazzo with full bed setting system.
   2. Surfaces to Receive Thin Floor Coverings: "Steel trowel" as described in ACI 302.1R ; thin floor coverings include carpeting, resilient flooring, seamless flooring, resinous matrix terrazzo, thin set quarry tile, and thin set ceramic tile.
   3. Other Surfaces to Be Left Exposed: Trowel as described in ACI 302.1R , minimizing burnish marks and other appearance defects.
      a. Chemical Hardener: See Section 03 35 11.

D. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1:100 nominal.

3.06 CURING AND PROTECTION

A. Comply with requirements of ACI 308R . Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

C. Surfaces Not in Contact with Forms:
   1. Slabs and Floors To Receive Adhesive-Applied Flooring: Curing compounds and other surface coatings are usually considered unacceptable by flooring and adhesive manufacturers. If such materials must be used, either obtain the approval of the flooring and adhesive manufacturers prior to use or remove the surface coating after curing to flooring manufacturer's satisfaction.
   2. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.
      a. Spraying: Spray water over floor slab areas and maintain wet.
   3. Final Curing: Begin after initial curing but before surface is dry.
      a. Moisture-Retaining Sheet: Lap strips not less than 3 inches and seal with waterproof tape or adhesive; secure at edges.

D. Apply concrete sealer in accordance with manufacturer's instructions.

E. Install foundation insulation as specified under Section 07 21 00 and as shown on Drawings.

3.07 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 01 40 00 - Quality Requirements.

B. Provide free access to concrete operations at project site and cooperate with appointed firm.

C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.

D. Tests of concrete and concrete materials may be performed at any time to ensure conformance with specified requirements.

E. Compressive Strength Tests: ASTM C39/C39M . For each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cubic yards or less of each class of concrete placed.

F. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.

G. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M .

3.08 DEFECTIVE CONCRETE

A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.

B. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect for each individual area.

3.09 PROTECTION

A. Do not permit traffic over unprotected concrete floor surface until fully cured.

END OF SECTION

SECTION 04 0511

MORTAR AND MASONRY GROUT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Reinforcement and Anchorage.

B. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 05 50 00 - Metal Fabrications: Loose steel lintels.

B. Section 07 84 00 - Firestopping: Firestopping at penetrations of fire-rated masonry and at top of fire-rated walls.

1.03 REFERENCE STANDARDS

A. ACI 530/530.1/ERTA - Building Code Requirements and Specification for Masonry Structures and Related Commentaries; 2011.

B. ASTM A82/A82M - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement; 2007.

C. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.

D. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement; 2015.

E. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.

F. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units; 2014.

G. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units; 2011.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data for masonry units, fabricated wire reinforcement, and masonry accessories.

1.05 QUALITY ASSURANCE

A. Comply with provisions of ACI 530/530.1/ERTA , except where exceeded by requirements of the contract documents.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

PART 2 PRODUCTS

2.01 MORTAR AND GROUT MATERIALS

A. Mortar and Grout-See structural drawings.

2.02 REINFORCEMENT AND ANCHORAGE

A. Manufacturers:
   1. Blok-Lok Limited: www.blok-lok.com.
   2. Hohmann & Barnard, Inc: www.h-b.com/sle.
   3. Wire Bond (Masonry Reinforcing Corporation of America): www.wirebond.com.
   4. Substitutions: See Section 01 60 00 - Product Requirements.

B. Reinforcing Steel: ASTM A615/A615M , Grade 60 (60,000 psi), deformed billet bars; uncoated.

C. Single Wythe Joint Reinforcement: Truss or ladder type; ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M, Class 3; 0.1483 inch side rods with 0.1483 inch cross rods;

width as required to provide not more than 1 inch and not less than 1/2 inch of mortar coverage on each exposure.

2.03 FLASHINGS

A. Add Provide prefabricated sealed flashing end-dams and corners, 6-inch legs minimum.
   1. End-dams Upturns: 1-inch minimum

B. Stainless Steel Flashing: ASTM A666 , Type 304, soft temper; 26 gage, 0.0187 inch thick; finish 2B to 2D.

2.04 ACCESSORIES

A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
   1. Manufacturers:
      a. Blok-Lok Limited: www.blok-lok.com.
      b. Hohmann & Barnard, Inc: www.h-b.com/sle.
      c. WIRE-BOND: www.wirebond.com.
      d. Substitutions: See Section 01 60 00 - Product Requirements.

B. Joint Filler: Closed cell Neoprene; oversized 50 percent to joint width; self expanding; 1/4 inch wide by maximum lengths available.
   1. Manufacturers:
      a. Hohmann & Barnard, Inc: www.h-b.com/sle.
      b. Wire Bond (Masonry Reinforcing Corporation of America): www.wirebond.com.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

C. Concrete Block - Core Insulation
   1. Spray Type.
   2. Manufacturers:
      a. CFI Foam Inc. Core Foam Masonry Foam Insulation.
         cfiFOAM, Inc.
         P.O. Box 10393
         Knoxville, TN 37939
         865.588.4465
      b. Icynene-Core Fill 500
         6747 Campobello Road
         Mississauga ON
         L5N 2L7 Canada
         1-800-758-7325

2.05 LINTELS

A. Miscellaneous steel type as provided under Section 05 50 00 - Metal Fabrications

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.

B. Verify that related items provided under other sections are properly sized and located.

C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 COURSING

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Concrete Masonry Units:
   1. Bond: Running.-Verify and match existing building bonding.
   2. Coursing: One unit and one mortar joint to equal 8 inches.
   3. Mortar Joints: Concave.-Verify and match existing building

3.03 PLACING AND BONDING

A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

B. Lay hollow masonry units with face shell bedding on head and bed joints.

C. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.

D. Remove excess mortar and mortar smears as work progresses.

E. Interlock intersections and external corners.

F. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.

G. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

H. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

3.04 REINFORCEMENT AND ANCHORAGE - GENERAL

A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.

B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.

C. Place continuous joint reinforcement in first and second joint below top of walls.

D. Lap joint reinforcement ends minimum 6 inches.

E. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 36 inches horizontally and 24 inches vertically.

3.05 REINFORCEMENT AND ANCHORAGE - SINGLE WYTHE MASONRY

A. Install horizontal joint reinforcement 16 inches on center.

B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.

C. Place continuous joint reinforcement in first and second joint below top of walls.

D. Lap joint reinforcement ends minimum 6 inches.

3.06 CORE INSULATION:

A. Install foam core insulation in accordance with the manufacture's recommendations.

B. Provide at all exterior masonry wall locations.

3.07 LINTELS

A. Install loose steel lintels over openings.

3.08 CONTROL JOINTS

A. Do not continue horizontal joint reinforcement through control or expansion joints.

B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

3.09 BUILT-IN WORK

A. As work progresses, install built-in metal door frames and other items to be built into the work and furnished under other sections.

B. Install built-in items plumb, level, and true to line.

3.10 TOLERANCES

A. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.

B. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.

C. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.

D. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

E. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.

F. Maximum Variation from Cross Sectional Thickness of Walls: 1/8 inch.

3.11 CUTTING AND FITTING

A. Cut and fit for pipes, conduit, and sleeves. Coordinate with other sections of work to provide correct size, shape, and location.

3.12 CLEANING

A. Remove excess mortar and mortar droppings.

B. Replace defective mortar. Match adjacent work.

C. Clean soiled surfaces with cleaning solution.

D. Use non-metallic tools in cleaning operations.

3.13 PROTECTION

A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

B. Install foundation wall insulation as specified under Section 07 21 00 and as shown on the Drawings.

END OF SECTION

SECTION 04 2000

UNIT MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete Block.

B. Clay Facing Brick.

C. Reinforcement and Anchorage.

D. Flashings.

E. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 04 05 11 - Mortar and Masonry Grout.

B. Section 05 50 00 - Metal Fabrications: Loose steel lintels.

C. Section 26 00 - Air and Vapor Retarders: Spray-on air barrier

D. Section 07 84 00 - Firestopping: Firestopping at penetrations of fire-rated masonry and at top of fire-rated walls.

1.03 REFERENCE STANDARDS

A. ACI 530/530.1/ERTA - Building Code Requirements and Specification for Masonry Structures and Related Commentaries; 2011.

B. ASTM A82/A82M - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement; 2007.

C. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.

D. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement; 2015.

E. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 2009a (Reapproved 2014).

F. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.

G. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2015.

H. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units; 2014.

I. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units; 2011.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data for masonry units, fabricated wire reinforcement, and masonry accessories.

C. Samples: Submit four samples of facing brick units to illustrate color, texture, and extremes of color range.

1.05 QUALITY ASSURANCE

A. Comply with provisions of ACI 530/530.1/ERTA , except where exceeded by requirements of the contract documents.

1.06 MOCK-UP

A. Construct a masonry wall as a mock-up panel sized 8 feet long by 6 feet high; include mortar, accessories, structural backup, and flashings (with lap joint, corner, and end dam) in mock-up.

B. Locate where directed.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

A. Concrete Block: Comply with referenced standards and as follows:
   1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depth of 8 inches.
      a. Split-face units (Equal to Northfield Block Co. Signature Series-Premium Color Selections.
      b. Standard smooth face units (at interior)
      c. Provide dry Block Water Repellant to CMU at exterior CMU
   2. Compressive Strength: F'm = 1900 psi
   3. Load-Bearing Units: ASTM C90 , normal weight.
      a. Hollow block, as indicated.
   4. Non-Loadbearing Units: ASTM C129 .
      a. Hollow block, as indicated.
      b. Normal weight.

2.02 BRICK UNITS

A. Manufacturers:
   1. Bowerston Ohio Quality Brick: #85/15 Vertical Matt Modular
   2. Substitutions: Not permitted.

B. Facing Brick: ASTM C216 , Type FBS Smooth, Grade SW.
   1. Nominal Size: Modular: 2-3/4 by 7-5/8 by 3-5/8 inches

2.03 CAST STONE TRIM UNITS

A. Cast Stone: Architectural concrete product manufactured to simulate appearance of natural limestone, complying with ASTM C 1364.
   1. Compressive Strength: As specified in ASTM C 1364; calculate strength of pieces to be field cut at 80 percent of uncut piece.
   2. Freeze-Thaw Resistance: Demonstrated by field experience.
   3. Surface Texture: Fine grained texture, with no bugholes, air voids, or other surface blemishes visible from distance of 20 feet.
   4. Color: Selected by Architect from manufacturer's full range.
   5. Remove cement film from exposed surfaces before packaging for shipment.

B. Shapes: Provide shapes indicated on Drawings.
   1. Variation from Any Dimension, Including Bow, Camber, and Twist: Maximum of plus/minus 1/8 inch or length divided by 360, whichever is greater, but not more than 1/4 inch.
   2. Unless otherwise indicated on drawings, provide:
      a. Wash or slope of 1:12 on exterior horizontal surfaces.
      b. Drips on projecting components, wherever possible.
      c. Raised fillets at back of sills and at ends to be built in.

C. Reinforcement: Provide reinforcement as required to withstand handling and structural stresses; comply with ACI 318.

2.04 MORTAR AND GROUT MATERIALS

A. Mortar and Grout: As specified in Section 04 05 11.-Provide Dry Block Water Repellant to mortar.

2.05 REINFORCEMENT AND ANCHORAGE

A. Manufacturers:

1. Blok-Lok Limited: www.blok-lok.com.
2. Hohmann & Barnard, Inc: www.h-b.com/sle.
3. Wire Bond (Masonry Reinforcing Corporation of America): www.wirebond.com.
4. Substitutions: See Section 01 60 00 - Product Requirements.

B. Reinforcing Steel: ASTM A615/A615M , Grade 60 (60,000 psi), deformed billet bars; uncoated.

C. Single Wythe Joint Reinforcement: Truss or ladder type; ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M, Class 3; 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not more than 1 inch and not less than 1/2 inch of mortar coverage on each exposure.

D. Multiple Wythe Joint Reinforcement: Truss type; fabricated with moisture drip; ASTM A1064/A1064M steel wire, hot dip galvanized after fabrication to ASTM A153/153M, Class B; 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not more than 1 inch and not less than 1/2 inch of mortar coverage on each exposure.

E. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A153/A153M, Class B.
1. Anchor plates: Not less than 0.075 inch thick, designed for fastening to structural backup through sheathing by two fasteners; provide design with legs that penetrate sheathing and insulation to provide positive anchorage.
2. Wire ties: Manufacturer's standard shape, 0.1875 inch thick.
3. Vertical adjustment: Not less than 3-1/2 inches.

2.06 FLASHINGS

A. Add Provide prefabricated sealed flashing end-dams and corners, 6-inch legs minimum.
1. End-dams Upturns: 1-inch minimum

B. Stainless Steel Flashing: ASTM A666 , Type 304, soft temper; 26 gage, 0.0187 inch thick; finish 2B to 2D.

2.07 ACCESSORIES

A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
1. Manufacturers:
a. Blok-Lok Limited: www.blok-lok.com.
b. Hohmann & Barnard, Inc: www.h-b.com/sle.
c. WIRE-BOND: www.wirebond.com.
d. Substitutions: See Section 01 60 00 - Product Requirements.

B. Joint Filler: Closed cell Neoprene; oversized 50 percent to joint width; self expanding; 1/4 inch wide by maximum lengths available.
1. Manufacturers:
a. Hohmann & Barnard, Inc: www.h-b.com/sle.
b. Wire Bond (Masonry Reinforcing Corporation of America): www.wirebond.com.
c. Substitutions: See Section 01 60 00 - Product Requirements.

C. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
1. Mortar Diverter: Semi-rigid mesh designed for installation at flashing locations.
a. Manufacturers:
1) Advanced Building Products Inc; Mortar Break DT: www.advancedbuildingproducts.com/sle.
2) Advanced Building Products Inc; Mortar Break: www.advancedflashing.com/sle.
3) Mortar Net Solutions; Wall Defender: www.mortarnet.com.
4) Substitutions: See Section 01 60 00 - Product Requirements.

D. Termination Bars: Stainless steel; compatible with membrane and adhesives.

E. Weeps: See drawings for type.

F. Cavity Vents: Same material as weeps.

G. Cleaning Solution: Not harmful to masonry work or adjacent materials; verify with masonry unit manufacturer recommended cleaning product and application.
   1. PROSOCO; Product: Sure Klean Burnished Custom Masonry Cleaner; or approved equal.

2.08 LINTELS

A. Miscellaneous steel type as provided under Section 05 50 00 - Metal Fabrications

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.

B. Verify that related items provided under other sections are properly sized and located.

C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 COURSING

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Concrete Masonry Units:
   1. Bond: Running.
   2. Coursing: One unit and one mortar joint to equal 8 inches.
   3. Mortar Joints: Concave.

D. Brick Units:
   1. Bond: Running.
   2. Coursing: Three units and three mortar joints to equal 9-3/8 inches.
   3. Mortar Joints: Concave.

3.03 PLACING AND BONDING

A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

B. Lay hollow masonry units with face shell bedding on head and bed joints.

C. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.

D. Remove excess mortar and mortar smears as work progresses.

E. Interlock intersections and external corners.

F. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.

G. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

H. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

3.04 SUBSTRATE PREPARATION FOR AIR AND VAPOR BARRIER

A. Refer to Air and Vapor Barriers manufacturer's literature for more specific requirements of preparation of substrates.

B. Surfaces shall be free of contaminants such as grease, oil and wax on surfaces to receive membrane.

C. CMU surfaces should be smooth and free from projections.

D. Strike all mortar joints full and flush to the face of the concrete block.

E. Fill all voids and holes greater than 1/2 inch.

F. Make smooth surface irregularities 1/8 inch in height or sharp to touch.

G. Grout or fill penetrations.

H. Remove mortar droppings on brick ties, shelf angles, brick shelves or other horizontal obstructions.

I. If the surfaces cannot be made smooth to the satisfaction of the installer of products provided under Section 07 25 00 - Air and Vapor Retarders, then apply a parge coat (one part cement to three parts sand) over the entire surface to receive air barrier membrane

3.05 CAST STONE INSTALLATION

A. Mechanically anchor cast stone units indicated; set remainder in mortar.

B. Setting:
   1. Drench cast stone components with clear, running water immediately before installation.
   2. Set units in a full bed of mortar unless otherwise indicated.
   3. Fill vertical joints with mortar.
   4. Fill dowel holes and anchor slots completely with mortar or non-shrink grout.

C. Joints: Make all joints 3/8 inch, except as otherwise detailed.
   1. Rake mortar joints 3/4 inch for pointing. Scrub face of each stone to remove excess mortar before it sets.
   2. Point joints with mortar in layers 3/8 inch thick and tool to a slight concave profile.
   3. Leave the following joints open for sealant:
      a. Head joints in top courses, including copings, parapets, cornices, sills, and steps.
      b. Joints in projecting units.
      c. Joints between rigidly anchored units, including soffits, panels, and column covers.
      d. Joints below lugged sills and stair treads.
      e. Joints below ledge and relieving angles.
      f. Joints labeled "expansion joint".

D. Sealant Joints: Install sealants as specified in Section 07 92 00.

3.06 WEEPS/CAVITY VENTS

A. Install weeps in veneer and cavity walls at 24 inches on center horizontally above through-wall flashing, above shelf angles and lintels, and at bottom of walls.

B. Install cavity vents in veneer and cavity walls at 24 inches on center horizontally below shelf angles and lintels and near top of walls.

C. Install weeps in single-wythe walls continuously at bottom of walls.

3.07 REINFORCEMENT AND ANCHORAGE - GENERAL

A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.

B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.

C. Place continuous joint reinforcement in first and second joint below top of walls.

D. Lap joint reinforcement ends minimum 6 inches.

E. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 36 inches horizontally and 24 inches vertically.

3.08 REINFORCEMENT AND ANCHORAGE - SINGLE WYTHE MASONRY

A. Install horizontal joint reinforcement 16 inches on center.

B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.

C. Place continuous joint reinforcement in first and second joint below top of walls.

D. Lap joint reinforcement ends minimum 6 inches.

3.09 REINFORCEMENT AND ANCHORAGES - CAVITY WALL MASONRY

A. Install horizontal joint reinforcement 16 inches on center.
   1. No horizontal joint reinforcing is required at fly ash facing brick.

B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of openings.

C. Place continuous joint reinforcement in first and second joint below top of walls.

D. Lap joint reinforcement ends minimum 6 inches.

E. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Space anchors at maximum of 24 inches horizontally and 16 inches vertically.

3.10 MASONRY FLASHINGS

A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
   1. Extend flashings full width at such interruptions and at least 6 inches, minimum, into adjacent masonry or turn up at least 8 inches, minimum, to form watertight pan at non-masonry construction.
   2. Remove or cover protrusions or sharp edges that could puncture flashings.
   3. Seal lapped ends and penetrations of flashing before covering with mortar.

B. Extend metal flashings to within 1/4 inch of exterior face of masonry.

C. Lap end joints of flashings at least 6 inches, minimum, and seal watertight with flashing sealant/adhesive.

D. See drawings for Block-Net for single wydth CMU wall construction

3.11 LINTELS

A. Install loose steel lintels over openings.

3.12 CONTROL JOINTS

A. Do not continue horizontal joint reinforcement through control or expansion joints.

B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

3.13 BUILT-IN WORK

A. As work progresses, install built-in metal door frames and other items to be built into the work and furnished under other sections.

B. Install built-in items plumb, level, and true to line.

3.14 TOLERANCES

A. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.

B. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.

C. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.

D. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

E. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.

F. Maximum Variation from Cross Sectional Thickness of Walls: 1/8 inch.

3.15 CUTTING AND FITTING

A. Cut and fit for pipes, conduit, and sleeves. Coordinate with other sections of work to provide correct size, shape, and location.

3.16 CLEANING

A. Remove excess mortar and mortar droppings.

B. Replace defective mortar. Match adjacent work.

C. Clean soiled surfaces with cleaning solution.

D. Use non-metallic tools in cleaning operations.

E. Repair chips and other surface damage noticeable when viewed in direct daylight at 20 feet.
   1. Repair with matching touchup material provided by the manufacturer and in accordance with manufacturer's instructions.
   2. Repair methods and results subject to Architect 's approval.

