28 October 2016

SET #

PROJECT MANUAL FOR:

Searcy Fire Station #2

Searcy, Arkansas

Hoffmann Architectural

Barry Hoffmann, Architect – 501.268.4743 – One Hundred Two North Spring Street, Searcy, Arkansas

DOCUMENT 00010

TABLE OF CONTENTS

Section Title

SERIES 0 DOCUMENTS

MISCELLANEOUS DOCUMENTS
00010 Table of Contents

BIDDING REQUIREMENTS
00105 Invitation to Bid
00200 Instructions to Bidders
00300 Information Available to Bidders
00410 Bid Form

CONTRACTING REQUIREMENTS
00501 Agreement and General Conditions - AIA
00811 Supplementary Conditions - AIA
00910 Addenda – as issued

DIVISION 1 - GENERAL REQUIREMENTS

01001 Basic Requirements

DIVISION 2 - SITE CONSTRUCTION

02230 Site Clearing
02300 Earthwork
02362 Termite Control
02630 Storm Drainage
02750 Rigid Pavement
02811 Landscape Irrigation
02900 Planting

DIVISION 3 - CONCRETE

03050 Basic Concrete Materials and Methods

DIVISION 4 - MASONRY

04065 Masonry Mortar and Grout
04810 Unit Masonry Assemblies

DIVISION 5 - METALS

05120 Structural Steel
05400 Cold-Formed Metal Framing
05500 Metal Fabrications

DIVISION 6 - WOOD AND PLASTICS

06200 Finish Carpentry

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

07210 Building Insulation
07240 Exterior Insulation and Finish Systems
07270 Weather Barriers
07620 Sheet Metal Flashing and Trim
07900 Joint Sealers

DIVISION 8 - DOORS AND WINDOWS

08110 Steel Doors and Frames
08210 Wood Doors
08360 Overhead Doors
08410 Metal-Framed Storefronts
08430 Sandwich Panel Systems
08710 Door Hardware
08800 Glazing

DIVISION 9 - FINISHES

09260 Gypsum Board Assemblies
09510 Acoustical Ceilings
09650 Resilient Flooring
09680 Carpet
09900 Paints and Coatings

DIVISION 10 - SPECIALTIES

10005 Miscellaneous Specialties
10155 Toilet Compartments
10800 Toilet, Bath, and Laundry Accessories

DIVISION 11 - EQUIPMENT

See drawings for equipment.

DIVISION 12 - FURNISHINGS

12355 Casework
12492 Blinds and Shades

DIVISION 13 - SPECIAL CONSTRUCTION

13121 Metal Building Systems
13900 Fire Suppression

DIVISION 14 - CONVEYING SYSTEMS

None this project.

DIVISION 15 - MECHANICAL

See drawings for specifications.

DIVISION 16 - ELECTRICAL

See drawings for specifications.

END OF DOCUMENT

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

DOCUMENT 00105

INVITATION TO BID

Project: Searcy Fire Station #2
Searcy, Arkansas

Owner: City of Searcy Arkansas
401 West Arch Avenue
Searcy, Arkansas 72143
ATTN: Mayor David Morris

Architect:
Hoffmann Architectural Inc.
102 North Spring Street
Searcy, AR 72143

Date: 10/28/16

To all bidders.

General Contractors are invited to submit a Bid under seal to the Architect for construction of a Fire Station to be located on Golf Course Drive in Searcy, Arkansas. The Owner will receive Bids in the office of the Architect at 102 North Spring Street, Searcy, Arkansas at 4:00 PM local prevailing time on the 6th day of December, 2016, for the following project:

Description: Construction of a Fire Station with associated facilities and spaces.

The Owner requires the Project to be completed in 270 calendar days from date of award of contract.

Bidding Documents for a Stipulated Sum contract may be obtained on or after **November 15, 2016** from the office of the Architect upon receipt of a **refundable** deposit, by check, in the amount of $150.00 for each set. (A maximum of three (3) sets will be issued to each general contractor.) Additionally, a scanned PDF file copy of the Bidding Documents may be obtained upon receipt of a written, valid, email address and a **non-refundable** check in the amount of $10.00. PDF documents may be obtained by any interested party.

Bidders will be required to provide Bid security in the form of a Bid Bond of a sum of no less than 5.0 percent of the Bid Sum.

Refer to other bidding requirements described in Document 00200 - Instructions to Bidders.

Submit your Bid on the Bid Form provided. Bidders may supplement this form as appropriate.

Your Bid will be required to be submitted under a condition of irrevocability for a period of 60 days after submission.

The Owner reserves the right to accept or reject any or all Bids.

Hoffmann Architectural Inc.

END OF DOCUMENT

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

DOCUMENT 00200

INSTRUCTIONS TO BIDDERS

1.1 BID SUBMISSION

A. Bids signed and under seal, executed, and dated will be received as established in Section 00105 Invitation to Bid.

B. Amendments to submitted Bids will be permitted when received in writing prior to bid closing and when endorsed by the same party or parties who signed and sealed the Bid.

C. Bidders may withdraw their Bid by written request at any time before bid closing.

1.2 INTENT

A. The intent of this bid request is to obtain an offer to perform work as described in the contract documents for a **Stipulated Sum contract**, in accordance with Contract Documents.

1.3 CONTRACT TIME

A. Perform the Work in **270** calendar days.

B. Liquidated damages in the sum of **$200.00** per day will be assessed for each calendar day beyond the contract period the contractor fails to reach substantial completion.

1.4 DEFINITIONS

A. Bidding Documents: Contract Documents supplemented with Invitation To Bid, Instructions to Bidders, Information Available to Bidders, Bid Form and Appendices, and bid securities, identified.

B. Contract Documents: Defined in AIA Document A201-2007 Article 1, including issued Addenda.

C. Bid: Executed Bid Form and required attachments submitted in accordance with these Instructions to Bidders.

D. Bid Sum: Monetary sum identified by the Bidder in the Bid Form.

1.5 CONTRACT DOCUMENTS IDENTIFICATION

A. The Contract Documents are identified as **Searcy Fire Station #2** as prepared by Hoffmann Architectural Inc. located at 102 North Spring Street, Searcy, Arkansas and identified in the Project Manual.