F. Clean cast stone components as work progresses; remove mortar fins and smears before tooling joints
   1. Wet surfaces with water before applying cleaner.
   2. Apply cleaner to cast stone in accordance with manufacturer's instructions.
   3. Remove cleaner promptly by rinsing thoroughly with clear water.
   4. Do not use acidic cleaners.

3.17 PROTECTION

A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

B. Install foundation wall insulation as specified under Section 07 21 00 and as shown on the Drawings.

END OF SECTION

SECTION 05 1200

STRUCTURAL STEEL FRAMING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Structural steel framing members. Previously Bid-This Contract for Erection Only

B. Structural steel support members. Previously Bid-This Contract for Erection Only

C. Grouting under base plates.

1.02 RELATED REQUIREMENTS

A. Section 05 50 00 - Metal Fabrications. Previously Bid-This Contract for Erection Only.

B. Section 05 31 00 - Steel Decking: Support framing for small openings in deck. Previously Bid-This Contract for Erection Only

1.03 REFERENCE STANDARDS

A. AISC (MAN) - Steel Construction Manual; 2011.

B. AISC S303 - Code of Standard Practice for Steel Buildings and Bridges; 2016.

C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.

D. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2012.

E. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2015.

F. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2013.

G. ASTM A514/A514M - Standard Specification for High-Yield-Strength, Quenched and Tempered Alloy Steel Plate, Suitable for Welding; 2014.

H. ASTM A529/A529M - Standard Specification for High-Strength Carbon-Manganese Steel of Structural Quality; 2014.

I. ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts; 2007a (Reapproved 2014).

J. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi (830 MPa) and 150 ksi (1040 MPa) Minimum Tensile Strength, Inch and Metric Dimensions; 2015a.

K. ASTM F436/F436M - Standard Specification for Hardened Steel Washers Inch and Metric Dimensions; 2016.

L. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2012.

M. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015.

N. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel; International Accreditation Service, Inc; 2011.

O. RCSC (HSBOLT) - Specification for Structural Joints Using High-Strength Bolts; Research Council on Structural Connections; 2009.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

1.05 QUALITY ASSURANCE

A. Fabricate structural steel members in accordance with AISC "Steel Construction Manual."

PART 2 PRODUCTS

2.01 MATERIALS

A. High-Strength Structural Bolts, Nuts, and Washers: ASTM F1554/F1554, Grade 36, with matching compatible ASTM A563 or ASTM A563M nuts and ASTM F436/F436M washers.

B. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.

C. Grout: ASTM C1107/C1107M; Non-shrink; premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
   1. Minimum Compressive Strength at 48 Hours: 2,000 pounds per square inch.
   2. Minimum Compressive Strength at 28 Days: 7,000 pounds per square inch.

D. Shop and Touch-Up Primer: Fabricator's standard, complying with VOC limitations of authorities having jurisdiction.

2.02 SOURCE QUALITY CONTROL AND TESTS

A. High-Strength Bolts: Provide testing and verification of shop-bolted connections in accordance with AISC "Specification for Structural Joints Using ASTM A325 or A490 Bolts", testing at least 50 percent of bolts at each connection.

B. Welded Connections: Visually inspect all shop-welded connections and test at least 50 percent of welds using one of the following:
   1. Radiographic testing performed in accordance with ASTM E94.
   2. Ultrasonic testing performed in accordance with ASTM E164.
   3. Liquid penetrant inspection performed in accordance with ASTM E165/E165M.
   4. Magnetic particle inspection performed in accordance with ASTM E709.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that conditions are appropriate for erection of structural steel and that the work may properly proceed.

3.02 ERECTION

A. Erect structural steel in compliance with AISC S303 "Code of Standard Practice for Steel Buildings and Bridges".

B. Allow for erection loads, and provide sufficient temporary bracing to maintain structure in safe condition, plumb, and in true alignment until completion of erection and installation of permanent bracing.

C. Field weld components indicated on shop drawings.

D. Use carbon steel bolts only for temporary bracing during construction, unless otherwise specifically permitted on drawings. Install high-strength bolts in accordance with RCSC (HSBOLT) "Specification for Structural Joints Using High-Strength Bolts".

E. Do not field cut or alter structural members without approval of Architect.

F. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.

G. Grout solidly between column plates and bearing surfaces, complying with manufacturer's instructions for nonshrink grout. Trowel grouted surfaces smooth, splaying neatly to 45 degrees.

3.03 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

END OF SECTION

SECTION 05 2100

STEEL JOIST FRAMING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Open web steel joists, with bridging, attached seats and anchors. Previously Bid-This Contract for Erection Only

B. Loose bearing members, such as plates or angles, and anchor bolts for site placement. Previously Bid-This Contract for Erection Only

C. Supplementary framing for roof openings greater than 18 inches. Previously Bid-This Contract for Erection Only

1.02 RELATED REQUIREMENTS

A. Section 05 12 00 - Structural Steel Framing: Superstructure framing.

B. Section 05 31 00 - Steel Decking: Support framing for openings less than 18 inches in decking.

C. Section 05 50 00 - Metal Fabrications: Non-framing steel fabrications attached to joists.

1.03 REFERENCE STANDARDS

A. ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts; 2007a (Reapproved 2014).

B. ASTM E164 - Standard Practice for Contact Ultrasonic Testing of Weldments; 2013.

C. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi (830 MPa) and 150 ksi (1040 MPa) Minimum Tensile Strength, Inch and Metric Dimensions; 2015a.

D. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015.

E. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel; International Accreditation Service, Inc; 2011.

F. SJI Technical Digest No. 9 - Handling and Erection of Steel Joists and Joist Girders; 2008.

G. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 1999 (Ed. 2004).

H. SSPC-SP 2 - Hand Tool Cleaning; 1982 (Ed. 2004).

1.04 QUALITY ASSURANCE

A. Perform Work, including that for headers and other supplementary framing, in accordance with SJI (SPEC) Standard Specifications Load Tables and SJI Technical Digest No. 9 .

B. Erector Qualifications: Company specializing in performing the work of this section with minimum three years experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Coordinate with Rockford Ornametal for delivery of Steel and sequence of delievry.

PART 3 EXECUTION

2.01 EXAMINATION

A. Verify existing conditions prior to beginning work.

2.02 ERECTION

A. Erect joists with correct bearing on supports.

B. Allow for erection loads. Provide sufficient temporary bracing to maintain framing safe, plumb, and in true alignment.

C. Coordinate the placement of anchors for securing loose bearing members furnished as part of the work of this section.

D. After joist alignment and installation of framing, field weld joist seats to steel bearing surfaces.

E. Position and field weld joist chord extensions and wall attachments as detailed.

F. Install supplementary framing for roof openings greater than 18 inches.

G. Do not permit erection of decking until joists are braced, bridged, and secured or until completion of erection and installation of permanent bridging and bracing.

H. Do not field cut or alter structural members without approval of joist manufacturer.

I. After erection, prime welds, damaged shop primer, and surfaces not shop primed, except surfaces specified not to be primed.

2.03 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch.

B. Maximum Offset From True Alignment: 1/4 inch.

2.04 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 01 40 00 - Quality Requirements.

B. Welded Connections: Visually inspect all field-welded connections and test at least 10 percent of welds using one of the following:
   1. Ultrasonic testing performed in accordance with ASTM E164 .
   2. Liquid penetrant inspection performed in accordance with ASTM E165/E165M .
   3. Magnetic particle inspection performed in accordance with ASTM E709 .

END OF SECTION

SECTION 05 3100

STEEL DECKING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Roof deck. Previously Bid-This Contract for Erection Only

B. Supplementary framing for openings up to and including 18 inches. Previously Bid-This Contract for Erection Only

C. Bearing plates and angles. Previously Bid-This Contract for Erection Only

1.02 RELATED REQUIREMENTS

A. Section 05 1200 - Structural Steel Framing: Support framing for openings larger than 18 inches and shear stud connectors.

B. Section 05 2100 - Steel Joist Framing: Support framing for openings larger than 18 inches and shear stud connectors.

1.03 REFERENCE STANDARDS

A. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel; 2008.

B. FM (AG) - FM Approval Guide; Factory Mutual Research Corporation; current edition.

C. SDI (DM) - Publication No.30, Design Manual for Composite Decks, Form Decks, and Roof Decks; 2007.

D. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 1999 (Ed. 2004).

E. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); 2002 (Ed. 2004).

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittals procedures.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Cut plastic wrap to encourage ventilation.

B. Separate sheets and store deck on dry wood sleepers; slope for positive drainage.

C. Coordinate with Rockford Ornametal for delivery of Deck and sequence of delievry.

PART 2 PRODUCTS

2.01 ACCESSORY MATERIALS

A. Welding Materials: AWS D1.1/D1.1M .

B. Fasteners: Galvanized hardened steel, self tapping. See Drawings.

C. Mechanical Fasteners: Steel; hex washer head, self-drilling, self-tapping.

D. Weld Washers: Mild steel, uncoated, 3/4 inch outside diameter, 1/8 inch thick.

E. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, complying with VOC limitations of authorities having jurisdiction.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions prior to beginning work.

3.02 INSTALLATION

A. Erect metal deck in accordance with SDI Design Manual and manufacturer's instructions. Align and level.

B. On steel supports provide minimum 1-1/2 inch bearing.

C. At mechanically fastened male/female side laps fasten at 24 inches on center maximum.

D. Weld deck in accordance with AWS D1.3/D1.3M .

E. At deck openings from 6 inches to 18 inches in size, provide 2 by 2 by 1/4 inch steel angle reinforcement. Place angles perpendicular to flutes; extend minimum two flutes beyond each side of opening and fusion weld to deck at each flute.

F. At openings between deck and walls, columns, and openings, provide sheet steel closures and angle flashings to close openings.

G. Position roof drain pans with flange bearing on top surface of deck. Fusion weld at each deck flute.

END OF SECTION

SECTION 05 5000

METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Shop fabricated steel items, including:
   1. Columns and base plates. Previously Bid-This Contract for Erection Only
   2. Lintels. Previously Bid-This Contract for Erection Only
   3. Ladders. Previously Bid-This Contract for Erection Only
   4. Bollard. Previously Bid-This Contract for Erection Only
   5. Other metal fabrications shown on Drawings.

1.02 REFERENCE STANDARDS

A. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2012.

B. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2015.

C. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates; 2013.

D. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2014.

E. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi (830 MPa) and 150 ksi (1040 MPa) Minimum Tensile Strength, Inch and Metric Dimensions; 2015a.

F. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2012.

G. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015.

H. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); 2002 (Ed. 2004).

I. SSPC-SP 2- Hand Tool Cleaning; 1982 (Ed. 2004).

PART 2 PRODUCTS

2.01 FABRICATION TOLERANCES

A. Squareness: 1/8 inch maximum difference in diagonal measurements.

B. Maximum Offset Between Faces: 1/16 inch.

C. Maximum Misalignment of Adjacent Members: 1/16 inch.

D. Maximum Bow: 1/8 inch in 48 inches.

E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

C. Field weld components as indicated on drawings.

D. Perform field welding in accordance with AWS D1.1/D1.1M .

E. Obtain approval prior to site cutting or making adjustments not scheduled.

3.02 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

SECTION 06 1000

ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Rough opening framing for doors, windows, and roof openings.

B. Preservative treated wood materials.

C. Fire retardant treated wood materials.

D. Wood nailers and curbs for roofing and items installed on roof pressure treated.

E. Concealed wood blocking, nailers, and supports.

F. Miscellaneous wood nailers.

1.02 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2018.

C. AWPA C9 - Plywood -- Preservative Treatment by Pressure Processes; American Wood-Preservers' Association; 2003.

D. AWPA C20 - Structural Lumber -- Fire Retardant Treatment by Pressure Processes; American Wood-Preservers' Association; 2002.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide technical data on wood preservative materials and application instructions.

C. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

1.04 QUALITY ASSURANCE

A. Lumber: Comply with PS 20 and approved grading rules and inspection agencies.

B. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.

C. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

1.05 DELIVERY, STORAGE, AND HANDLING

A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, or installation.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.

1. Species: Douglas Fir-Larch, unless otherwise indicated. Fire retardant treated.
2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

2.02 DIMENSION LUMBER

A. Sizes: Nominal sizes as indicated on drawings, S4S.

B. Moisture Content: S-dry or MC19.

C. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
   1. Lumber: S4S, No. 2 or Standard Grade.
   2. Boards: Standard or No. 3.
   3. Fire retardant treated.

D. Miscellaneous Blocking, Furring, and Nailers:
   1. Lumber: S4S, No. 2 or Standard Grade.
   2. Boards: Standard or No. 3.
   3. Fire retardant treated.

2.03 CONSTRUCTION PANELS

A. APA Rated Plywood Parapet Wall Sheathing: Fire treated and Exterior Exposure Class :

B. Other Applications:
   1. Other Locations: PS 1, C-D Plugged or better.

2.04 ACCESSORIES

A. Fasteners and Anchors:
   1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.

B. Water-Resistive Barrier: As specified in Section 07 2500.

2.05 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
   1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
   2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

B. Fire Retardant Treatment:
   1. Manufacturers:
      a. Lonza Group; .: www.wolmanizedwood.com.
      b. Hoover Treated Wood Products, Inc; .: www.frtw.com.
      c. Koppers, Inc; .: www.koppersperformancechemicals.com/#sle.
   2. Exterior Type: AWPA U1, Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
      a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
      b. Do not use treated wood in direct contact with the ground.
   3. Interior Type A: AWPA U1, Use Category UCFA, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
      a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
      b. Treat rough carpentry items as indicated .

c. Do not use treated wood in applications exposed to weather or where the wood may become wet.

C. Preservative Treatment:
1. Manufacturers:
a. Lonza Group; .: www.wolmanizedwood.com.
b. Viance, LLC: www.treatedwood.com.
c. Osmose, Inc: www.osmose.com.

D. Preservative Pressure Treatment of Lumber Above Grade: AWPA U1, Use Category UC3B, Commodity Specification A using waterborne preservative.
1. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
a. Treat lumber exposed to weather.
2. Treat lumber in contact with roofing, flashing, or waterproofing.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Select material sizes to minimize waste.

B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

D. Exterior wall sheathing panels to be gapped 1/8" at all edges.

3.02 BLOCKING, NAILERS, AND SUPPORTS

A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

3.03 INSTALLATION OF ACCESSORIES AND MISCELLANEOUS WOOD

A. Curb roof openings except where prefabricated curbs are provided. Form corners by alternating lapping side members.

B. Coordinate curb installation with installation of decking and support of deck openings.

3.04 INSTALLATION OF CONSTRUCTION PANELS

A. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using screws. Seal joints prior to paint panels in Stock Area.

3.05 TOLERANCES

A. Framing Members: 1/4 inch from true position, maximum.

B. Variation from Plane (Other than Floors): 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

END OF SECTION

SECTION 07 2100

THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Board insulation at perimeter foundation wall and underside of floor slabs.

B. Batt insulation in exterior and interior wall construction.

C. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

D. Spray foam to seal gaps and cracks at exterior envelope.

E. Spray foam CMU cores, (see 04 2000 Unit Masonry).

1.02 RELATED REQUIREMENTS

A. Section 06 1000 - Rough Carpentry: Supporting construction for batt insulation.

B. Section 07 5300 - ELASTOMERIC MEMBRANE ROOFING: Insulation specified as part of roofing system.

C. Section 09 2116 - Gypsum Board Assemblies: Acoustic insulation inside walls and partitions.

1.03 REFERENCE STANDARDS

A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2017a.

B. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2017.

C. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2017.

D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2018.

E. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2016a.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

PART 2 PRODUCTS

2.01 APPLICATIONS

A. Insulation Under Concrete Slabs: Extruded polystyrene (XPS) board.

B. Insulation at Perimeter of Foundation: Extruded polystyrene (XPS) board.

C. Insulation in Metal Framed Walls: Batt insulation with integral vapor retarder.

2.02 FOAM BOARD INSULATION MATERIALS

A. Extruded Polystyrene (XPS) Board Insulation: Complies with ASTM C578 with either natural skin or cut cell surfaces.

1. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
2. Flame Spread Index: 75 or less, when tested in accordance with ASTM E84.
3. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
4. Type and Thermal Resistance, R-value: as indicated Type IV, 5.0 (0.88) per 1 inch thickness at 75 degrees F mean temperature.
5. Board Size: 24 x 96 inch.
6. Board Thickness: 2, and 4 inches.
   a. 1 1/4" at high density [Highload] floor Locations.
7. Board Edges: Square.

8. Manufacturers:
    a. Dow Chemical Company; STYROFOAM HIGHLOAD 40: www.dowbuildingsolutions.com/#sle.
    b. Dow Chemical Co: www.dow.com.
    c. Owens Corning Corp: www.owenscorning.com.
9. Substitutions: See Section 01 6000 - Product Requirements.

B. Polyisocyanurate (ISO) Board Insulation with Facers Both Sides: Rigid cellular foam, complying with ASTM C1289.

C. Provide tapered insulation where required for drainage pitch.
1. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
2. Flame Spread Index: 75 or less, when tested in accordance with ASTM E84.
3. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
4. Board Thickness: 1 inch.
5. Thermal Resistance: R-value6 per inch of see drawings.
6. Board Edges: Square.
7. Manufacturers:
    a. Atlas Roofing Corporation: www.atlasroofing.com.
    b. Dow Chemical Co: www.dow.com.

2.03 BATT INSULATION MATERIALS

A. Batt Insulation: ASTM C 665; preformed batt; friction fit, conforming to the following:
1. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
2. Thickness: as indicated on drawings.
3. Facing: Aluminum foil, flame spread 25 rated; one side.
4. Manufacturers:
    a. CertainTeed Corporation; .: www.certainteed.com.
    b. Johns Manville; .: www.jm.com.
    c. Owens Corning Corp: www.owenscorning.com.
5. Substitutions: See Section 01 6000 - Product Requirements.
6. Provide sound batts in all interior stud partitions.
    a. Owens Corning Sound Attentuation Batt Insulation. or approved equal product.

2.04 ACCESSORIES

A. Sheet Vapor Retarder: Sheet polyethylene film for above grade application, 10 mil, 0.010 inch thick.

B. Tape: Reinforced polyethylene film with acrylic pressure sensitive adhesive.
1. Application: Sealing of interior circular penetrations, such as pipes or cables.
2. Width: Are required for application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.

B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION AT FOUNDATION PERIMETER

A. Adhere a 6 inch wide strip of polyethylene sheet over construction, control, and expansion joints with double beads of adhesive each side of joint.

B. Install boards horizontally on foundation perimeter.

C. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.03 BOARD INSTALLATION UNDER CONCRETE SLABS

A. Place insulation under slabs on grade after base for slab has been compacted.

B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

C. Prevent insulation from being displaced or damaged while placing vapor retarder and placing slab.

3.04 BATT INSTALLATION

A. Install insulation in accordance with manufacturer's instructions.

B. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

C. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

3.05 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 07 2500

WEATHER BARRIERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fluid Applied air & water - resistive barrier. Parex basis of design.

1.02 RELATED REQUIREMENTS

A. Section 06 1000 - Rough Carpentry: Water-resistive barrier under exterior cladding.

1.03 DEFINITIONS

A. Air Barrier: Air tight barrier made of material that is relatively air impermeable but water vapor permeable, both to the degree specified, with sealed seams and with sealed joints to adjacent surfaces. Note: For the purposes of this specification, vapor impermeable air barriers are classified as vapor retarders.

1.04 REFERENCE STANDARDS

A. ICC-ES AC38 - Acceptance Criteria for Water-Resistive Barriers; 2016.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on material characteristics.

C. Manufacturer's Installation Instructions: Indicate preparation.

1.06 FIELD CONDITIONS

A. Maintain temperature and humidity recommended by the materials manufacturers before, during and after installation.

PART 2 PRODUCTS

2.01 WEATHER BARRIER ASSEMBLIES

A. Water-Resistive Barrier: Provide on exterior walls under exterior cladding.

2.02 AIR BARRIER MATERIALS (WATER VAPOR PERMEABLE AND WATER-RESISTIVE)

A. Air Barrier Coating:
   1. Water-Resistive Membrane & Air Barrier Coating:
      a. Parex USA WeatherSeal Trowel-On: 100% acrylic, non-cementitious, trowelable water-resistive and air barrier.
   2. Parex USA 396 Sheathing Tape: Non-woven synthetic fiber tape to reinforce the membrane at sheathing board joints, into rough openings and other terminations into dissimilar materials.
   3. Flashing Membrane: Self sealing, polyester faced, rubberized asphalt membrane, 30 mils (0.76mm) thick.
   4. Manufacturers:
      a. Parex USA, Inc.; Parex USA WeatherSeal Trowel-on: www.parexusa.com.

B. Air Barrier Membrane:
   1. Material: Water-based acrylic.
   2. Air Infiltration ASTM E2178; Calc flow rate at 75 Pa [1.57 lb/sq ft., 0.3 in H 2 0]=<0.02 L/msq. m. [<0.004 cfm/sq. ft.]
   3. Water Vapor Permeance: 7 perms, minimum, when tested in accordance with ASTM E96/E96M, Procedure B.
   4. Water resistance ASTM D 2247 14 days Pass-no deleterious effects.
   5. Manufacturers:
      a. Carlisle Coatings and Waterproofing, Inc; Fire Resist Barritech-VP: www.carlisleccw.com/#sle.
      b. **Basis of Design:** Parex USA, Inc; Parex USA WeatherSeal Trowel-on: www.parexusa.com/#sle.

c. Sto Corp; Sto AirSeal: www.stocorp.com/#sle.
d. W.R. Meadows, Inc; Air-Shield LMP: www.wrmeadows.com/#sle.

2.03 SEALANTS

A. Primers, Cleaners, and Other Sealant Materials: As recommended by sealant manufacturer, appropriate to application, and compatible with adjacent materials.

2.04 ACCESSORIES

A. Sealants, Tapes, and Accessories for Sealing Weather Barrier and Sealing Weather Barrier to Adjacent Substrates: As specified or as recommended by weather barrier manufacturer.

B. Parex sheathing joint tape. Over plywood sheathing joints.

C. Liquid Flashing: One part, fast curing, non-sag, gun grade, trowelable liquid flashing.
1. Manufacturers:
a. Parex USA, Inc; Parex USA WeatherTECH with WeatherFlash: www.parexusa.com/#sle.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and conditions are ready to accept the work of this section.

B. Flashing: Flashing must be installed prior to the water-resistive membrane & air barrier coating material and integrated with the wall field membrane to create positive drainage.

3.02 PREPARATION

A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.

B. Mix water-resistive membrane & air barrier materials in accordance with manufacturer's instructions

3.03 INSTALLATION

A. Install materials in accordance with manufacturer's instructions.

B. General: Installation shall conform to this specification and manufacturer's written instructions.
1. Flash all rough openings with water-resistive membrane & air barrier coating material embedded with sheathing tape or 4 oz reinforcing mesh.
2. Treat all sheathing joints, inside and outside corners and all exposed edges at terminations with water-resistive membrane & air barrier coating material and embed sheathing tape or 4 oz mesh by applying water-resistive membrane and air barrier coating. Trowel-On per application instruction to 4 in. of each side of membrane and air barrier coating. Trowel-On per application instruction to 4 in. of each side of . the joint and embed reinforcing fabric with a stainless steel trowel so that the color of the fabric is not visible.
3. Apply water-resistive membrane & air barrier coating to the entire surface of the substrate with a stainless steel trowel to a minimum wet thickness of 1.6mm (1/16 inch).
4. Ensure that the water-resistive membrane & air barrier coating laps onto all tracks and flashing to allow for any incidental moisture to be drained into the track/flashing.
5. Allow water-resistive membrane & air barrier coating to completely dry before proceeding with additional layers of the assembly.

C. Coatings:
1. Prepare substrate in manner recommended by coating manufacturer; treat joints with tapeed and coated joints and openings, in substrate and between dissimilar materials as recommended by manufacturer.
2. Use flashing to seal to adjacent construction and to bridge joints.

D. Openings and Penetrations in Exterior Weather Barriers:
1. Install flashing over sills, covering entire sill frame member, extending at least 5 inches onto weather barrier and at least 6 inches up jambs; mechanically fasten stretched edges.

2. At openings to be filled with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at least 4 inches wide; do not seal sill flange.
3. At openings to be filled with non-flanged frames, seal weather barrier to each side of opening framing, using flashing at least 9 inches wide, covering entire depth of framing.
4. At head of openings, install flashing under weather barrier extending at least 2 inches beyond face of jambs; seal weather barrier to flashing.
5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
6. Service and Other Penetrations: Form flashing around penetrating item and seal to weather barrier surface.

3.04 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements, for additional requirements.

B. Take digital photographs of each portion of the installation prior to covering up.

3.05 PROTECTION

A. Do not leave materials exposed to weather longer than recommended by manufacturer.

END OF SECTION

SECTION 07 4213.19

INSULATED METAL WALL PANELS - KINGSPAN

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Factory-assembled, insulated metal panels for walls, with trim, and accessory components.

1.02 RELATED REQUIREMENTS

A. Section 05 1200 - Structural Steel Framing: Structural steel building frame.

B. Section 07 6200 - Sheet Metal Flashing and Trim.

C. Section 07 9200 - Joint Sealants: Sealing joints between metal wall panel system and adjacent construction.

1.03 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2017.

B. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2010 (Reapproved 2015).

C. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2017.

D. ASTM C591 - Standard Specification for Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation; 2017.

E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

F. ASTM D2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates; 2016.

G. ASTM D4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films; 2007 (Reapproved 2015).

H. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by affected installers.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide manufacturer documentation on tested structural and thermal capabilities of assembled panel.

C. Shop Drawings: Indicate panel profiles, layout, exterior sheet gauge, interior sheet gauge, joints, dimensions, spans, sealant locations, construction details, methods of anchorage, and sequence of installation.

D. Selection Samples: For each finish product specified, submit at least three sample color chips representing manufacturer's standard range of available colors, sheen, and texture; 3 by 5 inch minimum.

E. Design Data: Provide calculations verifying panels will withstand design wind loads indicated without detrimental effects or exceeding deflection criteria.

F. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of type specified in this section and authorized by panel manufacturer.

B. Testing Agency Qualifications: Independent agency experienced in testing assemblies of type required for this project and having necessary facilities for full-size mock-up testing of type specified.

1.07 MOCK-UPS

A. See Section 01 4000 - Quality Requirements for additional requirements.

B. Construct mock-up, 33.5 feet long by 10 feet wide, including panels, sub-girts, attachments to building frame, associated vapor retarder and air seal materials, sealants and seals, and related insulation.

C. Locate where directed.

D. Mock-up may remain as part of work.

1.08 DELIVERY, STORAGE, AND HANDLING

A. See Section 01 7419 - Construction Waste Management and Disposal for packaging waste requirements.

B. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.

C. Store prefinished material above ground with weather protection to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

1.09 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Limited Warranty: Standard form in which manufacturer agrees to repair or replace items that fail in materials or workmanship within specified warranty period. Include structural performance, including bond integrity, deflection, and buckling.
   1. Warranty Period: Two years from Date of Substantial Completion, or two years and six months from date of shipment from manufacturer's plant, whichever occurs first.

C. Finish Warranty: Standard form in which manufacturer agrees to repair or replace metal panels that evidence deterioration of fluoropolymer finish. Deterioration includes flaking or peeling from approved primed metal substrate, chalk over 8 when tested in accordance with ASTM D4214, Method A, and color fading over 5 delta units on panels when tested in accordance with ASTM D2244.
   1. Warranty Period: Twenty years from Date of Substantial Completion, or 20 years from date of shipment from manufacturer's plant, whichever occurs first.

D. Thermal Warranty: Standard form in which manufacturer agrees to repair or replace panels that exhibit greater than 10 percent reduction from published R-value (RSI-value) at time of manufacture, as measured in compliance with ASTM C518 within specified warranty period.
   1. Warranty Period: Thirty years from Date of Substantial Completion, or 30 years and three months from date of shipment from manufacturer's plant, whichever occurs first.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Kingspan Insulated Panels; See Drawings for Types: www.kingspan.com/#sle.

B. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PANEL SYSTEM

A. Metal Panel System: Factory-assembled metal panel system, with trim, related flashings and accessory components.
   1. Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
   2. Accommodate tolerances of building structural framing.

2.03 PERFORMANCE REQUIREMENTS

A. Thermal Performance: Provide thermal resistance through entire system; R-value of 21.6 degrees F hr sq ft/Btu, minimum.

B. Structural Performance: Design and size to withstand dead loads and wind loads caused by positive and negative wind pressure acting normal to plane of panel.
   1. Verify structural performance in accordance with ASTM E330/E330M, using test pressure 1.5 times design wind pressure, with 10 seconds duration of maximum load.

C. Movement: Accommodate movement caused by following items without damage to system, components, or deterioration of seals:
   1. Normal movement between system components.
   2. Seasonal temperature cycling.
   3. Deflection of structural support framing.

2.04 PANELS AND TRIM

A. Wall Panels: Factory-assembled, foamed-in-place, insulated metal panels with exterior and interior sheet metal skins; panels interlock at edges, fitted with continuous gaskets.
   1. Panel Orientation: As indicated on drawings.
   2. Panel Thickness: 3 inches.

B. Trim, Closure Pieces, Expansion Joints, Caps, Flashings, Infills, External Corners, and Internal Corners: Same material, thickness, and finish as exterior face of insulated metal panel; brake formed to required profiles; fabricated in longest practicable lengths.

2.05 FOAMED-IN-PLACE INSULATION

A. Hybrid polyisocyanurate foamed-in-place core, ASTM C591 Type IV, CFC and HCFC free, Halogenated Flame Retardant (HFR) free, compliant with Montreal Protocol and Clean Air Act, with the following minimum physical properties.

2.06 FRAMING MATERIALS

A. Metal Framing Members: Provide sub-girts, zee-clips, base and sill angles and channels, hat-shaped and rigid channels, and furring channels as required for complete installation.
   1. Provide material strength, dimensions, and configuration as required to meet specified structural performance requirements.
   2. Sheet Steel Components: ASTM A653/A653M galvanized to G90/Z275 or zinc-iron alloy-coated to A60/ZF180; or ASTM A792/A792M aluminum-zinc coated to AZ60/AZM180.

2.07 ACCESSORIES

A. Fasteners: Manufacturer's standard corrosion-resistant type to suit application; hot-dip galvanized steel with soft neoprene washers. Where exposed fasteners are required, provide cap color to match exterior panel.

B. Clips: Manufacturer's standard stainless steel clips with PVC or neoprene sealing pads adhered to underside of clips; designed to prevent water infiltration around fastener penetrations.

C. Field Touch-up Paint: As recommended by panel manufacturer.

D. Concealed Sealants: Noncuring butyl sealant or tape sealant; type as recommended by panel manufacturer.

E. Sealant Between Insulated Metal Wall Panels and Adjacent Systems: See Section 07 9200 for additional requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that structural framing is ready to receive panel system.

3.02 INSTALLATION

A. Install panel system on walls and soffits in accordance with manufacturer's instructions.

B. Install panels plumb, level, and true-to-line with dimensions and layout indicated on approved shop drawings.

C. Permanently fasten panel system to structural supports; aligned, level, and plumb, within specified tolerances.

D. Locate panel joints over supports.

E. Use concealed fasteners unless otherwise indicated by Blakemore Architects.

F. Seal and place gaskets to prevent weather penetration, and maintain neat appearance.

3.03 CLEANING

A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements.

B. Remove protective film from metal panels immediately after installation.

C. Clean and wash prefinished surfaces of metal panels with mild soap and water; rinse with clean water.

D. Clear metal panel weep holes and drainage channels of obstructions, dirt, and sealant.

END OF SECTION

SECTION 07 4265

COMPOSITE PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aluminum composite material (building panels) used as the exterior cladding.

1.02 RELATED SECTIONS

A. Section 07600 - Flashing and Sheet Metal.

B. Section 07900 - Joint Sealers.

1.03 REFERENCES

A. ASTM B 117 - Standard Practice for Operating Salt Spray (Fog) Apparatus; 1997.

B. ASTM C 481 - Standard Test Method for Laboratory Aging of Sandwich Constructions; 1999.

C. ASTM D 822 - Standard Practice for Conducting Tests on Paint and Related Coatings and Materials Using Filtered Open-Flame Carbon-Arc Exposure Apparatus; 1996.

D. ASTM D 968 - Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive; 1993.

E. ASTM D 2247 - Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity; 1999.

F. ASTM D 3363 - Standard Test Method for Film Hardness by Pencil Test; 1992a.

G. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 1999.

1.04 SUBMITTALS

A. See Section 01300 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's catalog data, detail sheets, and specifications.

C. Shop Drawings: Prepared specifically for this project, not less than one-half size; show panel system including attachment methods, joinery, sealing methods, and accommodation of thermal movement.

D. Samples: Specified color.

E. Certification: Affidavit certifying that panels meet or exceed requirements specified.

1.05 QUALITY ASSURANCE

A. Painted Surfaces of Composite Panels: Meeting all criteria printed in manufacturer's literature.

B. Where possible, take field measurements before completion of shop fabrication.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect panel finish and edges per panel manufacturer's recommendations.

B. Store material in accordance with panel manufacturer's recommendations.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturer: Citadel Architectural Products. 800-446-8828. Sinocore Panel.

B. Provide all composite panels from a single manufacturer.

2.02 ALUMINUM COMPOSITE PANELS

A. Basis of Design: Citadel Sinocore at Canopy. See drawings

B. Finishes:

1. Colorweld 500 fluoropolymer coating utilizing Kynar resins.
    a. Color: Selected from laminator's "premium" color selections.

b. Factory-apply coating on a continuous process paint line, consisting of approximately 0.2 mil prime coat and approximately 0.8 mil finish coat containing Kynar resins; nominal dry film thickness of 1.0 mil.
c. Specular Gloss: 20-30 at 60 degrees.

2. Pencil Hardness: HB-H minimum (Eagle Turquoise), per ASTM D 3363.
3. Impact Adhesion: Showing no cracking and no loss of adhesion, per ASTM D 2794.
4. Humidity Resistance: Showing no blisters after 3,000 hours of 100 percent humidity at 95 degrees F., per ASTM D 2247.
5. Salt Spray Resistance: Scored sample showing none or few No. 8 blisters and less than 1/8 inch average creepage from scribe after 3,000 hours of exposure to 5 percent salt fog at 95 degrees F., per ASTM B 117.

2.03 ACCESSORIES

A. Sealants: Compatible with panel materials.

2.04 PANEL FABRICATION

A. Composition: Thermoplastic compound core sandwiched between two aluminum sheets formed by a continuous process.

B. Aluminum Face Sheets: 3105 H25 aluminum alloy.
1. Thickness: .032/.010.

C. Tolerances:
1. Panel Bow: Maximum 0.8 percent of panel overall width or length dimension.
2. Panel Dimensions: Allowance for field adjustment and thermal movement.
3. Panel Lines, Breaks, and Curves: Sharp, smooth, free of warps or buckles.
4. Flatness: Visually flat.

D. Panel Surfaces: Free of scratches or marks caused during fabrication.

PART 3 EXECUTION

3.01 EXAMINATION

A. Panel Substructure:
1. Level and plumb.
2. Free of defect detrimental to work and erected in accordance with established building tolerances.

B. Installer shall inspect substructure and shall not proceed with panel erection until deviations are corrected.

3.02 INSTALLATION

A. Route & Return System, Dry Seal. Erect panels level and plumb, in proper alignment and relation to substructure framing and established lines.

B. Erect panels in accordance with approved shop drawings.

C. Maximum Deviation of Erected Panels from Vertical or Horizontal Alignment: 1/4 inch in 20 feet.

D. Anchor panels structurally sound and per engineering recommendations, if required.

E. Joint Design: Route & Return.
1. Smooth "rout and return" installation.
2. Corners to be "V" grooved and bent.
a. The face skin and a minimum thickness of 0.020" (0.51 mm) of core material are all that remain after routing. The corners are removed and the edges are folded to create a 1" (25MM)-DEEP “PAN” OR CASSETTE.

3.03 ADJUSTING AND CLEANING

A. Replace panels that have received irreparable damage.

B. Clean foreign material from panel gutter system when applicable.

C. Remove strippable film (if used) as soon as possible after surrounding material has been installed and glass above has been washed. Remove prior to calking joints.

END OF SECTION

SECTION 07 5400

THERMOPLASTIC MEMBRANE ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Adhered system with thermoplastic roofing membrane.

B. Insulation, flat and tapered.

C. Flashings.

D. Roofing stack boots and walkway pads.

1.02 RELATED REQUIREMENTS

A. Section 06 1000 - Rough Carpentry: Wood nailers and curbs.

B. Section 07 6200 - Sheet Metal Flashing and Trim: Counterflashings, reglets and_____.

C. Section 07 7200 - Roof Accessories: Roof-mounted assess hatch unit.

1.03 REFERENCE STANDARDS

A. ASTM C208 - Standard Specification for Cellulosic Fiber Insulating Board; 2012.

B. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2017a.

C. ASTM C726 - Standard Specification for Mineral Wool Roof Insulation Board; 2017.

D. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2017.

E. ASTM D6878/D6878M - Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing; 2017.

F. FM (AG) - FM Approval Guide; current edition.

G. FM DS 1-28 - Wind Design; 2016.

H. NRCA (RM) - The NRCA Roofing Manual; 2018.

I. NRCA (WM) - The NRCA Waterproofing Manual; 2005.

J. NRCA ML104 - The NRCA Roofing and Waterproofing Manual; National Roofing Contractors Association; Fifth Edition, with interim updates.

K. UL (FRD) - Fire Resistance Directory; Current Edition.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data indicating membrane materials, flashing materials and insulation.

C. Specimen Warranty: For approval.

D. Shop Drawings: Submit drawings that indicate joint or termination detail conditions, conditions of interface with other materials, and paver layout.

E. Manufacturer's Installation Instructions: Indicate membrane seaming precautions and perimeter conditions requiring special attention.

F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

G. Manufacturer's Field Reports: Indicate procedures followed, ambient temperatures, humidity, wind velocity during application, and supplementary instructions given.

H. Manufacturer's Qualification Statement.

I. Installer's Qualification Statement.

J. Warranty Documentation:

1. Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

2. Submit installer's certification that installation complies with warranty conditions for waterproof membrane.

K. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing the work of this section with at least three years of documented experience and approved by manufacturer.
   1. Approved by membrane manufacturer.

1.06 PRE-INSTALLATION MEETING

A. Convene one week before starting work of this section.

B. Review preparation and installation procedures and coordinating and scheduling required with related work.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in manufacturer's original containers, dry, undamaged, with seals and labels intact.

B. Store products in weather protected environment, clear of ground and moisture.

C. Ensure storage and staging of materials does not exceed static and dynamic load-bearing capacities of roof decking.

D. Protect foam insulation from direct exposure to sunlight.

1.08 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. System Warranty: Provide manufacturer's system warranty agreeing to repair or replace roofing that leaks or is damaged due to wind or other natural causes.
   1. Warranty Term: 20 years.
   2. For repair and replacement include costs of both material and labor in warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Thermoplastic Polyolefin (TPO) Membrane Roofing Materials:
   1. Genflex; www.genflex.com, 800-443-4272
   2. Carlisle SynTec; : www.carlisle-syntec.com.
   3. Firestone Building Products, LLC; _____: www.firestonebpco.com/#sle.
   4. GAF Materials Corporation, Everguard; www.gaf.com
   5. Substitutions: See Section 01 6000 - Product Requirements.