1.6 AVAILABILITY OF DOCUMENTS

A. Bidding Documents may be obtained as stated in Invitation to Bid.

B. Partial sets of Bidding Documents will not be issued.

C. Deposit will be refunded when Bidding Documents are returned complete, and undamaged, within 7 days of bid opening.

D. Bidding Documents are made available only for the purpose of obtaining offers for this Project. Their use does not grant a license for other purposes.

1.7 EXAMINATION OF DOCUMENTS

A. Upon receipt of Bidding Documents verify documents are complete. Notify Architect/Engineer if documents are incomplete.

B. Immediately notify Architect/Engineer upon finding discrepancies or omissions in Bidding Documents.

1.8 INQUIRIES AND ADDENDA

A. Direct questions in writing to Barry Hoffmann, at the office of the Architect/Engineer; email Barry@HoffmannArchitectural.com .

B. Verbal answers are not binding on any party.

C. Submit questions not less than 7 days before date set for receipt of Bids. Replies will be made by Addenda.

D. Addenda may be issued during bidding period. Addenda will be sent to known Bidders. Addenda become part of the Contract Documents. Include resultant costs in the Bid Sum.

1.9 PRODUCT SUBSTITUTIONS

A. Substitute Products will be considered when request is submitted as an attachment to the Bid Form. Provide complete information on required revisions to other Work to accommodate each substitution, the value of additions to or reductions from the Bid Sum, including revisions to other Work.

1.10 SITE EXAMINATION

A. Examine Project site before submitting a Bid.

1.11 SUBMISSION PROCEDURE

A. Submit one copy of executed offer on Bid Forms provided, signed and sealed with required security deposit in a closed opaque envelope, clearly identified with Bidder's name, Project name, and Owner's name on the outside.

1.12 BID INELIGIBILITY

A. Bids that contain irregularities of any kind, may be declared unacceptable at Owner's discretion.

B. Bids are by invitation only, from selected Bidders. Unsolicited Bids will be returned.

1.13 SECURITY DEPOSIT

A. Bids shall be accompanied by security deposit as follows:
   1. Bid Bond of a sum no less than **5.0** percent of the Bid Sum on a standard surety company form.

B. Endorse Bid Bond in name of the Owner as obligee, signed and sealed by the principal (Contractor) and surety.

C. Security deposit of accepted Bidder will be returned after delivery to the Owner of the required Performance and Payment Bonds by the accepted Bidder.

1.14 PERFORMANCE ASSURANCE

A. Accepted Bidder: Provide a Performance and Payment bond as described in Document 00811 - Supplementary Conditions - AIA.

B. Include the cost of performance assurance bonds in the Bid Sum and identify the cost when requested by the Owner.

1.15 BID FORM SIGNATURE

A. Sign Bid Form, as follows:
   1. Sole Proprietorship: Signature of sole proprietor in the presence of a witness who will also sign. Insert the words "Sole Proprietor" under the signature. Affix seal.
   2. Partnership: Signature of all partners in the presence of a witness who will also sign. Insert the word "Partner" under each signature. Affix seal to each signature.
   3. Corporation: Signature of a duly authorized signing officers in their normal signatures. Insert the officer's capacity in which the signing officer acts, under each signature. Affix the corporate seal. If the Bid is signed by officials other than the president and secretary of the company, or the president/secretary/treasurer of the company, submit a copy of the by-law resolution of their board of directors authorizing them to do so, with the Bid Form in the bid envelope.

1.16 ADDITIONAL BID INFORMATION

A. Complete and submit the following Bid Form Appendices with Bid.
   1. Appendix A - List of Subcontractors: Include names of all major Subcontractors and portions of the Work each Subcontractor will perform.
   2. Appendix B - List of Alternates if applicable: Include cost variation to Bid Sum if applicable.

3. Appendix C – List of Unit Prices if applicable.

1.17 SELECTION AND AWARD OF ALTERNATES

A. Indicate variation of Bid Sum for alternates listed in Document 00410 - Bid Form Appendix B if applicable. This form requests a "difference" in Bid Sum by adding to or deducting from base Bid Sum.

B. Bids will be evaluated on total of base Bid Sum with full consideration of alternates.

1.18 BID OPENING

A. Bids will be opened **publicly** immediately after time for receipt of Bids. Bidders **may be** present.

1.19 DURATION OF OFFER

A. Bids shall remain open to acceptance for a period of **60 days** after bid closing date.

1.20 ACCEPTANCE OF OFFER

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

B. The Owner will consider the three lowest bidders. Bidders will be evaluated based on qualifications along with Bid Sum and alternates.

END OF DOCUMENT

DOCUMENT 00300

INFORMATION AVAILABLE TO BIDDERS

1.1 WAGE DETERMINATION

A. Arkansas Prevailing Wage Laws for public works projects **DO** apply to this project. Appropriate records are to be kept and all required submittals are to be performed by the contractor. The State of Arkansas Department of Labor Prevailing Wage Division letter of determination and requirements is attached herewith.

1.2 SUBSURFACE INVESTIGATION REPORT

A. A preconstruction subsurface soils investigation has not been performed for this project.

B. Contractor shall appoint, employ, and pay for the services of an independent firm to perform testing and inspection of undisturbed soil conditions upon excavation of footings to determine adequacy of soil encountered.

END OF DOCUMENT

ASA HUTCHINSON
GOVERNOR

STATE OF ARKANSAS
ARKANSAS DEPARTMENT OF LABOR
PREVAILING WAGE DIVISION

LEON JONES, JR.
DIRECTOR

10421 WEST MARKHAM • LITTLE ROCK, AR 72205-2190
Phone: 501-682-4536 Fax: 501-682-4506 TRS: 800-285-1131

September 6, 2016

Barry Hoffmann
Hoffmann Architectural Inc.
102 North Spring Street
Searcy, AR 72143

Re: SEARCY FIRE STATION #2
SEARCY, ARKANSAS
WHITE COUNTY

Dear Mr. Hoffmann:

In response to your request, enclosed is Arkansas Prevailing Wage Determination Number **16-158** establishing the minimum wage rates to be paid on the above-referenced project. These rates were established pursuant to the Arkansas Prevailing Wage Law, Ark. Code Ann. §§ 22-9-301 to 22-9-315 and the administrative regulations promulgated thereunder.