B. Insulation:
   1. Genflex; www.genflex.com.
   2. Atlas Roofing Corporation: www.atlasroofing.com.
   3. GAF Materials Corporation: www.gaf.com.
   4. Dow Chemical Co: www.dow.com.
   5. Owens Corning Corporation; _____: www.ocbuildingspec.com/#sle.
   6. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ROOFING - UNBALLASTED APPLICATIONS

A. Thermoplastic Membrane Roofing: One ply membrane, fully adhered, over insulation.

B. Roofing Assembly Requirements:
   1. Roof Covering External Fire Resistance Classification: UL (FRD) Class A.
   2. Insulation Thermal Resistance (R-Value): 6 (R-30 Min) per inch, minimum; provide insulation of thickness required.

C. Acceptable Insulation Types - Constant Thickness Application: Any of the types specified.
   1. Minimum 2 layers of cellulose, perlite, molded polystyrene, polyisocyanurate, glass fiber, extruded polystyrene, or composite board.
   2. Bottom layer of cellulose, perlite, molded polystyrene, polyisocyanurate, glass fiber, extruded polystyrene, composite, or cellular glass board covered with single layer of cellulose, perlite, molded polystyrene, polyisocyanurate, glass fiber, extruded polystyrene, or composite board.

D. Acceptable Insulation Types - Tapered Application: _____.

2.03 MEMBRANE ROOFING AND ASSOCIATED MATERIALS

A. Membrane Roofing Materials:
   1. Material: Thermoplastic polyolefin (TPO) complying with ASTM D 6878.
      a. Thickness: 60 mil, 0.060 inch, minimum.
   2. Reinforcing: Internal fabric.
   3. Thickness: 0.060 inch, minimum.
   4. Sheet Width: Factory fabricated into largest sheets possible.10' wide minimum.
   5. Color: White.

B. Seaming Materials: TPO, as recommended by MNFR. Hot air weld.

C. Flexible Flashing Material: Same material as membrane.

2.04 INSULATION

A. Cellulose Fiber Board Insulation: ASTM C208, Type II, natural finish.

B. Expanded Polystyrene (EPS) Board Insulation: Complies with ASTM C578, with drainage channels on one face.
   1. Board Size: 48 by 96 inch.
   2. Board Thickness: 2.6 inches.
   3. Tapered Board: Slope as indicated; minimum thickness 1/2 in; fabricate of fewest layers possible.
   4. Board Edges: Square.
   5. Manufacturers:
      a. Atlas Molded Products, a Division of Atlas Roofing Corporation; ThermalStar EPS Roof Insulation Board: www.atlasmoldedproducts.com/#sle.
   6. Substitutions: See Section 01 6000 - Product Requirements.

C. Glass Fiber Board Insulation: Rigid glass fiber, ASTM C726; top surface coated with asphalt and Kraft paper.
   1. Board Size: 48 by 48 inch.
   2. Board Thickness: 1 inches.

2.05 ACCESSORIES

A. Stack Boots: Prefabricated flexible boot and collar for pipe stacks through membrane; same material as membrane.

B. Insulation Fasteners: Appropriate for purpose intended and approved by roofing manufacturer.
   1. Length as required for thickness of insulation material and penetration of deck substrate, with metal washers.

C. Membrane Adhesive: As recommended by membrane manufacturer.

D. Surface Conditioner for Adhesives: Compatible with membrane and adhesives.

E. Thinners and Cleaners: As recommended by adhesive manufacturer, compatible with membrane.

F. Sealants: As recommended by membrane manufacturer.

G. Walkway Pads: Suitable for maintenance traffic, contrasting color or otherwise visually distinctive from roof membrane.
   1. Composition: Roofing membrane manufacturer's standard.

2. Size: 18 by 18 inch.
3. Surface Color: White or yellow.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Perform work in accordance with NRCA Roofing and Waterproofing Manual and manufacturer's instructions.

B. Do not apply roofing membrane during unsuitable weather.

C. Do not apply roofing membrane when ambient temperature is outside the temperature range recommended by manufacturer.

D. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.

E. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

3.02 EXAMINATION

A. Verify that surfaces and site conditions are ready to receive work.

B. Verify deck is supported and secure.

C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.

D. Verify deck surfaces are dry and free of snow or ice.

E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and cant strips are in place.

3.03 INSTALLATION - GENERAL

A. Perform work in accordance with manufacturer's instructions, NRCA (RM), and NRCA (WM) applicable requirements.

B. Do not apply roofing membrane during unsuitable weather.

C. Do not apply roofing membrane when ambient temperature is outside the temperature range recommended by manufacturer.

D. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.

E. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

3.04 INSULATION - UNDER MEMBRANE

A. Attachment of Insulation:
   1. Mechanically fasten insulation to deck in accordance with roofing manufacturer's instructions and FM (AG) Factory Mutual requirements.

B. Lay subsequent layers of insulation with joints staggered minimum 6 inch from joints of preceding layer.

C. Place tapered insulation to the required slope pattern in accordance with manufacturer's instructions.

D. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.

E. Do not apply more insulation than can be covered with membrane in same day.

3.05 MEMBRANE APPLICATION

A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.

B. Shingle joints on sloped substrate in direction of drainage.

C. Fully Adhered Application: Apply adhesive to substrate at rate of per manufactures reccomendation gal/sq ft. Fully embed membrane in adhesive except in areas directly over or within 3 inches of expansion joints. Fully adhere one roll before proceeding to adjacent rolls.

D. At intersections with vertical surfaces:
   1. Extend membrane up a minimum of 8 inches onto vertical surfaces.
   2. Fully adhere flexible flashing over membrane and up to nailing strips.

E. Around roof penetrations, seal flanges and flashings with flexible flashing.

F. Coordinate installation of roof drains and sumps and related flashings.

3.06 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements for additional requirements.

B. See Section 01 4000 - Quality Requirements, for general requirements for field quality control and inspection.

C. Require site attendance of roofing and insulation material manufacturers daily during installation of the Work.

3.07 CLEANING

A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements.

B. See Section 01 7419 - Construction Waste Management and Disposal, for additional requirements.

C. Remove bituminous markings from finished surfaces.

D. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.

E. Repair or replace defaced or damaged finishes caused by work of this section.

3.08 PROTECTION

A. Protect installed roofing and flashings from construction operations.

B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

END OF SECTION

SECTION 07 6200

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fabricated sheet metal items, including flashings, counterflashings, and Factory , Pre-Fabricated Parapet wall copings and other indicated items.

B. Sealants for joints within sheet metal fabrications.

1.02 RELATED REQUIREMENTS

A. Section 07 9005 - Joint Sealers.

1.03 REFERENCE STANDARDS

A. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2017a.

B. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2014.

C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

D. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007, with Editorial Revision (2012).

E. CDA A4050 - Copper in Architecture - Handbook; current edition.

F. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

C. Samples: Submit two samples, 12" by 12" inch in size illustrating material and color of typical standing seam and pre-finished coping.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA (ASMM) and CDA A4050 requirements and standard details, except as otherwise indicated.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

B. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Sheet Metal Flashing and Trim Manufacturers:
   1. Parapet Wall Copings: Metal Era - Engineered Roof Solutions. "Perma-Tite" 20 year, 120 MPH Wind Warrantee..

2.02 SHEET MATERIALS

A. Pre-Finished Galvanized Steel: ASTM A 653/A 653M, with G90/Z275 zinc coating; minimum 24 ga. thick base metal, shop pre-coated with Kynar 500 30 year finish warrantee, color as selected by Architect.
   1. Colors to be as follows:
      a. Match Metal Composite Panel color. Metal to be supplied from same supplier at wall panels.

2.03 ACCESSORIES

A. Fasteners: Galvanized steel .

B. Factory fabricated miters. Inside and Outside Corners.

C. 12" long, 24 ga. spring clips placed at 4'-0" o.c.

D. Factory Splice plates.

E. Sealant: Type butyl specified in Section 07 9005.

2.04 FABRICATION

A. Form sections true to shape, accurate in size, square, and free from distortion or defects.

B. Fabricate parapet wall coping cleats of [20 guage galvanized steel.] type sheet metal.

C. Form parapet wall coping pieces 12' lengths.

D. Fabricate parapet wall coping corners from one piece with minimum 24 inch long legs; seam for rigidity, seal with sealant.

E. Parapet wall coping, Face Height 4" min.-(see drawings). [Fabricate vertical faces with bottom edge formed outward 1/4 inch (6 mm) and hemmed to form drip].

2.05 ACCESSORIES

A. Primer: Zinc chromate type.

B. Concealed Sealants: Non-curing butyl sealant.

C. Exposed Sealants: ASTM C920; elastomeric sealant, with minimum movement capability as recommended by manufacturer for substrates to be sealed; color to match adjacent material.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.

B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 PREPARATION

A. Install starter and edge strips, and cleats before starting installation.

3.03 INSTALLATION

A. Conform to drawing details.

B. Secure flashings in place using concealed fasteners.

C. Parapet wall copings - Snap On Installation.

D. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.

E. Seal metal joints watertight.

3.04 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements, for field inspection requirements.

B. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

END OF SECTION

SECTION 07 9005

JOINT SEALERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sealants and joint backing.

B. Precompressed foam sealers.

C. Provide sealants at;

1. Bathroom ceramic fixtures and countertops.
2. Bathroom fixtures and wall surfaces.
3. Edges of all door frames and adjacent wall finishes, at all locations.
4. Edges of all window and storefront frames and adjacent wall finishes.
5. Sealant continuously at all exposed concrete control and expansion joints in floor slabs.
6. Fire caulk penetrations in fire rated floors and walls at top and bottom.
7. Caulk all Citadel Sinocore panel joints (by panel installers).
8. Seal off all walls that touch the metal roof deck with neoprene gaskets and sealant.
9. Seal off all penetrations thru exterior walls for utilitiy lines, pipes, hose bibs, wiring, grills and louvers.

D. Backer Rod

1.02 RELATED REQUIREMENTS

A. Section 07431-Metal Composite Material Wall Panels

B. Section 08 8000 - Glazing: Glazing sealants and accessories.

1.03 REFERENCE STANDARDS

A. ASTM C834 - Standard Specification for Latex Sealants; 2017.

B. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications; 2012 (Reapproved 2017).

C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

D. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.

E. ASTM D1056 - Standard Specification for Flexible Cellular Materials--Sponge or Expanded Rubber; 2014.

F. ASTM D1667 - Standard Specification for Flexible Cellular Materials--Poly(Vinyl Chloride) Foam (Closed-Cell); 2017.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with other sections referencing this section.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data indicating sealant chemical characteristics.

C. Samples: Submit two samples, 2" in size illustrating sealant colors for selection.

D. Manufacturer's Installation Instructions: Indicate special procedures.

1.06 QUALITY ASSURANCE

A. Maintain one copy of each referenced document covering installation requirements on site.

1.07 FIELD CONDITIONS

A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.08 COORDINATION

A. Coordinate the work with all sections referencing this section.

1.09 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Correct defective work within a two year period after Date of Substantial Completion.

C. Warranty: Include coverage for installed sealants and accessories which fail to achieve airtight seal and watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS AND PRODUCTS

A. Gunnable and Pourable Sealants:
   1. BASF Construction Chemicals-Building Systems: www.buildingsystems.basf.com.
   2. Dow Corning Corporation: www.dowcorning.com.
   3. Tremco Global Sealants: www.tremcosealants.com.
   4. Sherwin-Williams Company: www.sherwin-williams.com.
   5. W.R. Meadows, Inc: www.wrmeadows.com.
   6. Sika Corporationj.

B. Type A: Silicone Sealants: Joints Between Plumbing Fixtures and Walls and Floors, and Between Countertops and Walls
   1. Application: for non-porous surfaces such as Non-structural glazing, aluminum, tile, fiberglass and plastic laminate. Non-structural glazing, sanitary seals, in kitchen and restroom areas, back splashes, vanities etc. and general use on HVAC, plumbing construction.
      a. Location: Above grade. Interior and Exterior.
      b. Max. depth 1/2" Min. depth: 1/4"
      c. In deep joints the sealant depth must be controlled by Closed Cell Backer Rod.
         1) Backer rod should be approximately 25% larger in diameter than the joint width.
         2) Do not prime or puncture backer rod.
   2. Sonneborn Building Products, ChemRex, Inc; Product Sonolastic Omniplus: www.chemrex.com.
   3. Dow Corning Corp; Product 791 Silicone Weatherproofing Sealant: www.dowcorning.com.
      a. Locations
         1) Expansion Joints
         2) Connection
         3) Perimeter
         4) Movement joints
      b. Suitable for use on:
         1) Coated glass
         2) Galvanized steel
         3) Copper
         4) Masonry
   4. Dow Corning Corp; Product 795 Silicone Building Sealant: www.dowcorning.com.
      a. Locations
         1) Structural and non-structural glazing.
         2) Structural attachment of many panel systems.
         3) Panel stiffener applications
      b. Suitable for use on:
         1) Weather sealing of glass
         2) Aluminum
         3) Steel
         4) Painted metal
         5) EIFS
         6) Granite
         7) Stone
         8) Concrete

9) Brick
10) Plastics

5. GE Plastics; Product GE Silicone; Silglaze II: www.gespecialtymaterials.com.
   a. Locations
      1) Structural and non-structural glazing.
      2) General Purpose sealing applications.
      3) Applications where FDA or USDA compliance is required.
   b. Suitable for use on:
      1) Weather sealing of glass
      2) Paintable applications.
6. GE Plastics; Product GE Silicone; Silpruf: www.gespecialtymaterials.com.
   a. Locations
      1) Structural adhesive.
      2) Structural Glazing.
      3) Weatherproofing Joints
   b. Suitable for use on:
      1) Glass
      2) Polycarbonate
      3) Vinyl
      4) Plastics
      5) Treated and untreated wood
      6) and powder coated metals
      7) Anodized aluminum
      8) EFIS
      9) Ceramic and porcelain materials
      10) Concrete
      11) Natural Stone
7. Surebond; Product [SB-188 Silicone Rubber].
   a. Locations
      1) Movement joints
      2) Dissimilar metal separation
      3) high temperature uses
      4) -75 deg - 500 deg F
   b. for use on:
      1) Metal
      2) Plastics
      3) Fiberglass
      4) Glass
      5) Wood
      6) Foam
      7) Painted surfaces
      8) Rubbers

C. Type B: Joints in Exterior Metal Work and Siding.
   1. Surebond; Product [SB-895 Neutral Cure]. 100% urethane sealant
      a. Locations
         1) Structural adhesive.
         2) Structural Glazing.
         3) Weatherproofing Joints
      b. Suitable for use on:
         1) Glass
         2) Fiberglass
         3) Metal
         4) Painted and galvanized metal
         5) Prefinished panels

6) Composite board
7) Brick
8) EFIS
9) Laminates
10) Concrete
11) Natural Stone

2. Tremco, Inc; Product Spectrem 3 & Primer 23: www.tremcosealants.com.
   a. Locations
      1) Dynamically moving joints, ie. expansion joints
   b. Suitable for use on:
      1) Aluminum curtain walls
      2) Metal panels
      3) Window perimeters

D. Type C: Control and Expansion Joints in Paving
   1. One Moisture Curing Part Gun Grade Polyurethane Sealant - Single Component, Moisture curing Polyurethane:
      a. Tremco: Dymonic:
         1) Locations:
            (a) Sealing dynamically moving joints such as:
               (1) Expansion and control joints. window, door perimeters, masonry joints, etc.
               (2) Concrete joints
               (3) Window and door perimeters
               (4) Bedding of mullions and frames
   2. Sonneborn Building Products, ChemRex, Inc; Product Sonolastic SL1: www.chemrex.com.
      a. Locations
         1) Expansion joints in concrete floors
         2) Concrete sidewalks
         3) Pavements

E. Type E: Lap Joints in Exterior Sheet Metal Work:
   1. Tremco, Inc; Product Tremco Butyl Sealant: www.tremcosealants.com.
      a. Locations:
         1) Metal Panel Joining.
         2) areas where a seal is required against neoprene, or EPDM gaskets.

F. Type F: Concealed bedding joint sealant:
   1. Tremco, Inc; Product Tremco Butyl Sealant: www.tremcosealants.com.
      a. Location:
         1) Under Exterior Door Thresholds
   2. BASF Construction Chemicals-Building Systems: www.chemrex.com.

G. Type G: Interior Joints for Which No Other Sealant is Indicated:
   1. Tremco, Inc; Product Vulkem 116: www.tremcosealants.com.
      a. Location:
         1) Masonry
         2) Window perimeters
         3) Similar types of construction joints. Interior and Exterior

H. Type H: In STC-Rated Walls, Between Metal Stud Track/Runner and Adjacent Construction, and Between Outlet Boxes and Gypsum Board. Apply this sealant where at all Private Offices, Conference Rooms, Toilet Rooms, .Siliconized Acrylic Latex Sealant:
   1. Tremco: Tremflex 834.
      a. Locations:
         1) Interior and exterior caulking.
         2) Acoustical sealing.

b. Suitable for use on:
1) Interior walls.
2) Ceilings.
3) Floors to reduce sound transmission.

2. Tremco: Tremco Acoustical Sealant
a. Location:
b. Acoustically sealing of drywall partitions.
c. Acoustically sealing corridors.
d. Acoustically sealing party walls.

I. Type I: Control and Expansion Joints in Interior Concrete Slabs and Floors: One Part Moisture Curing Polyurethane Sealant:
1. BASFTF-100.
a. Fast setting two-component polyurea control joint filler.
b. Color: grey.
c. Concrete must be cured for 28 days. min. 90-120 days preferred.

2.02 SEALANTS

A. Type k - Nonsag Polyurethane Sealant: ASTM C920, Grade NS, Class 25, Uses NT, I, M, A, G, O; single component, chemical curing, non-staining, non bleeding, capable of continuous water immersion, non-sagging type.

[Precast Concrete Wall Panel joint sealant].
1. Color: Match adjacent finished surfaces.
2. Product: Sika 2cNS manufactured by Sika Corp. US.

2.03 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing: Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.
1. Preformed Compressible Foam Sealers:
a. Emseal Joint Systems, Ltd: www.emseal.com.
b. Sandell Manufacturing Company, Inc: www.sandellmfg.com.
c. Dayton Superior Corporation: www.daytonsuperior.com.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

B. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean and prime joints in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Protect elements surrounding the work of this section from damage or disfigurement.

3.03 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Perform installation in accordance with ASTM C1193.

C. Perform acoustical sealant application work in accordance with ASTM C919.

D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.

E. Install bond breaker where joint backing is not used.

F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

G. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

H. Tool joints concave.

3.04 CLEANING

A. Clean adjacent soiled surfaces.

3.05 PROTECTION

A. Protect sealants until cured.

END OF SECTION

SECTION 08 1613

FIBERGLASS DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fiberglass doors.

B. Fiberglass door frames.

1.02 RELATED REQUIREMENTS

A. Section 08 7100 - Door Hardware.

B. Section 08 8000 - Glazing.

1.03 REFERENCE STANDARDS

A. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2011.

B. ASTM D635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position; 2014.

C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2018.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Obtain hardware templates from hardware manufacturer prior to starting fabrication.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide manufacturer's standard details, installation instructions, hardware and anchor recommendations.

C. Shop Drawings: Indicate layout and profiles; include assembly methods.
   1. Indicate product components, including hardware reinforcement locations and preparations, accessories, finish colors, patterns, and textures.
   2. Indicate wall conditions, door and frame elevations, sections, materials, gauges, finishes, location of door hardware by dimension, and details of openings; use same reference numbers indicated on drawings to identify details and openings.

D. Selection Samples: Submit two complete sets of color chips, illustrating manufacturer's available finishes, colors, and textures.

E. Installer's qualification statement.

F. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer; include detailed terms of warranty.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section, with not less than three years of experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience and approved by manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Mark doors with location of installation, door type, color, and weight.

B. Deliver materials in manufacturer’s original, unopened, undamaged containers with identification labels intact.

C. Store materials in original packaging, under cover, protected from exposure to harmful weather conditions and from direct contact with water.
   1. Store at temperature and humidity conditions recommended by manufacturer.

2. Do not use non-vented plastic or canvas shelters.
3. Immediately remove wet wrappers.

D. Store in position recommended by manufacturer, elevated minimum 4 inches above grade, with minimum 1/4 inch space between doors.

1.08 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Provide five (5) year manufacturer warranty covering materials and workmanship, including degradation or failure due to chemical contact.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Molded Fiberglass Doors:
1. ChemPruf Door Company, Ltd; Style 4: www.chem-pruf.com/#sle.
2. Substitutions: See Section 01 6000 - Product Requirements.

2.02 DOOR AND FRAME ASSEMBLIES

A. Door and Frame Assemblies: Factory-fabricated, prepared and machined for hardware.
1. Operation: Manual.
2. Physical Endurance: Swinging door cycle test to ANSI/SDI A250.4, Level A (1,000,000 cycles) minimum; tested with hardware and fasteners intended for use on project.
3. Screw-Holding Capacity: Tested to 890 pounds, minimum.
4. Surface Burning Characteristics: Flame spread index (FSI) of 0 to 25, Class A, and smoke developed index (SDI) of 450 or less, when tested in accordance with ASTM E84.
5. Flammability: Self-extinguishing when tested in accordance with ASTM D635.
6. Clearance Between Door and Frame: 1/8 inch, maximum.
7. Clearance Between Bottom of Door and Finished Floor: 3/4 inch, maximum; not less than 1/4 inch clearance to threshold.

2.03 COMPONENTS

A. Doors: Fiberglass construction with reinforced core.
1. Type: As indicated on drawings, including swinging and sliding doors.
2. Thickness: 1-3/4 inch, nominal.
3. Core Material: Manufacturer's standard core material for application indicated.
4. Construction:
5. Face Sheet Texture: Smooth.
6. Door Panel Configuration: As indicated on drawings.
7. Subframe and Reinforcements: Manufacturer's standard materials.
8. Waterproof Integrity: Provide factory fabricated edges, cut-outs, and hardware preparations of fiberglass reinforced plastic (FRP); provide cut-outs with joints sealed independently of glazing, louver inserts, or trim.
9. Hardware Preparations: Factory reinforce, machine, and prepare for door hardware including field installed items; provide solid blocking for each item; field cutting, drilling or tapping is not permitted; obtain manufacturer's hardware templates for preparation as necessary.

B. Door Frames: Provide type in compliance with performance requirements specified for doors.
1. Type: Factory assembled with chemically welded joints.
2. Profiles: 5-3/4 inches deep, 2 inches wide at jambs, and 2 inches wide at headers.
3. Door Stop: 5/8 inch wide, by 1-7/8 inches deep.
4. Non-Fire-Rated:
   a. Fiberglass reinforced plastic (FRP) with gel-coating matching doors.
5. Frame Anchors: Stainless steel, Type 304; provide three anchors in each jamb for heights up to 84 inches with one additional anchor for each additional 24 inches in height.
6. Reinforcing: Provide manufacturer's standard reinforcing at hinge, strike, and closer locations.

2.04 PERFORMANCE REQUIREMENTS

A. Provide door assemblies that have been designed and fabricated in compliance with specified performance requirements.

2.05 FINISHES

A. Gel Coating: Ultraviolet (UV) stabilized polyester finish.
   1. Thickness: Minimum 15 mils, 0.015 inch wet thickness, plus/minus 3 mils, 0.003 inch.
   2. Color: As selected by Blakemore Architects from manufacturer's standard line of colors.

2.06 HARDWARE

A. Door Hardware: See Section 08 7100.

2.07 ACCESSORIES

A. Stops for Glazing and Louver: Fiberglass, unless otherwise indicated or required by fire rating; provided by door manufacturer to fit factory made openings, with color and texture to match door; fasteners shall maintain waterproof integrity.
   1. Exterior Doors: Provide non-removable stops on exterior side with continuous compression gasket weatherseal.
   2. Glazed Openings: Provide removable stops on interior side.
   3. Opening Sizes and Shapes: As indicated on drawings.

B. Glazing: See Section 08 8000.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

3.02 PREPARATION

A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

B. Clean and prepare substrate in accordance with manufacturer's directions.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions; do not penetrate frames with anchors.

B. Set units plumb, level, and true-to-line, without warping or racking doors, and with specified clearances; anchor in place.

C. Separate aluminum and other metal surfaces from sources of corrosion of electrolytic action at points of contact with other materials.

D. Repair or replace damaged installed products.

3.04 ADJUSTING

A. Lubricate, test, and adjust doors to operate easily, free from warp, twist or distortion, and to fit watertight for entire perimeter.

B. Adjust hardware for smooth and quiet operation.

C. Adjust doors to fit snugly and close without sticking or binding.

3.05 CLEANING

A. Clean installed products in accordance with manufacturer’s instructions prior to owner’s acceptance.

3.06 PROTECTION

A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION

SECTION 08 3613

SECTIONAL DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Overhead sectional doors, electrically operated.

B. Operating hardware and supports.

C. Electrical controls.

1.02 RELATED REQUIREMENTS

A. Section 06 1000 - Rough Carpentry: Rough wood framing for door opening.

B. Section 07 9005 - Joint Sealers: Perimeter sealant and backup materials.

1.03 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2017.

B. ASTM C1036 - Standard Specification for Flat Glass; 2016.

C. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014.

D. DASMA 102 - American National Standard Specifications for Sectional Overhead Type Doors; 2011.

E. ITS (DIR) - Directory of Listed Products; current edition.

F. NEMA ICS 2 - Industrial Control and Systems Controllers, Contactors and Overload Relays Rated 600 Volts; 2000, with Errata (2008).

G. NEMA MG 1 - Motors and Generators; 2017.

H. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2014.

I. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

J. UL (DIR) - Online Certifications Directory; Current Edition.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.

C. Product Data: Show component construction, anchorage method, and hardware.

D. Samples: Submit two panel finish samples, 4 by 4 inch in size, illustrating color and finish.

E. Manufacturer's Installation Instructions: Include any special procedures required by project conditions.

F. Operation Data: Include normal operation, troubleshooting, and adjusting.

G. Maintenance Data: Include data for motor and transmission, shaft and gearing, lubrication frequency, spare part sources.

H. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

B. Installer: Company specializing in performing the work of this section with minimum 5 years of experience.

C. Conform to applicable code for motor and motor control requirements.

D. Products Requiring Electrical Connection: Listed and classified by ITS (DIR), UL (DIR), or testing firm acceptable to authorities having jurisdiction, as suitable for purpose specified.

1.06 WARRANTY

A. See Section 01 7800 - Closeout Submittals for warranty requirements.

B. Correct defective Work within a five year period after Date of Substantial Completion.

C. Warranty: Include coverage for electric motor and transmission.

D. Provide five year manufacturer warranty for electric operating equipment.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: _____ manufactured by _____.
   1. TC Thermaseal 200C Commercial Sectional Garage Doors manufactured by Raynor.

B. Other Acceptable Manufacturers - Sectional Doors:
   1. Clopay Building Products: www.clopaydoor.com/#sle.
   2. Substitutions: See Section 01 6000 - Product Requirements.

2.02 STEEL DOORS

A. Steel Two Sided Sectional Doors: Flush steel, insulated; high lift operating style with track and hardware; complying with DASMA 102, Commercial application.
   1. Performance: Withstand positive and negative wind loads equal to 1.5 times design wind loads specified by local code without damage or permanent set, when tested in accordance with ASTM E330/E330M, using 10 second duration of maximum load.
   2. Door Nominal Thickness: 2 inches thick.
   3. Exterior Finish: Factory finished with acrylic baked enamel; color as selected by Architect.
   4. Interior Finish: Factory finished with acrylic baked enamel; color as selected from manufacturers standard line.
   5. Glazed Lights: Full panel width, one row; set in place with resilient glazing channel.
   6. Operation: Electric.

B. Door Panels: Steel construction; outer steel sheet of 20 gage, 0.0359 inch.015 inch minimum thickness, flushstucco profile; inner steel sheet of 20 gage, 0.0359 inch.015 inch minimum thickness, flatstucco profile; core reinforcement manif. std. inch sheet steel roll formed to channel shape, rabbeted weather joints at meeting rails; polyurethane insulation.

C. Glazing: Annealed float glass; single pane; clear; 1 inch thick.

D. Warrantee; 10 year rust through and delamination.

2.03 COMPONENTS

A. Heavy Duty Track: Rolled galvanized steel, 13 gauge thick; 2 inch wide, continuous one piece per side; galvanized steel mounting brackets 13 gauge galvanized thick.

B. Heavy Duty Hinge and Roller Assemblies: Heavy duty hinges and adjustable roller holders of galvanized steel; floating hardened steel bearing rollers, located at top and bottom of each panel, each side.

C. Lift Mechanism: Torsion spring on cross head shaft, with braided galvanized steel lifting cables.

D. Sill Weatherstripping: Resilient hollow neoprene 3" EPDM strip, one piece; fitted to bottom of door panel, full length contact.

E. Jamb Weatherstripping: Roll formed steel section full height of jamb, fitted with resilient weatherstripping, placed in moderate contact with door panels.

F. Head Weatherstripping: EPDM rubber seal, one piece full length.

G. Panel Joint Weatherstripping: Raynor Standard, one piece full length.

H. Lock: Inside center mounted, adjustable keeper, spring activated latch bar with feature to retain in locked or retracted position; interior and exterior handle.

I. Provide galvanized steel stiffeners screwed to in inner panels. Minimum, 3 per 8' h. door and 5 per 14' door minimum, manufacturer shall provide more if requiredby thier in house enginnering.

J. See Drawings/Door Scedule for additional accessories.

2.04 MATERIALS

A. Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M, with Raynor Standard coating, stucco surface.

B. Float Glass: Provide float glass glazing, unless noted otherwise.
   1. Annealed Type: ASTM C1036, Type I, transparent flat, Class 1 clear, Quality Q3 (glazing select).

C. Insulation: Rigid polystyrene.
   1. R value of 10.25.
   2. Same thickness as core framing members.

2.05 ELECTRICAL OPERATION

A. Electric Operators:
   1. Mounting: Side mounted on cross head shaft.
   2. Motor Enclosure:
   3. 3 hpRaynor Hoist Optima rated load amperes; manually operable in case of power failure, transit speed of 12 inches per second.
   4. Motor Voltage: 480 volts, three phase, 60 Hz.
   5. Motor Controller: NEMA ICS 2, full voltage, reversing magnetic motor starter.
   6. Controller Enclosure: NEMA 250, Type 1.
   7. Opening Speed: 12 inches per second.
   8. Brake: Adjustable friction clutch type, activated by motor controller.
   9. Manual override in case of power failure.
   10. 25 amperes maximum <<circuit breaker size; or overcurrent protection>>, <<minimum circuit capacity; or None - N/A>>.
   11. Refer to Section 26 0583 for electrical connections.
   12. Coordinate with Electrical Contractor on power requirments

B. Motor: NEMA MG1, Type 1, belt drive.

C. Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated; enclose terminal lugs in terminal box sized to conform to NFPA 70.

D. Disconnect Switch: Factory mount disconnect switch in control panel.

E. Safety Edge: At bottom of door panel, full width; electro-mechanical sensitized type, wired to reverse door upon striking object; hollow neoprene covered to provide weatherstrip seal.

F. Control Station: Standard three button (open-close-stop) type control for each electric operator.
   1. Surface mounted.
   2. Locate at inside door jamb.

G. Provide safety reverse feature.

H. Provide loop detector and treadle.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.

B. Verify that electric power is available and of the correct characteristics.

3.02 PREPARATION

A. Prepare opening to permit correct installation of door unit to perimeter air and vapor barrier seal.

B. Apply primer to wood frame.

3.03 INSTALLATION

A. Install door unit assembly in accordance with manufacturer's instructions.

B. Anchor assembly to wall construction and building framing without distortion or stress.

C. Securely brace door tracks suspended from structure. Secure tracks to structural members only.

D. Fit and align door assembly including hardware.

E. Coordinate installation of electrical service. Complete power and control wiring from disconnect to unit components.

F. Coordinate installation of sealants and backing materials at frame perimeter as specified in Section 07 9005.

G. Install perimeter trim.

3.04 TOLERANCES

A. Maximum Variation from Plumb: 1/16 inch.

B. Maximum Variation from Level: 1/16 inch.

C. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch from 10 ft straight edge.

D. Maintain dimensional tolerances and alignment with adjacent work.

3.05 ADJUSTING

A. Adjust door assembly for smooth operation and full contact with weatherstripping.

B. Have manufacturer's field representative present to confirm proper operation and identify adjustments to door assembly for specified operation.

3.06 CLEANING

A. Clean doors and frames and glazing.

B. Remove temporary labels and visible markings.

3.07 PROTECTION

A. Protect installed products from damage until Date of Substantial Completion.

B. Do not permit construction traffic through overhead door openings after adjustment and cleaning.

END OF SECTION

SECTION 08 5113

ALUMINUM WINDOWS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Extruded aluminum windows with fixed sash.

1.02 RELATED REQUIREMENTS

A. Section 05 5000 - Metal Fabrications: Steel lintels.

B. Section 06 1000 - Rough Carpentry: Rough opening framing.

C. Section 07 2500 - Weather Barriers: Sealing frame to water-resistive barrier installed on adjacent construction.

D. Section 07 9200 - Joint Sealants: Sealing joints between window frames and adjacent construction.

E. Section 08 8000 - Glazing.

1.03 REFERENCE STANDARDS

A. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for windows, doors, and skylights; 2017.

B. AAMA CW-10 - Care and Handling of Architectural Aluminum From Shop to Site; 2015.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.

B. Shop Drawings: Indicate opening dimensions, elevations of different types, framed opening tolerances, anchorage locations, Color Samples, and installation requirements.

C. Grade Substantiation: Prior to submitting shop drawings or starting fabrication, submit one of the following showing compliance with specified grade:

1. Evidence of AAMA Certification.
2. Evidence of WDMA Certification.
3. Evidence of CSA Certification.
4. Test report(s) by independent testing agency itemizing compliance and acceptable to authorities having jurisdiction.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of experience.

B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Comply with requirements of AAMA CW-10.

B. Protect finished surfaces with wrapping paper or strippable coating during installation. Do not use adhesive papers or sprayed coatings that bond to substrate when exposed to sunlight or weather.

1.07 FIELD CONDITIONS

A. Do not install sealants when ambient temperature is less than 40 degrees F.

1.08 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Correct defective work within a five year period after Date of Substantial Completion.

C. Manufacturer Warranty: Provide 5-year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: Kawneer Trifab 451T.

2.02 BASIS OF DESIGN - AW PERFORMANCE CLASS WINDOWS

A. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 having Performance Class of AW, and Performance Grade at least as high as specified design pressure.

B. Fixed, Thermally-Broken:

2.03 WINDOWS

A. Aluminum Windows: Extruded aluminum frame and sash, factory fabricated, factory finished, with operating hardware, related flashings, and anchorage and attachment devices.
   1. Frame Depth: 4 inch.
   2. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors; fasteners and attachments concealed from view; reinforced as required for operating hardware and imposed loads.
   3. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
   4. Movement: Accommodate movement between window and perimeter framing and deflection of lintel, without damage to components or deterioration of seals.
   5. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.

B. Fixed, Non-Operable Type:
   1. Construction: Thermally broken.
   2. Glazing: Double; clear; transparent.
   3. Exterior Finish: Class I natural anodized.
   4. Interior Finish: Class I natural anodized.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that wall openings and adjoining water-resistive barrier materials are ready to receive aluminum windows; see Section 07 2500.

3.02 PRIME WINDOW INSTALLATION

A. Install windows in accordance with manufacturer's instructions.

B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.

C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.

D. Install sill and sill end angles.

E. Provide thermal isolation where components penetrate or disrupt building insulation. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.

F. Install glass and infill panels in accordance with requirements; see Section 08 8000.

3.03 TOLERANCES

A. Maximum Variation from Level or Plumb: 1/16 inches every 3 ft non-cumulative or 1/8 inches per 10 ft, whichever is less.

3.04 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements for independent field testing and inspection requirements, and requirements for monitoring quality of specified product installations.

3.05 ADJUSTING

A. Adjust hardware for smooth operation and secure weathertight closure.

3.06 CLEANING

A. Remove protective material from factory finished aluminum surfaces.

END OF SECTION

SECTION 08 7100

DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Hardware for hollow steel doors.

B. Lock cylinders for doors for which hardware is specified in other sections.

C. Thresholds.

D. Weatherstripping, seals and door gaskets.

1.02 RELATED REQUIREMENTS

A. Section 08 1113 - Hollow Metal Doors and Frames.

1.03 REFERENCE STANDARDS

A. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 2009.

B. BHMA A156.1 - American National Standard for Butts and Hinges; 2016.

C. BHMA A156.2 - American National Standard for Bored and Preassembled Locks & Latches; 2017.

D. BHMA A156.4 - American National Standard for Door Controls - Closers; 2013.

E. BHMA A156.6 - American National Standard for Architectural Door Trim; 2015.

F. BHMA A156.7 - American National Standard for Template Hinge Dimensions; 2016.

G. BHMA A156.8 - American National Standard for Door Controls - Overhead Stops and Holders; 2015.

H. BHMA A156.18 - American National Standard for Materials and Finishes; 2016.

I. BHMA A156.22 - American National Standard for Door Gasketing and Edge Seal Systems, Builders Hardware Manufacturers Association; 2017.

J. BHMA A156.31 - American National Standard for Electric Strikes and Frame Mounted Actuators; 2013.

K. DHI (LOCS) - Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames; 2004.

L. UL (DIR) - Online Certifications Directory; Current Edition.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the manufacture, fabrication, and installation of products onto which door hardware will be installed.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project.

C. Shop Drawings:

1. Indicate locations and mounting heights of each type of hardware, schedules, catalog cuts, .

D. Hardware Schedule: Detailed listing of each item of hardware to be installed on each door. Use door numbering scheme as included in the Contract Documents. Identify electrically operated items and include power requirements.

E. Keying Schedule: Submit for approval of Owner.

F. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.

G. Warranty: Submit manufacturer's warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

H. Maintenance Materials and Tools: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements, for additional provisions.
   2. Tools: One set of all special wrenches or tools applicable to each different or special hardware component, whether supplied by the hardware component manufacturer or not.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of _____ experience.

B. Hardware Supplier Qualifications: Company specializing in supplying commercial door hardware with 3 years of experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Package hardware items individually; label and identify each package with door opening code to match hardware schedule.

1.08 COORDINATION

A. Coordinate the work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware.

B. Furnish templates for door and frame preparation.

C. Coordinate PCI's keying requirements during the course of the Work.

1.09 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Provide five year warranty for door closers and Locksets.

1.10 MAINTENANCE PRODUCTS

A. Provide special wrenches and tools applicable to each different or special hardware component.

PART 2 PRODUCTS

2.01 SEE DRAWINGS FOR MANUFACTURES AND PRODUCTS.

2.02 DOOR HARDWARE - GENERAL

A. Provide all hardware specified or required to make doors fully functional, compliant with applicable codes, and secure to the extent indicated.

B. Provide all items of a single type of the same model by the same manufacturer.

C. Provide products that comply with the following:
   1. Applicable provisions of federal, state, and local codes.
   2. Products Requiring Electrical Connection: Listed and classified by UL as suitable for the purpose specified and indicated.

D. Function: Lock and latch function numbers and descriptions of manufactures series as listed in hardware schedule.

E. Finishes: Identified in schedule.

F. Finishes: All door hardware the same finish unless otherwise indicated.
   1. Primary Finish: Satin chrome plated over nickel on brass or bronze, 626 (approx US26D).
   2. Finish Definitions: BHMA A156.18.
   3. Exceptions:
      a. Where base metal is specified to be different, provide finish that is an appearance equivalent according to BHMA A156.18.

G. Fasteners:
   1. Concrete and Masonry Substrates: Stainless steel machine screws and lead expansion shields.

2.03 HINGES

A. Hinges: Provide hinges on every swinging door.
   1. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
   2. Provide ball-bearing hinges at all doors having closers.
   3. Provide hinges in the quantities indicated.
   4. Provide non-removable pins on exterior outswinging doors.
   5. Where electrified hardware is mounted in door leaf, provide power transfer hinges.