If the work is subject to the Arkansas Prevailing Wage Law, every specification shall include minimum prevailing wage rates for each craft or type of worker as determined by the Arkansas Department of Labor Ark. Code Ann. § 22-9-308 (b) (2). Also, the public body awarding the contract shall cause to be inserted in the contract a stipulation to the effect that not less than the prevailing hourly rate of wages shall be paid to all workers performing work under the contract. Ark. Code Ann. § 22-9-308 (c).

Additionally, the scale of wages shall be posted by the contractor in a prominent and easily accessible place at the work site. Ark. Code Ann. § 22-9-309 (a).

Also enclosed is a **"Statement of Intent to Pay Prevailing Wages"** form that should be put in your specifications along with the wage determination. The General/Prime Contractor is responsible for getting this form filled out and returned to this office within 30 days of the Notice to Proceed for this project.

When you issue the Notice to Proceed for this project, please send a copy of the notice to my office.

If you have any questions, please call me at (501) 682-4536 or fax (501) 682-4506.

Sincerely,

Lorna Kay Smith

Lorna K. Smith
Prevailing Wage Division

Enclosures

Arkansas Department of Labor Prevailing Wage Determination

Date: 9/6/2016 **Determination #:** 16-158 **Expires:** 3/6/2017

Project: Searcy Fire Station #2

Site:

City: Searcy, Arkansas

Project County: **White** **Survey#:** 716-AR12

COUNTY(S)	Group
Arkansas	12
Jackson	
Monroe	
Prairie	
White	
Woodruff	

CLASSIFICATION	Basic Hourly Rate	Fringe Benefits
Asbestos Worker/Insulator	$11.80	
Bricklayer/Pointer, Cleaner, Caulker, Stone Mason	$18.85	$1.85
Carpenter	$15.65	$2.29
Concrete Finisher/Cement Mason	$15.00	
Electrician/Alarm Installer	$19.10	$3.70
Glazier	$14.80	
HVACR Mechanic (Excludes Duct Work)	$17.05	$1.05
Ironworker (Including Reinforcing Work)	$15.00	
Laborer	$11.65	
Metal Building Erector	$11.80	
Millwright	$11.95	
Painter/Sheet Rock Finisher	$15.00	
Plasterer	$15.05	
Plumber/Pipefitter	$21.50	$8.42
Roofer	$16.95	$2.35
Sheet Metal (Includes Duct Work)	$22.64	$13.54
Sprinkler Fitter	$17.85	$4.30
Group 2 - Operator	$16.00	
Group 3 - Operator	$16.50	
Group 4 - Operator	$14.65	
Laborer (Brick/Stone Tender)	$12.25	$1.10
Truck Driver (Excludes Dump Truck)	$12.45	

Welders-receive rate prescribed for craft performing operation to which welding is incidental.

Certified 7/1/2016

Classifications that are required, but not listed above, must be requested in writing from the Arkansas Department of Labor, Prevailing Wage Division. Please call (501) 682-4536 for a request form.

Power Equipment Operators:

Group II
Operators engaged in operating the following equipment or performing work relative to the engineer's jurisdiction: Hydraulic cranes, cherry pickers, backhoes, and all derricks with a lifting capacity less than 50 tons, as specified by the manufacturer, all backhoes, tractor or truck type, all overhead & traveling cranes, or tractors with swinging boom attachments, gradealls all above equipment irrespective of motive power, leverman (engineer), hydraulic or bucket dredges, irrespective of size, trackhoes, excavators.

Group III
Heavy Equipment Operators. Operators engaged in operating the following equipment: all bulldozers, all front end loaders, all sidebooms, skytracks, forklifts, all push tractors, all pull scrapers, all motor graders, all trenching machines, regardless of size or motive power, all backfillers, all central mixing plants, 10S and larger, finishing machines, all boiler fireman high or low pressure, all asphalt spreaders, hydro truck crane, multiple drum hoist, irrespective of motive power, all rotary, cable tool, core drill or churn drill, water well and foundation drilling machines, regardless of size, regardless of motive power and dredge tender operator, asphalt paving machines.

Group IV
Light Equipment Operators. Operators engaged in operating the following equipment: Oilerdriver motor crane, single drum hoists, winches and air tuggers, irrespective of motive power, winch or A frame trucks, rollers of all types and pull tractors, regardless of size, elevator operators inside and outside when used for carrying workmen from floor to floor and handling building material, Lad-A-Vator Conveyor, batch plant, and mortar or concrete mixers, below 10S, end dump euclid, pumpcrete spray machine and pressure grout machine, air compressors, regardless of size. All light equipment, welding machines, light plants, pumps, all well point system dewatering and portable pumps, space heaters, irrespective of size, and motive power, equipment greaser, oiler, mechanic helper, drilling machine helper, asphalt distributor and like equipment, safety boat operator and deckhand.

STATEMENT OF INTENT TO PAY PREVAILING WAGES

PROJECT: **SEARCY FIRE STATION #2**
SEARCY, ARKANSAS
WHITE COUNTY

This is to certify that we, the following listed contractors, are aware of the wage requirements of the Arkansas Prevailing Wage Law and by signature below indicate our intent to pay no less than the rates established by **Arkansas Prevailing Wage Determination Number 16-158** for work performed on the above noted public project. I understand that contractors who violate prevailing wage laws, i.e., incorrect classification/scope of work of workers, improper payments of prevailing wages, etc., are subject to fines and will be required to pay back wages due to workers.

	Business Name	Address	Phone#	Signature and Title of Business Official
General/Prime Contractor				
Electrical Subcontractor				
Mechanical Subcontractor				
Plumbing Subcontractor				
Roofing/ Sheet Metal Subcontractor				

THE GENERAL/PRIME CONTRACTOR IS RESPONSIBLE FOR GETTING THIS FORM FILLED OUT AND RETURNING IT TO THE ARKANSAS DEPARTMENT OF LABOR ***WITHIN 30 DAYS OF THE NOTICE TO PROCEED*** FOR THIS PROJECT. RETURN COMPLETED FORM TO THE ARKANSAS DEPARTMENT OF LABOR, PREVAILING WAGE DIVISION, 10421 W. MARKHAM, LITTLE ROCK, ARKANSAS, 72205.