2.04 LOCKS AND LATCHES

A. Locks: Provide a lock for every door, unless specifically indicated as not requiring locking.
   1. Hardware Sets indicate locking functions required for each door.
   2. If no hardware set is indicated for a swinging door provide an office lockset.
   3. Trim: Provide lever handle or pull trim on outside of all locks unless specifically stated to have no outside trim.
   4. Lock Cylinders: Provide key access on outside of all locks unless specifically stated to have no locking or no outside trim.

B. Lock Cylinders: Manufacturer's standard tumbler type, six-pin standard core.
   1. Provide cams and/or tailpieces as required for locking devices required.

C. Keying: Grand master keyed.

D. Latches: Provide a latch for every door that is not required to lock, unless specifically indicated "push/pull" or "not required to latch".

2.05 CYLINDRICAL LOCKSETS

A. Locking Functions: As defined in BHMA A156.2, and as follows:

B. Manufacturers - Cylindrical Locksets: See door schedule on drawings.

2.06 CLOSERS

A. Closers: See door schedule on drawings.

B. Closers: Complying with BHMA A156.4.
   1. Provide surface-mounted, door-mounted closers unless otherwise indicated.
   2. Provide a door closer on every exterior door.
   3. Provide a door closer on every fire- and smoke-rated door. Spring hinges are not an acceptable self-closing device unless specifically so indicated.
   4. On pairs of swinging doors, if an overlapping astragal is present, provide coordinator to ensure the leaves close in proper order.
   5. At corridors, locate door-mounted closer on room side of door.
   6. At outswinging exterior doors, mount closer in inside of door.

C. Manufacturers - Closers:
   1. Assa Abloy Sargent: www.assaabloydss.com.

2.07 STOPS AND HOLDERS

A. Stops: Complying with BHMA A156.8; provide a stop for every swinging door, unless otherwise indicated.
   1. Provide wall stops, unless otherwise indicated.
   2. If wall stops are not practical, due to configuration of room or furnishings, provide overhead stop.

2.08 GASKETING AND THRESHOLDS

A. Gaskets: Complying with BHMA A156.22.
   1. On each door in smoke partition, provide smoke gaskets; top, sides, and meeting stile of pairs. If fire/smoke partitions are not indicated on drawings, provide smoke gaskets on each door identified as a "smoke door" and 20-minute rated fire doors.
   2. On each exterior door, provide weatherstripping gaskets, unless otherwise indicated; top, sides, and meeting stiles of pairs.

a. Where exterior door is also required to have fire or smoke rating, provide gaskets functioning as both smoke and weather seals.

3. On each exterior door, provide door bottom sweep, unless otherwise indicated.

B. Thresholds:
1. At each exterior door, provide a threshold unless otherwise indicated.
2. Field cut threshold to frame for tight fit.

C. Fasteners At Exterior Locations: Non-corroding.

2.09 KEY CONTROLS

A. Fire Department Lock Box: Heavy-duty, surface mounted, solid stainless-steel box with hinged door and interior gasket seal; single drill resistant lock with dust covers and tamper alarm.
1. Capacity: Holds 10 keys.
2. Finish: Manufacturer's standard dark bronze.
3. Products:
a. Knox Company; Knox-Box Rapid Entry System, Model 3200 series: www.knoxbox.com.
b. G.C. Coordinate with local fire department for location and keying.

2.10 GENERAL REQUIREMENTS FOR DOOR HARDWARE PRODUCTS

A. Provide products that comply with the following:
1. Applicable provisions of Federal, State, and local codes.
2. ANSI/ICC A117.1, American National Standard for Accessible and Usable Buildings and Facilities.
3. Applicable provisions of NFPA 101, Life Safety Code.

B. Finishes: Identified in drawings.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that doors and frames are ready to receive work; labeled, fire-rated doors and frames are present and properly installed, and dimensions are as indicated on shop drawings.

B. Verify that electric power is available to power operated devices and of the correct characteristics.

3.02 INSTALLATION

A. Install hardware in accordance with manufacturer's instructions and applicable codes.

B. Use templates provided by hardware item manufacturer.

C. Mounting heights for hardware from finished floor to center line of hardware item:
1. For steel doors and frames: Comply with DHI "Recommended Locations for Architectural Hardware for Steel Doors and Frames."

3.03 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under provisions of Section 01 4000.

3.04 ADJUSTING

A. Adjust work under provisions of Section 01 7000.

B. Adjust hardware for smooth operation.

3.05 PROTECTION

A. Protect finished Work under provisions of Section 01 7000.

B. Do not permit adjacent work to damage hardware or finish.

3.06 SCHEDULE - SEE DRAWINGS

END OF SECTION

SECTION 08 8000

GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Glass.

1. Gray Tinted Low E 1" insulating glass units.

B. Glazing compounds and accessories.

1.02 RELATED REQUIREMENTS

A. Section 07 2500 - Weather Barriers.

B. Section 07 9005 - Joint Sealers: Sealant and back-up material.

C. Section 08 1113 - Hollow Metal Doors and Frames: Glazed doors.

D. Section 08 3613 - Sectional Doors: Glazed lites in doors.

E. Section 08 5113 - Aluminum Windows: Glazed windows.

1.03 REFERENCE STANDARDS

A. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2015).

B. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

C. ASTM C1036 - Standard Specification for Flat Glass; 2016.

D. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2012.

E. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.

F. ASTM E 773 - Standard Test Method for Accelerated Weathering of Sealed Insulating Glass Units; 2001.

G. ASTM E 774 - Standard Specification for the Classification of the Durability of Sealed Insulating Glass Units; 1997.

H. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2010.

I. GANA (SM) - GANA Sealant Manual; 2008.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data on Glass Types: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.

C. Product Data on Glazing Compounds: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors.

D. Samples: Submit one samples 12x12 inch in size of glass units.

E. Certificates: Certify that products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with GANA Glazing Manual and GANA Sealant Manual for glazing installation methods.

B. Installer Qualifications: Company specializing in performing the work of this section with minimum 3 years experience.

1.06 FIELD CONDITIONS

A. Do not install glazing when ambient temperature is less than 50 degrees F.

B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.07 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Sealed Insulating Glass Units: Provide a five (5) year warranty to include coverage for seal failure, interpane dusting or misting, including replacement of failed units.

PART 2 PRODUCTS

2.01 GLAZING TYPES

A. Type IG-1 - Sealed Insulating Glass Units: Vision glazing.
   1. Application(s): All exterior glazing unless otherwise indicated.
      a. Outboard Lite: Fully tempered float glass, 1/4 inch thick, minimum. Where indicated at tempered areas.
         1) Tint: Gray.

         Outboard Lite: Annealed float glass, 1/4 inch thick, minimum. Where indicated at non-tempered areas.
         1) Tint: Gray.
      b. Inboard Lite: Fully tempered float glass, 1/4 inch thick, minimum. Where indicated at tempered areas.
         1) Tint: Clear.
      c. Inboard Lite: Annealed float glass, 1/4 inch thick, minimum. Where indicated at non-tempered areas.
         1) Tint: Clear
      d. Total Thickness: 1 inch.

2.02 GLAZING ASSEMBLIES

A. Structural Design Criteria: Select type and thickness to withstand dead loads and wind loads acting normal to plane of glass at design pressures calculated in accordance with 2015 IBC code.

B. Air and Vapor Seals: Provide completed assemblies that maintain continuity of building enclosure vapor retarder and air barrier:

2.03 GLASS MATERIALS

A. Float Glass Manufacturers:
   1. Old Castle Envelope.

B. Float Glass: All glazing is to be float glass unless otherwise indicated.
   1. Annealed Type: ASTM C1036, Type I, transparent flat, Class 1 clear, Quality Q3 (glazing select).
   2. Heat-Strengthened and Fully Tempered Types: ASTM C1048.
   3. Tinted Types: Color and performance characteristics as indicated.
   4. Thicknesses: As indicated; for exterior glazing comply with specified requirements for wind load design regardless of specified thickness.

2.04 SEALED INSULATING GLASS UNITS

A. Manufacturers:
   1. Guardian Industries Corporation: www.guardian.com.
   2. Interpane Glass Company: www.interpane.com.
   3. Oldcastle BuildingEnvelope. www.obe.com.
   4. PPG

5. Substitutions: Refer to Section 01 6000 - Product Requirements.

B. Sealed Insulating Glass Units: Types as indicated.
   1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
   2. Edge Spacers: Aluminum, bent and soldered corners.
   3. Edge Seal: Glass to elastomer with supplementary silicone sealant.
   4. Purge interpane space with dry hermetic air.

C. Type D-1; Exterior Insulated Glass Units : Double pane with glass to elastomer edge seal.
   1. Outer pane of Blue, tinted and tempered] glass, inner pane of [clear and tempered] glass.
   2. Durability: Certified by an independent testing agency to comply with ASTM E 2190.
   3. Comply with ASTM E 774 and E 773, Class CBA.
   4. Purge interpane space with dry hermetic air.
   5. Total unit thickness of 1 inch minimum.

2.05 GLAZING COMPOUNDS

A. Manufacturers:
   1. GE Plastics: www.geplastics.com.
   2. Pecora Corporation: www.pecora.com.
   3. Substitutions: Refer to Section 01 6000 - Product Requirements.

2.06 GLAZING ACCESSORIES

A. Setting Blocks: Neoprene, 80 to 90 Shore A durometer hardness, ASTM C864 Option I. Length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.

B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness, ASTM C 864 Option I. Minimum 3 inch long x one half the height of the glazing stop x thickness to suit application, self adhesive on one face.

C. Glazing Tape: Preformed butyl compound with integral resilient tube spacing device; 10 to 15 Shore A durometer hardness; coiled on release paper; black color.

D. Glazing Gaskets: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option I; TBD color.

E. Glazing Clips: Manufacturer's standard type.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that openings for glazing are correctly sized and within tolerance.

B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and ready to receive glazing.

3.02 PREPARATION

A. Clean contact surfaces with solvent and wipe dry.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces scheduled to receive sealant.

D. Install sealants in accordance with ASTM C1193 and GANA Sealant Manual.

E. Install sealant in accordance with manufacturer's instructions.

3.03 INSTALLATION - EXTERIOR/INTERIOR DRY METHOD (GASKET GLAZING)

A. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.

B. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.

C. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.04 CLEANING

A. Remove glazing materials from finish surfaces.

B. Remove labels after Work is complete.

C. Clean glass and adjacent surfaces.

3.05 PROTECTION

A. After installation, mark pane with an 'X' by using removable plastic tape or paste.

END OF SECTION

SECTION 09 5100

ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system.

B. Suspended metal grid ceiling system with reveal wall angles.

C. Acoustical units.

1.02 RELATED REQUIREMENTS

A. Section 07 2100 - Thermal Insulation: Acoustical insulation.

B. Section 21 1300 - Fire-Suppression Sprinkler Systems: Sprinkler heads in ceiling system.

C. Section 26 5100 - Interior Lighting: Light fixtures in ceiling system.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.

B. Do not install acoustical units until after interior wet work is dry.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Samples: Submit two samples 6" by 6" inch in size illustrating material and finish of acoustical units.

C. Samples: Submit two samples each, 12 inches long, of suspension system main runner.

1.05 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

B. Provide 5 percent of total acoustical unit area of each type of acoustical unit for Owner use in maintenance of project.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acoustic Tiles/Panels:
   1. Armstrong World Industries, Inc; .: www.armstrong.com.
   2. Substitutions: See Section 01 6000 - Product Requirements.

B. Suspension Systems:
   1. Armstrong World Industries, Inc; .: www.armstrong.com.
   2. Gordon's. www.gordon-inc.com.
   3. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ACOUSTICAL UNITS

A. Manufacturers:
   1. Armstrong World Industries, Inc: www.armstrong.com.
   2. USG: www.usg.com.
   3. Substitutions: See Section 01 6000 - Product Requirements.

B. Acoustical Tile Type LACP-1:
   1. Size: 24x24 inches
   2. Thickness: 5/8inches
   3. Products:
      a. Armstrong cirrus 573 Bevealed Tegular
      b. 9/16" Grid

C. Acoustical Tile Type LACP -1: Painted faced mineral fiber with the following characteristics:
   1. Size: 24 by 24 inches.
   2. Thickness: 5/8 inches.
   3. Composition: Water felted.
   4. Density: [1.09] lb/sq ft.
   5. Light Reflectance: LR 0.83 percent, determined in accordance with ASTM E1264.
   6. NRC Range: 0.60., determined in accordance with ASTM E1264.
   7. Edge: Beveled tegular.
   8. Surface Color: White.
   9. Suspension System: Concealed grid Type 15/16". Profile: WA-3-75 as manif. by Gordon's Inc. [Reveal edge at perimeter walls].
   10. Surface Burning Characteristics: Class A [under 25 flame spread]. UL Labeled.
   11. Products:
      a. Armstrong World Industries.
      b. Item # 572 - Cirrus Angled Tegular.

2.03 SUSPENSION SYSTEM(S)

A. Manufacturers:
   1. Armstrong World Industries, Inc: www.armstrong.com.
   2. Chicago Metallic Corporation: www.chicagometallic.com.
   3. Substitutions: See Section 01 6000 - Product Requirements.

B. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.

C. ExposedSteel Suspension System: Formed steel, commercial quality cold rolled; Intermediate-duty; heavy-duty.
   1. Profile: Tee; 15/16 inch wide face.
   2. Finish: White painted.
   3. Products:
      a. Reveal Edge Profile equal to WA-3-75 as manif. by Gordon's Inc. or, Armstrong 7823 at LACP-1.

2.04 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application and ceiling system flatness requirement specified.

B. Perimeter Moldings: Same material and finish as grid.
   1. At Exposed Grid: Provide L-shaped molding [and or reveal moulding where specified] for mounting at same elevation as face of grid.

C. Acoustical Sealant For Perimeter Moldings: Non-hardening, non-skinning, for use in conjunction with suspended ceiling system.

D. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that layout of hangers will not interfere with other work.

3.02 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C 636, ASTM E 580, and manufacturer's instructions and as supplemented in this section.

B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.

C. Locate system on room axis according to reflected plan.

D. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

E. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

F. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

G. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.

H. Do not eccentrically load system or induce rotation of runners.

I. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
   1. Use longest practical lengths.
   2. Overlap and rivet corners.

3.03 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Lay directional patterned units with pattern parallel to longest room axis.

D. Fit border trim neatly against abutting surfaces.

E. Install units after above-ceiling work is complete.

F. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

G. Cutting Acoustical Units:
   1. Cut to fit irregular grid and perimeter edge trim.
   2. Make field cut edges of same profile as factory edges.
   3. Double cut and field paint exposed reveal edges.

END OF SECTION

SECTION 09 6500

RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient tile flooring.

B. Resilient base.

C. Installation accessories.

1.02 RELATED REQUIREMENTS

A. Section 03 3000 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

C. Verification Samples: Submit two samples, 12 by 12 inch in size illustrating color and pattern for each resilient flooring product specified.

D. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.

B. Store all materials off of the floor in an acclimatized, weather-tight space.

C. Do not double stack pallets.

1.05 FIELD CONDITIONS

A. Maintain temperature in storage area between 55 degrees F and 90 degrees F.

B. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.01 TILE FLOORING

A. Vinyl Composition Tile: Homogeneous, with color extending throughout thickness.
   1. Manufacturers:
      a. Armstrong Flooring; Standard Execelon Imperial Texture: www.armstrongflooring.com/#sle.
      b. Armstrong World Industries, Inc; .: www.armstrong.com.
      c. Johnsonite, a Tarkett Company; .: www.johnsonite.com.
      d. Mannington Mills, Inc; .: www.mannington.com.
   2. Minimum Requirements: Comply with ASTM F1066, of Class corresponding to type specified.
   3. Size: 12 by 12 inch.
   4. Thickness: 0.125 inch.
   5. Pattern: Standard.
   6. Color: To be selected by Blakemore Architects from manufacturer's full range.

2.02 RESILIENT BASE

A. Resilient Base: ASTM F1861, Type TS rubber, vulcanized thermoset; top set Style B, Cove.
   1. Manufacturers:
      a. Johnsonite, a Tarkett Company; Rubber wall base (DC): www.johnsonite.com.

2. Height: 4 inch. (Provide 6" at areas indicated).
3. Thickness: 0.125 inch.
4. Finish: Satin.
5. Length: 4 foot sections.
6. Color: Color as selected from manufacturer's standards.
7. Accessories: Premolded external corners and internal corners.
8. Manufacturers:
    a. Johnsonite, Inc: www.johnsonite.com.

2.03 ACCESSORIES

A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.

B. Primers and Adhesives: Waterproof; types recommended by flooring manufacturer.

C. Adhesive for Vinyl Flooring:
1. Manufacturers:
    a. H.B. Fuller Construction Products, Inc; TEC Flexera Premium Universal Adhesive: www.tecspecialty.com/#sle.
    b. Loba-Wakol, LLC; WAKOL D 3120 PVC Adhesive: www.loba-wakol.com/#sle.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

B. Cementitious Sub-floor Surfaces: Verify that substrates are dry enough and ready for resilient flooring installation by testing for moisture and pH.
1. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

C. Verify that concrete sub-floor surfaces are dry enough and ready for resilient flooring installation by testing for moisture emission rate and alkalinity in accordance with ASTM F710; obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Remove sub-floor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.

B. Prohibit traffic until filler is fully cured.

C. Clean substrate.

3.03 INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of sub-floor conditions.

B. Install in accordance with manufacturer's written instructions.

C. Spread only enough adhesive to permit installation of materials before initial set.

D. Fit joints and butt seams tightly.

E. Set flooring in place, press with heavy roller to attain full adhesion.

F. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.

G. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.

H. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

3.04 INSTALLATION - TILE FLOORING

A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.

B. Lay flooring with joints and seams parallel to building lines to produce symmetrical pattern.

3.05 INSTALLATION - RESILIENT BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.

B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.

C. Install base on solid backing. Bond tightly to wall and floor surfaces.

D. Scribe and fit to door frames and other interruptions.

3.06 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean in accordance with manufacturer's written instructions.

3.07 PROTECTION

A. Prohibit traffic on resilient flooring for 48 hours after installation.

3.08 SCHEDULE

A. See finish schedule on drawings.

END OF SECTION

SECTION 09 9000

PAINTING AND COATING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish all interior and exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
   1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
   2. Exposed Concrete Masonry.
   3. Exposed surfaces of steel lintels and ledge angles.
   4. Roof structure, roof deck [dryfall], and all structural steel.
   5. Exposed steel columns, beams, floor deck, bracing & misc. steel, stairs & rails..
   6. Pipe bollards and guardrails.
   7. Mechanical and Electrical:
      a. In finished areas, paint all insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, and mechanical equipment, electrical equipment, and all gas piping, ductwork, sprinkler piping, unless otherwise indicated.
      b. Painter required to caulk all wall penetrations with DAP Dynaflex 230 Premium Elastic Sealant.

D. Do Not Paint or Finish the Following Items:
   1. Items fully factory-finished unless specifically so indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
   4. Floors, unless specifically so indicated.
   5. Glass.
   6. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

A. Section 32 1723.13 - Painted Pavement Markings: Painted pavement markings.

B. Section 05 5000 - Metal Fabrications: Shop-primed items.

1.03 DEFINITIONS

A. Conform to ASTM D 16 for interpretation of terms used in this section.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide complete list of all products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
   2. MPI product number (e.g. MPI #47).
   3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.

D. Product Data: Provide data on all finishing products, including VOC content.

E. Samples: Submit two painted samples, illustrating selected colors and textures for each color and system selected with specified coats cascaded. Submit on tempered hardboard, 12 x 12 inch in size.

F. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

1.05 QUALITY ASSURANCE

A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

D. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.

B. Paints:

C. Primer Sealers: Same manufacturer as top coats.

D. Block Fillers: Same manufacturer as top coats.

E. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PAINTS AND COATINGS - GENERAL

A. Paints and Coatings: Ready mixed, unless intended to be a field-catalyzed coating.
   1. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   2. Supply each coating material in quantity required to complete entire project's work from a single production run.
   3. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.

B. Primers: As follows unless other primer is required or recommended by manufacturer of top coats; where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.

C. Volatile Organic Compound (VOC) Content:

1. Provide coatings that comply with the most stringent requirements specified in the following:
   a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

2.03 PAINT SYSTEMS - EXTERIOR

A. Paint ME-OP-3A - Ferrous Metals, Unprimed, Alkyd, 2 Coat:
   1. Semi-gloss: Two coats of alkyd enamel; Benjamin Moore, self priming alkyd semigloss M24.

B. Paint ME-OP-2A - Ferrous Metals, Primed, Alkyd, 2 Coat:
   1. Touch-up with rust-inhibitive primer recommended by top coat manufacturer.
   2. Semi-gloss: Sherwin Williams: Spot Prime: B66W00310-Pro Industrial Pro-Cryl Universal Acrylic Primer Off White plus (2) coats: B42W00111 - Metalatex Semi-Gloss Acrylic Coating.

C. Paint MgE-OP-3A - Galvanized Metals, Acrylic, 2 Coat:
   1. One coat galvanize primer.
   2. Semi-gloss: Two coats of alkyd enamel; Benjamin Moore, self priming alkyd semigloss M29.
   3. Apply at; 50 deg F. min. & 85% humidity max. and 100 deg F. max

D. Paint E-Pav - Pavement Marking Paint:
   1. White / Yellow: One coat, Glidden, Laytex Traffic Paint.

2.04 PAINT SYSTEMS - INTERIOR

A. Paint I-OP-DF - Dry Fall: Metals; exposed structure and overhead-mounted services in utilitarian spaces, including shop primed steel deck, structural steel, metal fabrications, galvanized ducts, galvanized conduit, and galvanized piping.
   1. Spot Prime: B66W00310- Pro Industrial Pro-Cryl Universal Acrylic Primer Off White.
   2. One top coat; white. B42W00002 - Waterborn Acrylic Dry Fall Eg-Shell White.
   3. Top Coat: Latex Dry Fall; MPI #118, 155, 226.
   4. Eggshell: MPI gloss level 3; use this sheen at all locations. [This work shall be scheduled after normal trades shift is over for each day].

B. Paint CI-OP-3L - Concrete/Masonry, Opaque, Latex, 3 Coat:
   1. Primer B25W00025 - Prep Rite Interior/Exterior Latex Block Filler White.
   2. (2) Coats B20W02651 - Promar 200 Zero VOC Interior Latex Eg-Shel.

C. Paint MgI-OP-3A - Galvanized Metals, Alkyd, 2 Coat:
   1. One coat galvanize primer.
   2. Semi-gloss: Two coats of acrylic enamel; Benjamin Moore M29 direct to metal acrylic semi gloss.

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required to achieve the finishes specified whether specifically indicated or not; commercial quality.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

C. Test shop-applied primer for compatibility with subsequent cover materials.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to coating application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

D. Surfaces: Correct defects and clean surfaces which affect work of this section.

E. Seal surfaces that might cause bleed through or staining of topcoat.

F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

G. Asphalt, Creosote, or Bituminous Surfaces to be Painted: Remove foreign particles to permit adhesion of finishing materials. Apply latex based sealer or primer.

H. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

I. Uncorroded Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs.

J. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

3.03 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

B. Apply products in accordance with manufacturer's instructions.

C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

D. Apply each coat to uniform appearance.

E. Sand wood and metal surfaces lightly between coats to achieve required finish.

F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

A. Paint exterior electrical panels to match adjacent masonry main field color (not accent stripes).

B. Paint exterior Gas Piping to match adjacent masonry main field color (not accent stripes) .

3.05 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.06 SCHEDULE - SURFACES TO BE FINISHED

A. Do Not Paint or Finish the Following Items:
   1. Items fully factory-finished unless specifically noted.

2. Fire rating labels, equipment serial number and capacity labels.

B. Paint the surfaces described in PART 1 and in PART 2, Paint Systems Articles.

C. Mechanical and Electrical: Use paint systems defined for the substrates to be finished.
   1. Paint shop-primed items occurring in finished areas scheduled to be painted.

END OF SECTION

SECTION 10 2800

TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Commercial toilet accessories.

B. Utility room accessories.

1.02 RELATED REQUIREMENTS

A. Section 06100: Concealed supports for accessories, including in wall framing and plates and above ceiling framing.

1.03 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2017.

B. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.

C. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Products listed are made by Bradley.

B. Toilet Accessories:
   1. American Specialties, Inc; .: www.americanspecialties.com.
   2. Bobrick Washroom Equipment, Inc.
   3. Bradley Corporation; .: www.bradleycorp.com.

C. Provide products of each category type by single manufacturer.

2.02 MATERIALS

A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
   1. Grind welded joints smooth.
   2. Fabricate units made of metal sheet of seamless sheets, with flat surfaces.

B. Keys: Provide two keys for each accessory to Owner.

C. Stainless Steel Sheet: ASTM A666, Type 304.

D. Galvanized Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M, with G90/Z275 coating.

E. Fasteners, Screws, and Bolts: Hot dip galvanized; tamper-proof; security type.

F. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.03 FINISHES

A. Stainless Steel: Satin finish, unless otherwise noted.

2.04 COMMERCIAL TOILET ACCESSORIES

A. See Schedule on Drawings for specified items.

2.05 UTILITY ROOM ACCESSORIES

A. Combination Utility Shelf/Mop and Broom Holder: 0.05 inch thick stainless steel, Type 304, with 1/2 inch returned edges, 0.06 inch steel wall brackets.
   1. Hooks: Two, 0.06 inch stainless steel rag hooks at shelf front.
   2. Mop/broom holders: Three spring-loaded rubber cam holders at shelf front.
   3. Product: B-239x34 manufactured by Bobrick.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify exact location of accessories for installation.

3.02 PREPARATION

A. Deliver inserts and rough-in frames to site for timely installation.

B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

A. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.

3.04 SCHEDULE

A. See Schedule on Drawings for items in addition to these specified items.

END OF SECTION

SECTION 10 4400
FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fire extinguishers.

B. Accessories.

1.02 REFERENCE STANDARDS

A. NFPA 10 - Standard for Portable Fire Extinguishers; 2017.

B. UL (DIR) - Online Certifications Directory; Current Edition.

1.03 PERFORMANCE REQUIREMENTS

A. Conform to NFPA 10.

B. Provide extinguishers classified and labeled by Underwriters Laboratories Inc. for the purpose specified and indicated.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate locations of cabinets and cabinet physical dimensions.

C. Product Data: Provide extinguisher operational features.

D. Manufacturer's Installation Instructions: Indicate special criteria and wall opening coordination requirements.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Maintenance Data: Include test, refill or recharge schedules and re-certification requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Fire Extinguishers:

1. Activar Construction Products Group, Inc. - JL Industries; Cosmic Extinguisher - Multipurpose Chemical: www.activarcpg.com/#sle.
2. Ansul, a Tyco Business; Multi-purpose Dry Chemical: www.ansul.com/#sle.
3. Kidde, a unit of United Technologies Corp; Multi-purpose Dry Chemical: www.kidde.com/#sle.
4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 FIRE EXTINGUISHERS

A. Fire Extinguishers - General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.

B. Multi Purpose - Dry Chemical Type: Standard tank, with pressure gage, 10 pound.

2.03 ACCESSORIES

A. Extinguisher Brackets: Formed steel, chrome-plated.

B. Cabinet Signage: as required by BOCA/NFPA code.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Secure rigidly in place.

C. Place extinguishers in cabinets.

3.02 SCHEDULES

A. Surface Mounted Units: Dry Chemical 10 pound, ABC extinguisher placed surface mounted at each location indicated on CODE and Floor plan.

END OF SECTION

SECTION 31 1000

SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Removing above- and below-grade site improvements.
6. Disconnecting, capping, or sealing site utilities.
7. Temporary erosion and sedimentation control.

1.2 MATERIAL OWNERSHIP

A. Except for materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.3 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed trafficways if required by Owner or authorities having jurisdiction.

B. Salvageable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises.

C. Utility Locator Service: Notify JULIE for area where Project is located before site clearing.

D. Do not commence site clearing operations until temporary erosion control measures are in place according to the Erosion Control Plan.

E. Tree Protection Zones: Protect area surrounding individual trees indicated to remain on the Plans. Tree protection zones to be surrounded with high visibility construction fence or chain link fence a minimum of 48” in height.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Suitable Soil Material: Requirements for suitable soil material are specified in Section 312000 "Earth Moving."

1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

B. Unsuitable Soil Material: Requirements for unsuitable soil material are specified in Section 312000 "Earth Moving."

1. Unsuitable soils shall be removed from the project site.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed according to requirements indicated in PART 1.3.E.

C. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION CONTROL

A. Provide temporary erosion control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to the Erosion Control Plan, Illinois Urban Manual (Current Edition), and the NPDES Permit conditions.

B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

C. Inspect, maintain, and repair erosion control measures during construction until permanent vegetation has been established.

D. Remove erosion controls and restore and stabilize areas disturbed during removal.

3.3 TREE AND PLANT PROTECTION

A. Protect trees and plants remaining on-site according to requirements indicated in PART 1.3.E.

3.4 EXISTING UTILITIES

A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.

1. Arrange with utility companies to shut off indicated utilities.

B. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others, unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Owner not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Owner's written permission.

C. Removal of underground utilities is included in earthwork sections and in applicable fire suppression, plumbing, HVAC, electrical, communications, electronic safety and security, and utilities sections.

3.5 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.

1. Grind down stumps and remove roots larger than 3 inches in diameter, obstructions, and debris to a depth of 18 inches below proposed subgrade.
2. Use only hand methods for grubbing within protection zones.

B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches and compact each layer to a density equal to adjacent original ground.

3.6 TOPSOIL STRIPPING

A. Remove sod and grass before stripping topsoil.

B. Strip topsoil to depths indicated on the plans in a manner to prevent intermingling with underlying subsoil or other waste materials. Assumed topsoil depths can be obtained from the *Geotechnical Engineering Report* included within these documents.

C. Stockpile topsoil away from edge of excavations without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

3.7 SITE IMPROVEMENTS

A. Remove existing improvements as indicated and necessary to facilitate new construction.

3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property in accordance with Article 202.03 of the *Illinois Department of Transportation (IDOT) Standard Specifications*.

B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION 31 1000

SECTION 31 2000

EARTH MOVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavating and filling for rough grading the Site.
2. Preparing subgrades for pavements, sidewalks, curbs, and landscaped areas.
3. Excavating and backfilling for buildings and structures.
4. Aggregate Base Course for Portland Cement Concrete (PCC) pavements and Hot-Mix Asphalt (HMA) pavements.
5. Excavating and backfilling trenches for buried utilities.

1.2 DEFINITIONS

A. Backfill: Soil material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Aggregate Base Course: Aggregate layer placed between the subbase course and PCC or HMA pavements.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Suitable soil imported from off-site for use as fill or backfill.

E. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations, beyond indicated lines and dimensions, and/or excavation of Unsuitable Materials as directed by the Owner. Authorized additional excavation and replacement material will be paid for according to Contract provisions.
2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Owner. Unauthorized excavation, as well as remedial work directed by Owner, shall be without additional compensation.

F. Fill: Soil materials used to raise existing grades.

G. IDOT Standard Specifications: Illinois Department of Transportation Standard Specifications for Road and Bridge Construction (Adopted January 1, 2022).

H. Structures: Buildings, footings, foundations, slabs, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

I. Subbase Course: Aggregate layer placed between the subgrade and aggregate base course for PCC and HMA pavement.

J. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, aggregate base course or topsoil materials.

K. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.3 SUBMITTALS

A. Material test reports.

1.4 FIELD CONDITIONS

A. Utility Locator Service: Notify JULIE for area where Project is located before beginning earth-moving operations.

B. Do not commence earth-moving operations until tree protection measures specified in Section 311000 "Site Clearing" are in place.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient suitable soil materials are not available from excavations.

B. Suitable Soils: All onsite materials meeting the criteria defined as suitable in Article 1009.04 of the *IDOT Standard Specifications*. Soils may be designated as suitable through visual inspection; at the discretion of the Owner, verification of designation may be confirmed through testing or other means.

C. Unsuitable Soils: All onsite materials that do not meet the criteria defined as suitable in Article 1009.04 of the *IDOT Standard Specifications*, including but not limited to topsoil, peat, organic soils, soils containing trash and debris, waste materials, underground concrete foundations, septic systems, and other demolished materials.

1. Unsuitable soils to be removed from the site and replaced with suitable soil or Select Engineered Fill or Granular Fill materials.

D. Subbase Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, crushed concrete, and natural or crushed sand with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

E. Aggregate Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, or crushed concrete in accordance with Article 1004 of the *IDOT Standard*

Specifications. Aggregate base course shall be IDOT gradation CA-6 or CA-2; if gradation CA-2 is utilized, the aggregate base course layer shall be capped with a minimum 3-inch thick layer of gradation CA-6

F. Select Engineered Fill or Granular Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, crushed concrete, and natural or crushed sand in accordance with Article 1003 and Article 1004 of the *IDOT Standard Specifications* with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel or crushed stone conforming to ASTM C12 Class B. Bedding Course shall be IDOT gradation CA-7 in accordance with Article 1004 of the *IDOT Standard Specifications*. Should the trench bottom soils below the bedding course be deemed unsuitable, the unsuitable soils shall be removed and replaced with IDOT Gradation CA-1 prior to installation of the bedding course.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.

B. Protect and maintain erosion and sedimentation controls during earth-moving operations.

C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 EXCAVATION, GENERAL

A. Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Time will be authorized for rock excavation or removal of obstructions.

1. If excavated materials intended for fill and backfill include unsuitable soil materials and rock, replace with suitable soil materials.

3.3 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

B. Excavations at Edges of Tree- and Plant-Protection Zones:

1. Excavate by hand or with an air spade to indicated lines, cross sections, elevations, and subgrades. If excavating by hand, use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.

3.4 EXCAVATION FOR SIDEWALKS, CURBS, AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.5 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

B. Excavate trenches to uniform widths to allow for proper pipe bedding and backfill operations.

C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

D. Trenches in Tree- and Plant-Protection Zones:

1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.

3.6 SUBGRADE INSPECTION

A. Proof-roll subgrade below building slabs and pavements with a pneumatic-tired dump truck to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

B. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Owner.

3.7 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.8 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Trenches under Pavements, Curbs, and Sidewalks: Trenches under and within 2' of proposed pavements, curbs, and sidewalks are to be backfilled with trench backfill materials in accordance with Section 208 of the *IDOT Standard Specifications*.

D. Initial Backfill: Place and compact initial backfill to a height of 12 inches over the pipe.

1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

E. Final Backfill: Place and compact final backfill of suitable soils or trench backfill materials to final subgrade elevation.

3.9 SOIL FILL

A. Fill material shall be installed according to Section 205 of the *IDOT Standard Specifications*. Only suitable soils or engineered fill shall be used for fill materials.

1. Existing ground surface shall be prepared according to Article 205.03 of the *IDOT Standard Specifications* prior to placement of any fill materials.

3.10 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry, otherwise suitable soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.11 COMPACTION OF SOIL BACKFILLS AND FILLS

A. All materials to be placed in accordance with Article 205.04 of the *IDOT Standard Specifications*.

B. Place backfill and fill soil materials in layers not more than 8 inches in loose depth.

C. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.

D. Compact soil materials to not less than the following percentages of the Standard Proctor laboratory density:

1. Under building foundations and floor areas: 95% of the Standard Proctor density.
2. Under pavements, curbs, and sidewalks: 95% of the Standard Proctor density.
3. Under turf or landscape areas: 90% of the Standard Proctor density.

3.12 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations.

C. Grading inside Building Lines: Finish subgrade to elevations required to achieve indicated finish elevations.

3.13 SUBBASE AND AGGREGATE BASE COURSES UNDER PAVEMENTS, CURBS, AND SIDEWALKS

A. All work to be in accordance with Section 351 of the *IDOT Standard Specifications.*

B. Place subbase course and aggregate base course on subgrades free of mud, frost, snow, or ice.

C. On prepared subgrade, place subbase course and aggregate base course under pavements, curbs, and sidewalks as follows:

1. Shape subbase course and aggregate base course to required crown elevations and cross-slope grades.
2. Place subbase course and aggregate base course in layers no more than 6 inches thick (compacted thickness).
3. Compact subbase course and aggregate base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 100% percent of the Standard Proctor laboratory density.

3.14 FIELD QUALITY CONTROL

A. Testing Agency: All Quality Control testing shall be the sole responsibility of the Contractor.

B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.

D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.15 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

3.16 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus suitable soil and waste materials, including unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 31 2000

SECTION 31 2316

EXCAVATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Excavating for footings and slabs-on-grade.

B. Trenching for utilities outside the building to utility main connections.

C. Contractor shall arrange for relocation and removal of designated utility lines.

D. Contractor shall arrange for Surveyor to lay out the building.

1.02 RELATED REQUIREMENTS

A. Document 00 31 13: Geotechnical report; bore hole locations and findings of subsurface materials.

B. Section 01 70 00 - Execution and Closeout Requirements: General requirements for dewatering of excavations and water control.

C. Section 31 23 23 - Fill and Backfill: Fill materials, filling, and compacting.

1.03 PROJECT CONDITIONS

A. Verify that survey bench mark and intended elevations for the Work are as indicated.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PREPARATION

A. Identify required lines, levels, contours, and datum locations.

B. Protect utilities that remain and protect from damage.

3.02 EXCAVATING

A. Excavate to accommodate new structures and construction operations.

B. Notify Architect of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.

C. Slope banks of excavations deeper than 4 feet to angle of repose or less until shored.

D. Do not interfere with 45 degree bearing splay of foundations.

E. Cut utility trenches wide enough to allow inspection of installed utilities.

F. Hand trim excavations. Remove loose matter.

G. Remove lumped subsoil, boulders, and rock up to 1/3 cu yd measured by volume.

H. Correct areas that are over-excavated and load-bearing surfaces that are disturbed; see Section 31 23 23.

I. Grade top perimeter of excavation to prevent surface water from draining into excavation.

J. Remove excavated material that is unsuitable for re-use from site.

K. Remove excess excavated material from site.

3.03 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for general requirements for field inspection and testing.

B. Provide for visual inspection of load-bearing excavated surfaces before placement of foundations.

3.04 PROTECTION

A. Prevent displacement of banks and keep loose soil from falling into excavation; maintain soil stability.

B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.

END OF SECTION

SECTION 31 2323

FILL AND BACKFILL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Filling, backfilling, and compacting for building volume below grade, footings, slabs-on-grade, and paving.

B. Backfilling and compacting for utilities outside the building to utility main connections.

1.02 RELATED REQUIREMENTS

A. Document 00 31 13: Geotechnical report; bore hole locations and findings of subsurface materials.

B. Section 01 40 00 - Quality Control: Testing required by this Section to be by Contractor.

1.03 REFERENCE STANDARDS

A. ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)); 2012.

1.04 DELIVERY, STORAGE, AND HANDLING

A. When necessary, store materials on site in advance of need.

PART 2 PRODUCTS

2.01 FILL MATERIALS

A. General Fill - Type A: Crushed stone, crushed gravel or crushed concrete; washed, free of clay, shale, organic matter.

SIEVE SIZE	PERCENT PASSING
6 INCH (150 MM)	100
3 INCH (75 MM)	85 TO 100
1-1/2 INCH (37.5 MM)	50 TO 85
3/4 INCH (19 MM)	30 TO 80
NO. 4 (4.75MM)	25 TO 40
NO. 40 (425 UM)	5 TO 20
NO. 100 (150 UM)	2 TO 5
NO. 200 (75 UM)	2

A. Structural Fill - Type B: Crushed stone, crushed gravel or crushed concrete; washed, free of clay, shale, organic matter (I DOT).

SIEVE SIZEPERCENT PASSING	
3 INCH (75 MM)	90 TO 100
1-1/2 INCH (37.5 MM)	60 TO 85
3/4 INCH (19 MM)	40 TO 65
NO. 4 (4.75MM)	15 TO 40
NO. 10 (2 MM)	10 TO 30
NO. 40 (425 UM)	5 TO 20
NO. 200 (75 UM)	2 TO 12

A. Coarse Pavement Fill - Type C: Crushed stone, crushed gravel or crushed concrete; washed, free of clay, shale, organic matter (I DOT).