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

DOCUMENT 00410

BID FORM

To: City of Searcy Arkansas
ATTN: Mayor David Morris

Project: **Searcy Fire Station #2**
Searcy, Arkansas

Date: .....

Submitted by: .....
(full name)

(full address) .....

.....

1.1 OFFER

Having examined the Place of The Work and all matters referred to in the Instructions to Bidders, Bid Documents and Contract Documents prepared by Hoffmann Architectural Inc., Architect for the above mentioned project, we the undersigned, hereby offer to enter into a Contract to perform the Work for the Contract Sum of:

$.....dollars, in lawful money of the United States of America.

We have included, the required security Bid Bond as required by the Instructions to Bidders.

All applicable taxes are included in the Bid Sum.

1.2 ACCEPTANCE

This offer shall be open to acceptance and is irrevocable for 60 days from the bid closing date.

If this bid is accepted by the Owner within the time period stated above, we will:

- Execute the Agreement within 7 days of receipt of acceptance of this bid.
- Furnish the required bonds within seven days of receipt of acceptance of this bid.
- Commence work within 14 days after written acceptance of this bid upon receipt of the Notice to Proceed.

If this bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bond(s), the security deposit shall be forfeited as damages to the Owner by

reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.

1.3 CONTRACT TIME

If this bid is accepted, we will:

Complete the Work within **270** calendar days.

Pay liquidated damages in the amount of **$200.00** for each calendar day beyond the contract period we have not achieved substantial completion.

1.4 ADDENDA

The following Addenda have been received. The modifications to the Contract Documents noted therein have been considered and all costs thereto are included in the Bid Sum.
NOTE: All addenda must be listed or bid will be rejected.

Addendum #…..Dated…….

Addendum #…..Dated…….

Addendum #…..Dated…….

1.5 APPENDICES

A List of Subcontractors is appended hereto and identified as Appendix A.

A List of Alternates is appended hereto and identified as Appendix B.

1.6 BID FORM SIGNATURES

The Corporate Seal of

.....
(Bidder - print the full name of your firm)

was hereunto affixed in the presence of:

.....
(Authorized signing officer Title)

(Seal)

.....
(Authorized signing officer Title
(Seal)

APPENDIX A - LIST OF SUBCONTRACTORS

The following is the list of Subcontractors referenced in the Bid Form submitted by:

(Bidder).....

(Owner) **City of Searcy**

Dated..... and which is an integral part of the Bid Form.

The following work will be performed (or provided) by Subcontractors and coordinated by us:

WORK SUBJECT	NAME
Plumbing	.....
Electrical	.....
Heating, Ventilating, & Air Conditioning	.....

APPENDIX B - LIST OF ALTERNATES

The following is the list of Alternates referenced in the Bid Form submitted by:

(Bidder) .....

(Owner) **City of Searcy**

Dated ..... and which is an integral part of the Bid Form.

The following amounts shall be added to or deducted from the Guaranteed Maximum Price. Refer to Section 01001 - Basic Requirements.

Alternate # 1 – Eliminate all instances of faux stone veneer over concrete masonry units, replacing it with scored split face concrete masonry units.
As described in Section 01001 – Schedule of Alternates. (Deduct) $ .....

Alternate # 2 – Eliminate the southern truck bay (4^{th}) from the structure.
As described in Section 01001 – Schedule of Alternates. (Deduct) $ .....

END OF DOCUMENT

DOCUMENT 00501

AGREEMENT AND GENERAL CONDITIONS - AIA

1.1 AGREEMENT

A. AIA Document A101-latest version, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment is a Stipulated Sum, forms the basis of Agreement between the Owner and Contractor. The document is to be compiled by the General Contractor, reviewed by the Architect, signed by the Contractor and subsequently forwarded to the Owner for final execution.

1.2 GENERAL CONDITIONS

A. AIA Document A201-latest version, General Conditions of the Contract for Construction, is the General Conditions of the Contract.

1.3 SUPPLEMENTARY CONDITIONS

A. Refer to Document 00811 for modifications to General Conditions.

END OF DOCUMENT

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

DOCUMENT 00811

SUPPLEMENTARY CONDITIONS - AIA

1.1 SUPPLEMENTARY CONDITIONS

A. These Supplementary Conditions modify the General Conditions of the Contract for Construction, AIA Document A201, and other provisions of the Contract Documents as indicated below. All provisions which are not so modified remain in full force and effect.

B. The terms used in these Supplementary Conditions which are defined in the General Conditions of the Contract for Construction, AIA Document A201-latest version, have the meanings assigned to them in the General Conditions.

ARTICLE 1.1 - BASIC DEFINITIONS

Add the following subparagraphs:

1.1.9 Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work, but does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.

1.1.10 Furnish: To supply and deliver, unload, inspect for and report damage.

1.1.11 Install: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, and make ready for use.

1.1.12 Provide: To furnish and install, complete in place, operating, tested, and approved.

ARTICLE 3.4 LABOR AND MATERIALS

Add the following subparagraphs:

3.4.4 All contractors and subcontractors engaged in the work shall conform to the labor laws of the State in which the project is located. This includes but is not limited to compliance with prevailing wage rate requirements if applicable.

ARTICLE 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

Add the following subparagraphs:

3.7.6 The contractor shall be licensed per the licensing standards and requirements within the state in which the project is located.