SIEVE SIZE	PERCENT PASSING
1-1/4 INCH (31.5 MM)	95 TO 100
3/4 INCH (19 MM)	70 TO 93
3/8 INCH (9.5 MM)	42 TO 80
NO. 4 (4.75MM)	25 TO 63
NO. 10 (2 MM)	16 TO 48
NO. 40 (425 UM)	8 TO 28
NO. 200 (75 UM)	2 TO 12*
	*4 TO 10 IF >= CRUSHED GRAVEL

A. Fine Pavement Fill - Type D: Crushed stone, crushed gravel or crushed concrete; washed, free of clay, shale, organic matter (WI DOT 310.).

SIEVE SIZE	PERCENT PASSING
1 INCH (25 MM)	90 TO 100
3/8 INCH (9.5 MM)	45 TO 65
NO. 4 (4.75MM)	15 TO 45
NO. 10 (2 MM)	0 TO 20
NO. 40 (425 UM)	0 TO 10
NO. 200 (75 UM)	0 TO 5

A. Drainage Fill - Type E: Crushed stone, crushed gravel or crushed concrete; washed, free of clay, shale, organic matter (I DOT).

SIEVE SIZEPERCENT PASSING	
1 INCH (25 MM)	100
3/4 INCH (19 MM)	95 TO 100
3/8 INCH (9.5 MM)	50 TO 90
NO. 4 (4.75MM)	35 TO 70
NO. 10 (2 MM)	15 TO 55
NO. 40 (425 UM)	10 TO 35
NO. 200 (75 UM)	5 TO 15*
	*8 TO 15 IF >= CRUSHED GRAVEL

A. Pipe Bedding Fill - Type F: Washed gravel conforming with the following:

SIEVE SIZEPERCENT PASSING	
3/4 INCH (19 MM)	80 TO 100
3/8 INCH (9.5 MM)	30 TO 90
NO. 4 (4.75MM)	20 TO 30
NO. 10 (2 MM)	10 TO 20
NO. 40 (425 UM)	8 TO 10

A. General Fill - Fill Type G: Subsoil excavated on-site.
   1. Site-graded, free of lumps larger than 3 inches, rocks larger than 6 inches, organic material, and debris.
   2. Comply with ASTM D2487 Classification SW, SP, or SM

B. Sand - Fill - Type H: ASTM C136, Natural river or bank sand; washed; free of silt, clay, loam, friable or soluble materials, and organic matter.

SIEVE SIZE	**PERCENT PASSING**
NO. 4 (4.75MM)	**100**
NO. 14 (1.4 MM)	**10 TO 100**
NO. 50 (300 UM)	**5 TO 90**
NO. 100 (150 UM)	**4 TO 30**
NO. 200 (75 UM)	**0**

2.02 ACCESSORIES

A. Geotextile Fabric: Non-biodegradable, woven, ; Geotex 200ST manufactured by Propex Geosynthetics, Inc., or approved equal.

B. Stabilization Fabric: Type SAS (Subgrade Aggregate Separation), Subsection 645.2.2 of the Illinois DOT State Specifications, meeting the following criteria:
   1. Test Minimum Requirements
   2. Grab Tensile Strength, ASTM D4632:170 lbs
   3. Puncture Strength, ASTM D4833:70 lbs
   4. Minimum Permittivity, ASTM D4491:0.35 1/s
   5. Apparent Opening Size, ASTM D4751:No. 70 (212 um)
   6. Acceptable Manufacturer and Product:
      a. TenCate Mirafi; Filterweave 700
      b. Propex Fibers Co.; No. 2019
      c. Niles Inc.; NW70
      d. Substitutions: Permitted under Section 01600.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that survey bench marks and intended elevations for the Work are as indicated.

B. Identify required lines, levels, contours, and datum locations.

C. See Section 31 22 00 for additional requirements.

D. Verify subdrainage, dampproofing, or waterproofing installation has been inspected.

3.02 PREPARATION

A. Scarify and proof roll subgrade surface to a depth of 6 inches to identify soft spots.

B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.

C. Compact subgrade to density equal to or greater than requirements for subsequent fill material.

D. Until ready to fill, maintain excavations and prevent loose soil from falling into excavation.

3.03 FILLING

A. Fill to contours and elevations indicated using unfrozen materials.

B. Fill up to subgrade elevations unless otherwise indicated.

C. Employ a placement method that does not disturb or damage other work.

D. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.

E. Maintain optimum moisture content of fill materials to attain required compaction density.

F. Granular Fill: Place and compact materials in equal continuous layers not exceeding 8 inches compacted depth.

G. Soil Fill: Place and compact material in equal continuous layers not exceeding 8 inches compacted depth.

H. Slope grade away from building minimum 2 inches in 10 feet, unless noted otherwise. Make gradual grade changes. Blend slope into level areas.

I. Correct areas that are over-excavated.
   1. Load-bearing foundation surfaces: Use structural fill Type A or Concrete for Fill, flush to required elevation, compacted to 100 percent of maximum dry density.
   2. Other areas: Use general fill Type G, flush to required elevation, compacted to minimum 95 percent of maximum dry density.

J. Compaction Density Unless Otherwise Specified or Indicated:
   1. Under slabs-on-grade and similar construction: 95 percent of maximum dry density.
   2. At other locations: 90 percent of maximum dry density.

K. Reshape and re-compact fills subjected to vehicular traffic.

3.04 FILL AT SPECIFIC LOCATIONS

A. Place fill types at the following locations unless otherwise noted.

B. Structural Fill under footings :
   1. Use Fill Type B - Structural Fill.
   2. Maximum depth per lift: 8 inches, compacted.
   3. Compact to minimum 95 percent of maximum dry density.
   4. Lean Mix Concrete provided under Section 03 30 00 if approved.

C. Pervious Structural Fill from above drainage fill and filter fabric to 6 inches from finish grade:
   1. Use Fill Type E.
   2. Maximum depth per lift: 6 inches, compacted.
   3. Compact to minimum 95 percent of maximum dry density.

D. Under Interior Slabs-On-Grade:
   1. Use Fill Type D.
   2. Depth: 6 inches deep.
   3. Compact to 95 percent of maximum dry density.

E. At Foundation Walls and Footings:
   1. Use Fill Type E.
   2. Fill up to subgrade elevation.
   3. Maximum depth per lift: 12 inches, compacted.
   4. Compact each lift to 95 percent of maximum dry density.
   5. Do not backfill against unsupported foundation walls.
   6. Backfill simultaneously on each side of unsupported foundation walls until supports are in place.

F. Over Subdrainage Piping at Foundation Perimeter:
   1. Cover drainage fill with Fill Type E.
   2. Minimum Top and Bottom Coverage: 2 inches
   3. Fill up to 24 inches minimum of underside of slab.
   4. Compact to 95 percent of maximum dry density.

G. Over Buried Utility Piping, Conduits, and Duct Bank in Trenches and D:
   1. Bedding: Use Fill Type F.
   2. Cover with G.
   3. Fill up to subgrade elevation.

4. Compact in maximum 8 inch lifts to 95 percent of maximum dry density.

H. Inside Planter Boxes:
   1. Use granular fill, 4 inches deep.
   2. Cover with geotextile fabric.
   3. Cover with sand, 2 inches deep.
   4. Finish with topsoil, to within 2 inches of planter rim, lightly tamped.

I. At Lawn Areas:
   1. Use Type G.
   2. Fill up to 6 inches below finish grade elevations.
   3. Compact to 90 percent of maximum dry density.
   4. See Section 31 22 00 for topsoil placement.

J. At Planting Areas Other Than Lawns :
   1. Use Fill Type G.
   2. Fill up to 12 inches below finish grade elevations.
   3. Compact to 90 percent of maximum dry density.
   4. See Section 31 22 00 for topsoil placement.

3.05 TOLERANCES

A. Top Surface of General Filling: Plus or minus 1 inch from required elevations.

B. Top Surface of Filling Under Paved Areas: Plus or minus 1 inch from required elevations.

3.06 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for general requirements for field inspection and testing.

B. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D698 ("standard Proctor").

C. If tests indicate work does not meet specified requirements, remove work, replace and retest.

D. Frequency of Tests: At each lift and for each 500 cubic yards of material, unless otherwise indicated.

E. Proof roll compacted fill at surfaces that will be under slabs-on-grade.

3.07 CLEANING

A. See Section 01 74 19 - Construction Waste Management and Disposal, for additional requirements.

B. Leave unused materials in a neat, compact stockpile.

C. Leave borrow areas in a clean and neat condition. Grade to prevent standing surface water.

END OF SECTION

SECTION 32 1216

ASPHALT PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Hot-mix asphalt paving.

B. Related Requirements:
1. Section 312000 "Earth Moving" for subgrade preparation, fill material, and aggregate subbase and base courses.
2. Section 321313 "Concrete Paving" for concrete pavement and for separate concrete curbs, gutters, and sidewalks.

1.2 SUBMITTALS

A. Hot-Mix Asphalt (HMA) mix designs.

B. HMA Paving Quality Control Plan in accordance with Article 1030.06 of the *IDOT Standard Specifications*.

C. Material Certificates:

1. Aggregates.
2. Asphalt binder.
3. Tack coat.

1.3 QUALITY ASSURANCE

A. Comply with materials, workmanship, and other applicable requirements of Section 406 of the *IDOT Standard Specifications*.

PART 2 - PRODUCTS

2.1 AGGREGATES

A. Coarse Aggregate: In accordance with Article 1004.03 of the *IDOT Standard Specifications.*

B. Fine Aggregate: In accordance with Article 1003.03 of the *IDOT Standard Specifications.*

C. Mineral Filler: In accordance with Article 1011 of the *IDOT Standard Specifications.*

2.2 ASPHALT MATERIALS

A. Asphalt Binder: PG 64-22 asphalt binder in accordance with Article 1032 of the *IDOT Standard Specifications*.

B. Tack Coat: SS-1 in accordance with Article 1032 of the *IDOT Standard Specifications*.

2.3 MIXES

A. Hot-Mix Asphalt: In accordance with Article 1030 of the *IDOT Standard Specifications* and complying with the following requirements:

1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.
2. Binder Course: IL-19.0, N50
3. Surface Course: IL-9.5, N50, Mix 'D'

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

A. Ensure that prepared subgrade is ready to receive paving. Immediately before placing hot-mix asphalt, remove loose and deleterious material from substrate surfaces.

B. Tack Coat: Applied in accordance with Article 406.05 of the *IDOT Standard Specifications*.

1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.2 HOT-MIX ASPHALT PLACEMENT

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted. All placement to be in accordance with Section 406 of the *IDOT Standard Specifications*.

1. Place hot-mix asphalt binder course and surface course to thicknesses indicated. Minimum lift thicknesses in accordance with Article 406.06 of the *IDOT Standard Specifications*.
2. Place hot-mix asphalt surface course in single lift.
3. Spread mix at a minimum temperature of 250 deg F.
4. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

B. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.3 JOINTS

A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course. All joints to be in accordance with Article 406.06 of the *IDOT Standard Specifications*.

1. Clean contact surfaces and apply tack coat to joints.
2. Offset longitudinal joints, in successive courses, a minimum of 6 inches.
3. Offset transverse joints, in successive courses, a minimum of 24 inches.

3.4 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.

1. Compaction to be in compliance with Article 406.07 of the *IDOT Standard Specifications*.

B. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

C. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.5 FIELD QUALITY CONTROL

A. All Quality Control is to be the responsibility of the Contractor and shall be in accordance with QC/QA method in Article 1030.09 of the *IDOT Standard Specifications.*

END OF SECTION 321216

SECTION 32 1313

CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Roadways.
2. Parking lots.
3. Curbs and gutters.
4. Sidewalks.

B. Related Requirements:
1. Section 312000 "Earth Moving" for subgrade preparation, fill material, and aggregate subbase and base courses.
2. Section 321216 "Asphalt Paving" for hot-mix asphalt paving.

1.2 SUBMITTALS

A. Portland Cement Concrete (PCC) mix designs.

B. Quality Control Plan in accordance with IDOT Check Sheet #23 *Recurring Special Provision for Quality Control/Quality Assurance of Concrete Mixtures*.

C. Material Certificates:

1. Aggregates.
2. Cement
3. Concrete Admixtures

1.3 QUALITY ASSURANCE

A. Comply with materials, workmanship, and other applicable requirements of Section 420 of the *IDOT Standard Specifications*.

PART 2 - PRODUCTS

2.1 PORTLAND CEMENT CONRETE

A. In accordance with Article 1020 of the *IDOT Standard Specifications*.

2.2 STEEL REINFORCEMENT

A. Reinforcement Bars and Welded Wire Reinforcement: In accordance with Article 1006.10 of the *IDOT Standard Specifications*.

B. Dowel Bars and Dowel Bar Assembly: In accordance with Article 1006.11 of the *IDOT Standard Specifications*.

2.3 CONCRETE MATERIALS

A. Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project:

1. Portland Cement: In accordance with Article 1001 of the *IDOT Standard Specifications*.
2. Finely Divided Minerals: In accordance with Article 1010 of the *IDOT Standard Specifications*.

B. Coarse Aggregates: In accordance with Article 1004 of the *IDOT Standard Specifications*.

C. Fine Aggregates: In accordance with Article 1003 of the *IDOT Standard Specifications*.

D. Concrete Admixtures: In accordance with Article 1021 of the *IDOT Standard Specifications*.

E. Water: In accordance with Article 1002 of the *IDOT Standard Specifications*.

2.4 CONCRETE CURING MATERIALS

A. In accordance with Article 1022 of the *IDOT Standard Specifications*.

2.5 RELATED MATERIALS

A. Joint Fillers: Hot-poured joint sealer in accordance with Article 1050.02 of the *IDOT Standard Specifications*.

2.6 CONCRETE MIXTURES

A. In accordance with Article 1020 of the *IDOT Standard Specifications* and complying with the following requirements:

1. Curbs and Gutters, Sidewalks, and Miscellaneous Concrete: Class SI Concrete.

2. PCC Pavements and Parking Lots: Class PV Concrete.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Proof-roll prepared aggregate base course to identify unsuitable materials and areas of excess yielding.

3.2 PREPARATION

A. Remove loose material from compacted aggregate base course surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

C. Comply with requirements of Article 420.06 of the *IDOT Standard Specifications*.

3.4 STEEL REINFORCEMENT INSTALLATION

A. Comply with applicable requirements in Article 420 of the *IDOT Standard Specifications*.

3.5 JOINTS

A. Construct longitudinal sawed joints, longitudinal construction joints, transverse contraction joints, and transverse expansion joints in accordance with Article 420.05 of the *IDOT Standard Specifications* and installed as indicated within the Contract Plans and Details.

3.6 CONCRETE PLACEMENT

A. Concrete placement shall be in accordance with Article 420.07 of the *IDOT Standard Specifications*.

3.7 FINISHING

A. General: Concrete finishing shall be in accordance with Article 420.09 of the *IDOT Standard Specifications*. Do not add water to concrete surfaces during finishing operations.

1. Final finish shall be Type B in accordance with Article 420.09(e)(2) of the *IDOT Standard Specifications*.

3.8 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

1. Concrete curing shall be in accordance with Articles 1020.13 and 1022 of the *IDOT Standard Specifications*.

3.9 REPAIR AND PROTECTION

A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Owner.

B. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement (or until full compressive strength is achieved). When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.

C. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

3.10 FIELD QUALITY CONTROL

A. All Quality Control is to be the responsibility of the Contractor and shall be in accordance with IDOT Check Sheet #23 *Recurring Special Provision for Quality Control/Quality Assurance of Concrete Mixtures*.

END OF SECTION 32 1313

SECTION 32 1723

PAVEMENT MARKINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Pavement markings applied to asphalt paving.
2. Pavement markings applied to concrete surfaces.

1.2 SUBMITTALS

A. Product Data:

1. Thermoplastic pavement markings
2. Preformed thermoplastic pavement markings
3. Epoxy pavement markings
4. Glass beads for pavement markings

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Comply with applicable accessibility standards in the Illinois Accessibility Code (IAC) and the *Manual on Uniform Traffic Control Devices (MUTCD).*

1. Standard parking space lines shall be white.

2. Accessible parking space lines shall be yellow with accessible parking space pavement markings (in accordance with the IAC and *MUTCD*).

2.2 MATERIALS

A. Thermoplastic Pavement Markings: In accordance with Article 1095.01 of the *IDOT Standard Specifications.*

1. To be used on all Hot Mix Asphalt pavement surfaces.

B. Epoxy Pavement Markings: In accordance with Article 1095.04 of the *IDOT Standard Specifications.*

1. To be used on all Portland Cement Concrete pavement surfaces.

C. Preformed Thermoplastic Pavement Markings: In accordance with Article 1095.01 of the *IDOT Standard Specifications.*

D. Glass Beads for Pavement Markings: In accordance with Article 1095.07 of the *IDOT Standard Specifications.*

PART 3 - EXECUTION

3.1 PAVEMENT MARKING

A. All work shall be completed in accordance with Section 780 of the *IDOT Standard Specifications*.

B. All pavement marking layout is the responsibility of the Contractor. No pavement markings shall be installed until layout has been approved by the Owner.

END OF SECTION 32 1723

SECTION 32 1726

TACTILE WARNING SURFACING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cast-in-place detectable warning tiles.

1.2 SUBMITTALS

A. Product Data:

B. Manufacturer’s certification stating the product is fully compliant with accessibility standards.

C. Manufacturer’s five year warranty.

D. Samples for each type of exposed finish requiring color selection.

PART 2 - PRODUCTS

2.1 TACTILE WARNING SURFACING, GENERAL

A. Accessibility Requirements: Comply with applicable provisions in Illinois Accessibility Code, City of Rockford Ordinances, and Illinois Department of Transportation requirements.

1. For tactile warning surfaces composed of multiple units, provide units that when installed provide consistent side-to-side and end-to-end dome spacing that complies with requirements.

2.2 DETECTABLE WARNING TILES

A. Cast-in-Place Detectable Warning Tiles: Accessible truncated-dome detectable warning tiles configured for setting flush in new concrete walkway surfaces, with slip-resistant surface treatment on domes and field of tile.
1. Color: Red brick
2. Shapes and Sizes: all panels to be installed to provide 24 inches of truncated domes transversely to the direction of travel.

2.3 ACCESSORIES

A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of tactile warning surfaces, noncorrosive and compatible with each material joined.

B. Sealant: As recommended by manufacturer for sealing perimeter of tactile warning surfacing unit.

PART 3 - EXECUTION

3.1 INSTALLATION OF TACTILE WARNING SURFACING

A. General: Prepare substrate and install tactile warning surfacing according to manufacturer's written instructions unless otherwise indicated. All work shall be in accordance with Article 424.09 of the *IDOT Standard Specifications*.

B. Place tactile warning surfacing units in dimensions and orientation indicated.

C. Cast-in-Place Detectable Warning Tiles: Set each detectable warning tile accurately and firmly in place and completely seat tile back and embedments in wet concrete by tamping or vibrating. Set surface of tile flush with surrounding concrete and adjacent tiles. Remove concrete from tile surfaces and clean using methods recommended in writing by manufacturer.

D. Removable Cast-in-Place Detectable Warning Tiles: Set each detectable warning tile accurately and firmly in place with embedding anchors and fasteners attached, and firmly seat tile back in wet concrete by tamping or vibrating. Set surface of tile flush with surrounding concrete and adjacent tiles. Remove concrete from tile surfaces and clean tiles using methods recommended in writing by manufacturer.

E. Remove and replace tactile warning surfacing that is broken or damaged or does not comply with requirements in this Section. Remove in complete sections from joint to joint unless otherwise approved by Architect. Replace using tactile warning surfacing installation methods acceptable to Architect.

F. Protect tactile warning surfacing from damage and maintain free of stains, discoloration, dirt, and other foreign material.

END OF SECTION 32 1726

Section III

General Provisions & Technical Specifications for Sanitary Sewer Construction

(Separate document incorporated by reference)