ARTICLE 11 - INSURANCE AND BONDS

ARTICLE 11.1 CONTRACTOR'S LIABILITY INSURANCE

Add the following subparagraphs:

11.1.1.1 The amount of such insurance shall be not less than the following or any limits required by law.

11.1.1.2 Worker's Compensation and Employers Liability Coverage:

a.	State:	Statutory
b.	Applicable Federal:	Statutory
c.	Employer's Liability:	$500,000.00 per accident
		$500,000.00 Disease, Policy Limit
		$500,000.00 Disease, Each Employee

11.1.1.3 Comprehensive General Liability: Owner and Architect shall be named as additional insured.

a.	General Aggregate:	$1,000,000.00
b.	Completed Operations:	$1,000,000.00 Aggregate
	To be maintained for one year after substantial completion.	
c.	Personal Injury:	$1,000,000.00 Each Occurrence
d.	Each Occurrence Limit:	$1,000,000.00 Each Occurrence
e.	Automobile Liability:	$1,000,000.00 Combined Single Limit
	To include; owned, non-owned, & hired vehicles.	
f.	Umbrella Excess Liability	$1,000,000.00

11.1.1.4 Owner's and Contractor's Protection Liability $1,000,000.00 Combined Single Limit

ARTICLE 11.3 PROPERTY INSURANCE

Delete subparagraph 11.3.1 in its entirety and substitute the following:

11.3.1 The contractor 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 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 until final payment has been made or until no person or entity other than the Owner has an insurable interest in the property, whichever is later. This insurance shall include interests of the Owner, the Contractor, and Subcontractors in the Project.

Delete subparagraph 11.3.1.2 in its entirety.

Delete subparagraph 11.3.1.3 in its entirety and substitute the following:

11.3.1.3 If the property insurance requires deductibles, the Contractor shall pay the costs of the deductible in all cases.

ARTICLE 11.4 PERFORMANCE BOND AND PAYMENT BOND

Add the following subparagraphs:

11.4.3 The successful bidder upon the Notice of Award shall within the designated time provide performance and payment bonds in the amount of 100 percent of the established contract

sum, submitted on AIA Document A311. The bonds shall be in the form of firm commitment supported by corporate sureties whose names appear on the list contained in the United States Treasury Department Circular 570.

11.4.4 Bonds are to be filed with the circuit clerk of the county in which the work to be performed is located. A filed circuit clerk stamped copy is to be submitted to the architect.

END OF DOCUMENT

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 01001

BASIC REQUIREMENTS

PART 1 GENERAL

1.1 CONTRACT DESCRIPTION

A. Work of the Project includes construction the project as described in the architectural drawings.

B. Perform Work of Contract under a stipulated sum contract with the Owner in accordance with Conditions of Contract.

1.2 WORK BY OWNER

A. Owner will award contracts for supply and installation of various equipment potentially including but not limited to computer, communications, specialty, etc….

B. Items noted as NIC (Not in Contract), i.e. movable cabinets, furnishings, and minor equipment, will be furnished and installed by Owner

1.3 CONTRACTOR'S USE OF PREMISES

A. Limit use of premises to allow:
1. Work by others and work by Owner.

1.4 SPECIFICATION CONVENTIONS

A. These specifications are written in imperative mood and streamlined form. This imperative language is directed to the Contractor, unless specifically noted otherwise. The words "shall be" are included by inference where a colon (:) is used within sentences or phrases.

1.5 SCHEDULE OF VALUES

A. Submit schedule on AIA Form G703. Contractor's standard form or electronic media printout will be considered.

B. Submit Schedule of Values in duplicate within 20 days after date of Owner-Contractor Agreement bearing the written approval of the surety company.

1.6 APPLICATIONS FOR PAYMENT

A. Submit three copies of each application on AIA Form G702 and G703.

B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.

C. Payment Period: Monthly.

D. Retainage for the project shall be five percent (5%) of completed work each month.

1.7 CHANGE PROCEDURES

A. Stipulated Sum/Price Change Order: Based on Proposal Request and Contractor's maximum price quotation or Contractor's request for Change Order as approved by Architect/Engineer.

B. Change Order Forms: AIA G701- latest version.

1.8 FIELD ENGINEERING

A. Employ experienced instrument technician to locate reference datum and protect survey control and reference points.

B. Establish elevations, lines, and levels and certify elevations and locations of the Work conform with Contract Documents.

C. Verify field measurements are as indicated on shop drawings or as instructed by manufacturer.

1.9 PRECONSTRUCTION MEETINGS

A. Architect/Engineer will schedule preconstruction meeting after Notice of Award for affected parties.

B. When required in individual specification section, convene pre-installation meeting at Project site prior to commencing work of section.

1.10 PROGRESS MEETINGS

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

B. Preside at meetings, record minutes, and distribute copies within two days to those affected by decisions made.

1.11 COLOR AND MATERIAL SELECTIONS

A. ALL materials, equipment, and products which are to be used in the construction that have choices/options available are to be submitted for review and selection by the architect.

B. Colors/materials will NOT be selected until ALL color submissions have been made so that a full color scheme may be developed at once.

C. Multiple color schemes/combinations will be chosen throughout the project and may include but are not limited to paint accent walls, floor tile patterns, laminate combinations, etc…

1.12 CUTTING AND PATCHING

A. Employ skilled and experienced installer to perform cutting and patching new Work; restore Work with new Products.

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

C. Cut masonry and concrete materials using masonry saw or core drill. Restore Work with new Products in accordance with requirements of Contract Documents.

D. Fit Work tight to adjacent elements. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.

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

F. Refinish surfaces to match adjacent finishes.

1.13 SUBMITTAL PROCEDURES

A. Submittal form to identify Project, Contractor, subcontractor or supplier; and pertinent Contract Document references.

B. Apply Contractor's stamp, signed or initialed, certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with requirements of the Work and Contract Documents.

C. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of completed Work.

D. Revise and resubmit submittals as required; identify changes made since previous submittal.

1.14 CONSTRUCTION PROGRESS SCHEDULES

A. Submit initial progress schedule in duplicate within 15 days after date of Owner-Contractor Agreement for Architect/Engineer review.

B. Submit revised schedules with each Application for Payment, identifying changes since previous version. Indicate estimated percentage of completion for each item of Work at each submission.

C. Submit horizontal bar chart with separate line for each major section of Work or operation, identifying first work day of each week.

1.15 PROPOSED PRODUCTS LIST

A. Within 15 days after date of Owner-Contractor Agreement, submit list of major Products proposed for use, with name of manufacturer, trade name, and model number of each product.

1.16 PRODUCT DATA

A. Product Data:
   1. Submitted to Architect/Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
   2. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes as specified.

B. Submit number of copies which Contractor requires, plus two copies which will be retained by Architect/Engineer.

C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturer's standard data to provide information unique to this project.

1.17 SHOP DRAWINGS

A. Shop Drawings:
   1. Submitted to Architect/Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
   2. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes as specified.

B. Submit number of opaque reproductions Contractor requires, plus two copies which will be retained by Architect/Engineer.

1.18 SAMPLES

A. Samples for Review:
   1. Submitted to Architect/Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
   2. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes as specified.

B. Samples For Selection:
   1. Submitted to Architect/Engineer for aesthetic, color, or finish selection.
   2. Submit samples of finishes from full range of manufacturer's standard colors, textures, and patterns for Architect/Engineer selection.
   3. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes as specified.
   4. Colors/materials will NOT be selected until ALL color submissions have been made so that a full color scheme may be developed at once.
   5. Multiple color schemes/combinations will be chosen throughout the project and may include but are not limited to paint accent walls, floor tile patterns, laminate combinations, etc…

C. Submit samples to illustrate functional and aesthetic characteristics of Product.

D. Submit samples of finishes from full range of manufacturer's standard colors, textures, and patterns for Architect/Engineer's selection.

1.19 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual specification sections, submit manufacturer printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data.

1.20 MANUFACTURER'S CERTIFICATES

A. When specified in individual specification sections, submit certifications by manufacturer to Architect/Engineer, in quantities specified for Product Data.

B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

1.21 QUALITY CONTROL

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

B. Comply with manufacturer's instructions.

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

1.22 TOLERANCES

A. Monitor fabrication and installation tolerance control of installed Products over suppliers, manufacturers, Products, site conditions, and workmanship, to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply fully with manufacturer's tolerances.

1.23 REFERENCES

A. Conform to reference standards by date of issue current as of date of Contract Documents.

B. When specified reference standard conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

1.24 TESTING AND INSPECTION LABORATORY SERVICES

A. Contractor shall appoint, employ, and pay for specified services of independent firm to perform testing and inspection as required in the various sections of the Specification and/or at the owner's discretion.

B. Independent firm will perform tests, inspections, and other services as required.

C. Cooperate with independent firm; furnish samples as requested.

D. Contractor shall appoint, employ, and pay for re-testing required because of non-conformance to specified requirements.

1.25 MANUFACTURER'S FIELD SERVICES AND REPORTS

A. When specified in individual specification sections, require material or Product suppliers or manufacturers to furnish qualified staff personnel to observe site conditions and to initiate instructions when necessary.

B. Report to architect/engineer observations and site decisions or instructions that are supplemental or contrary to manufacturer's written instructions.

1.26 EXAMINATION

A. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.

B. Verify utility services are available, of correct characteristics, and in correct location.

1.27 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

1.28 TEMPORARY ELECTRICITY

A. Provide separate metering and pay cost of electricity used.

B. Provide temporary electricity and power outlets for construction operations, connections, branch wiring, distribution boxes, and flexible power cords as required.

1.29 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

A. Provide and maintain temporary lighting for construction operations.

B. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.

C. Permanent building lighting may be utilized during construction. Repair, clean, and replace lamps at end of construction.

1.30 TEMPORARY HEATING AND COOLING

A. Provide heating and cooling devices and heat and cool as needed to maintain specified conditions for construction operations.

B. Provide separate metering and pay cost of energy used.

C. Provide and pay for operation, maintenance, and regular replacement of filters and worn or consumed parts.

D. Maintain minimum ambient temperature of 50 degrees F in areas where construction is in progress, unless indicated otherwise in specifications.

1.31 TEMPORARY VENTILATION

A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

1.32 TELEPHONE SERVICE

A. Provide, maintain and pay for cellular phone service with photo and texting capability for the job superintendent on site.

1.33 TEMPORARY WATER SERVICE

A. Provide, maintain and pay for suitable quality water service required for construction operations.

1.34 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. New facilities may not be used.

B. Maintain in clean and sanitary condition.

1.35 FIELD OFFICES AND SHEDS

A. Office: Weather tight, with lighting, electrical outlets, heating, cooling and ventilating equipment, and equipped with sturdy furniture and drawing display table.

B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.

1.36 ACCESS ROADS

A. Construct and maintain temporary roads accessing public thoroughfares to serve construction area.

1.37 PARKING

A. Provide temporary parking areas to accommodate construction personnel.

1.38 PROGRESS CLEANING AND WASTE REMOVAL

A. Collect and maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition.

1.39 ENCLOSURES

A. Provide temporary weather tight closures to exterior openings to permit acceptable working conditions and protection of the Work.

1.40 PROTECTION OF INSTALLED WORK

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

B. Prohibit traffic or storage upon waterproofed or roofed surfaces.

1.41 SECURITY

A. Provide security and facilities to protect Work from unauthorized entry, vandalism, or theft.

1.42 WATER CONTROL

A. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

B. Provide erosion control.

1.43 POLLUTION AND ENVIRONMENTAL CONTROL

A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

B. Provide dust control, erosion and sediment control, noise control, pest control and rodent control to allow for proper execution of the Work.

C. Comply with pollution and environmental control requirements of State of Arkansas.

D. Provide water run-off control in the form of silt fencing and anchored hay bales as required. Provide drawings as may be required by municipality showing location of erosion control.

1.44 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion review.

B. Remove underground installations to minimum depth of 2 feet. Grade site as indicated on Drawings.

C. Clean and repair damage caused by installation or use of temporary work.

D. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

1.45 PRODUCTS

A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work, but does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work.

B. Do not use materials and equipment removed from existing premises, except as specifically identified or allowed by the Contract Documents.

C. Provide interchangeable components of same manufacture for components being replaced.

1.46 DELIVERY, HANDLING, STORAGE, AND PROTECTION

A. Deliver, handle, store, and protect Products in accordance with manufacturer's instructions.

1.47 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit request for substitution for manufacturers not named.

1.48 SUBSTITUTIONS

A. Instructions to Bidders specify time for submitting requests for Substitutions during bidding period to requirements specified in this section.

B. Substitutions will only be considered when Product becomes unavailable through no fault of Contractor.

C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

D. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.

1.49 CLOSEOUT PROCEDURES

A. Submit written certification Contract Documents have been reviewed, Work has been inspected, and Work is complete in accordance with Contract Documents and ready for Architect/Engineer's inspection.

B. Submit final Application for Payment identifying total adjusted Contract Sum/Price, previous payments, and amount remaining due.

1.50 FINAL CLEANING

A. Execute final cleaning prior to final inspection.

B. Clean interior and exterior surfaces exposed to view. Vacuum carpeted and soft surfaces.

C. Wax and seal all Vinyl Composition Tile floors as well as other floor per manufacturers recommendations.

D. Clean debris from site, roofs, gutters, downspouts, and drainage systems.

E. Replace filters of operating equipment.

F. Remove waste and surplus materials, rubbish, and construction facilities from site.

1.51 STARTING OF SYSTEMS

A. Provide seven days notification prior to start-up of each item.

B. Ensure each piece of equipment or system is ready for operation.

C. Execute start-up under supervision of responsible persons in accordance with manufacturer's instructions.

D. Submit written report stating equipment or system has been properly installed and is functioning correctly.

1.52 DEMONSTRATION AND INSTRUCTIONS

A. Demonstrate operation and maintenance of Products to Owner's personnel two weeks prior to date of Substantial Completion.

B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

C. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed-upon times, at equipment location.

1.53 TESTING, ADJUSTING, AND BALANCING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

B. Owner will appoint, employ, and pay for services of independent firm to perform testing, adjusting, and balancing. This testing will be in addition to testing required by other sections of this specification.

C. Reports will be submitted by independent firm to Architect/Engineer indicating observations and results of tests and indicating compliance or non-compliance with specified requirements and with requirements of Contract Documents.

D. Cooperate with independent firm; furnish assistance as requested.

E. Re-testing required because of non-conformance to specified requirements will be charged to Contractor.

1.54 PROTECTING INSTALLED CONSTRUCTION

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

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

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

D. Prohibit traffic from landscaped areas.

1.55 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of Contract Documents to be utilized for record documents.

B. Record actual revisions to the Work. Record information concurrent with construction progress.

C. Specifications: Legibly mark and record at each Product section description of actual Products installed.

D. Record Documents and Shop Drawings: Legibly mark each item to record actual construction.

E. Submit documents to Architect/Engineer with claim for final Application for Payment.

1.56 OPERATION AND MAINTENANCE DATA

A. Submit two sets prior to final inspection, bound in 8-1/2 x 11 inch text pages, three D side ring binders with durable plastic covers.

B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS" and title of project.

C. Internally subdivide binder contents with permanent page dividers, logically organized, with tab titles legibly printed under reinforced laminated plastic tabs.

D. Contents:
1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, subcontractors, and major equipment suppliers.
2. Part 2: Operation and maintenance instructions, arranged by system.
3. Part 3: Project documents and certificates.

1.57 SPARE PARTS AND MAINTENANCE MATERIALS

A. Provide Products, spare parts, maintenance and extra materials in quantities specified in individual specification sections.

B. Deliver to Project site and place in location as directed by Owner; obtain receipt prior to final payment.

1.58 WARRANTIES

A. Provide duplicate notarized copies.

B. Execute and assemble transferable warranty documents from subcontractors, suppliers, and manufacturers.

C. Submit prior to final Application for Payment.

1.59 ALTERNATES

A. Alternates quoted on Bid Form will be reviewed and accepted or rejected at Owner's option.

B. Coordinate related Work and modify surrounding Work as required to accommodate alternates.

C. Schedule of Alternates:

Alternate No. 1: Eliminate all instances of faux stone veneer over concrete masonry units, replacing them with scored split face concrete masonry units.

Alternate No. 2: Eliminate the southern Truck Bay (4^{th}) from the project as described herewith. The southern façade is to remain as designed merely shifted to be constructed at grid line 6 rather than grid line 7. Doors 120J and 120K will be eliminated. One window type "A" and one window type "E" will be eliminated. The metal building structural frame at grid line 6 is to be designed as a clear span to accommodate the future addition of the 4^{th} truck bay. One trench drain, two interior hose bibs, and one 2" fill station will be eliminated. Unit heaters and CO2 sensors at the south wall are to remain, merely mounted at grid 6. One HVLS-2 fan is to be eliminated. The following lighting fixtures are to be eliminated: one "K", two "G", and three "A".

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 02230

SITE CLEARING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Removing surface debris, paving, curbs, designated plant life, and grass.
2. Removing topsoil.
3. Removing subsoil.
4. Rough grading and site contouring.

1.2 SUBMITTALS

A. Product Data: Submit data for herbicide.

PART 2 PRODUCTS

2.1 SITE CLEARING

A. Herbicide: type, approved by applicable regulatory agency.

PART 3 EXECUTION

3.1 PROTECTION

A. Identify and protect utilities from damage.

B. Protect trees, plant growth, and features designated to remain, as final landscaping. Identify and tag.

C. Verify survey benchmark and intended elevations for the Work are as indicated on Drawings.

3.2 CLEARING

A. Clear areas required for access to site and execution of Work to minimum depth of 8 inches.

B. Remove paving, curbs, and surface rock.

C. Remove trees and shrubs indicated. Remove stumps, main root ball and root system.

D. Apply herbicide to remaining stumps or plant life to inhibit growth.

3.3 ROUGH GRADING

A. Identify required lines, levels, contours, and datum.

B. Identify known underground, above ground, and aerial utilities. Stake and flag locations.

C. Notify utility company to remove and relocate utilities.

D. Excavate topsoil from areas to be further excavated, re-landscaped or re-graded.

E. Stockpile topsoil and subsoil in area designated on site.

F. Remove excess topsoil and subsoil not being reused, from site.

3.4 CLEAN UP

A. Remove debris, rock larger than 1 cu ft, and extracted plant life from site.

END OF SECTION

SECTION 02300

EARTHWORK

PART 1 GENERAL

1.1 SUMMARY

A. Section includes site grading, removal of topsoil and subsoil, building excavating and trenching, backfilling, and compacting.

PART 2 PRODUCTS

2.1 SOIL MATERIALS

A. Topsoil: Reusable excavated friable loam; free of subsoil, roots, grass, weeds, large stone, and foreign matter.

B. Subsoil: Excavated material, graded free of lumps larger than 6 inches, rocks larger than 3 inches, organic material, and debris.

2.2 FILL MATERIALS

A. ALL FILL MATERIAL TO COMPLY WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL INVESTIGATION ENGINEERING REPORT if available.

B. Type A - Coarse gravel: Crushed, washed natural stone; free of shale, clay, friable material, sand, debris; graded within the following limits:
   1. Minimum Size: 1/2 inch
   2. Maximum Size: 2 inch

C. Type B - Pea Gravel: Natural stone; washed, free of clay, shale, organic matter;
   1. Minimum Size: 1/4 inch
   2. Maximum Size: 5/8 inch

D. Type C - Sand: Natural river or bank sand; washed; free of silt, clay, loam, friable or soluble materials, and organic matter.

E. Type D - Subsoil: Reused, free of rock larger than 3 inch size, and debris.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Contractor to appoint, employ, and pay for inspection services of an independent firm to verify adequacy of exposed undisturbed soil as well as adequacy and compaction of soil placed by the contractor.

B. Identify required lines, levels, contours, and datum.

C. Notify Architect/Engineer of unexpected subsurface conditions and discontinue affected work in area until notified to resume work.

D. Identify and flag known utility locations. Notify utility company to remove and relocate utilities.

E. Maintain and protect existing utilities to remain.

F. Verify foundation or basement walls are braced to support surcharge forces imposed by backfilling operations.

3.2 PROTECTION OF ADJACENT WORK

A. Underpin adjacent structures which may be damaged by excavation work, including service utilities and pipe chases.

B. Grade excavation top perimeter to prevent surface water run-off into excavation or to adjacent properties.

3.3 TOPSOIL EXCAVATING

A. Do not excavate wet topsoil.

B. Excavate topsoil and stockpile in area to be designated on site.

3.4 SUBSOIL EXCAVATING

A. Do not remove wet subsoil.

B. Remove groundwater by pumping to keep excavations dry.

C. Excavate subsoil required for building foundations, construction operations, and other Work.

D. Slope banks to angle of repose or less, until shored.

E. Do not interfere with 45 degree bearing splay of foundations.

F. Proofroll bearing surfaces. Fill soft spots with Type A fill and compact uniformly to 95 percent of maximum density.

G. Correct unauthorized excavation at no cost to Owner.

H. Fill over-excavated areas under structure bearing surfaces in accordance with direction by Architect/Engineer.

I. Stockpile subsoil in area to be designated on site.

3.5 TRENCHING

A. Excavate for storms sewer sanitary sewer water gas piping to municipal utilities.

B. Cut trenches sufficiently wide to enable installation of utilities and allow inspection.

C. Hand trim excavation and leave free of loose matter. Hand trim for bell and spigot pipe joints.

D. Support pipe and conduit during placement and compaction of bedding fill.

E. Backfill trenches to required contours and elevations.

F. Place and compact fill materials as for Backfilling.

3.6 BACKFILLING

A. Backfill areas to contours and elevations. Use unfrozen and unsaturated materials.

B. Backfill systematically, as early as possible, to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.

C. Place material in continuous layers as follows:
1. Soil Materials: Maximum 8 inches compacted depth.
2. Fill Materials: Maximum 8 inches compacted depth.

D. Employ placement method so not to disturb or damage foundations, or utilities in trenches.

E. Maintain optimum moisture content of backfill materials to attain required compaction density.

F. Backfill against supported foundation walls. Backfill simultaneously on each side of unsupported foundation walls.

G. Slope grade away from building minimum 2 inches in 10 ft, unless noted otherwise.

3.7 PLACING TOPSOIL

A. Place topsoil in areas where seeding planting is scheduled.

B. Fine grade topsoil eliminating rough or low areas. Maintain levels, profiles, and contours of subgrade.

C. Remove large stone, gravel, roots, grass, weeds, debris, and foreign material while spreading.

D. Lightly compact placed topsoil.

E. Leave stockpile area and site clean and raked, ready to receive landscaping.

3.8 TOLERANCES

A. Top Surface of Exposed Subgrade: Plus or minus one inch.

B. Top of Topsoil: Plus or minus 1/2 inch.

3.9 SCHEDULE

A. ALL CONSTRUCTION PREPARATION TO COMPLY WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL INVESTIGATION ENGINEERING REPORT MINIMUM if available.

B. Interior Slab-On-Grade: prepare as required, Type B fill, 4 inches thick, compact uniformly to 95 percent of maximum density.

C. Fill Under Landscaped Areas: Type D fill, to 12 inches below finish grade, compact uniformly to 95 percent of maximum density.

D. Fill Under Asphalt Paving: prepare as required, Type A fill, to specified depth below finish paving elevation at light duty and heavy duty areas respectively, compact uniformly to 95 percent of maximum density.

E. Locate sand fill Type C as noted or specified.

END OF SECTION

SECTION 02362

TERMITE CONTROL

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Soil treatment for termite control.

1.2 SUBMITTALS

A. Product Data: Submit toxicants to be used, composition by percentage, dilution schedule, intended application rate. Include product label information.

B. Test Reports: Indicate regulatory agency approval reports.

C. Manufacturer's Application Instructions: Indicate caution requirements and in accordance with current product label of chosen pesticide.

D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

E. Certify applications followed NPMA WDO for termite control or other regional location guidance.

1.3 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record date and rate of application, areas of application.

B. Operation and Maintenance Data: Indicate re-treatment schedule.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with Municipality of Little Rock, Arkansas Public Work's standard.

1.5 WARRANTY

A. Furnish ONE year warranty for damage and repairs to building and building contents caused by termites. Repair damage. Re-treat where required.

B. Offer continued yearly termite contract to owner.

PART 2 PRODUCTS

2.1 MATERIAL

A. Furnish materials in accordance with Municipality of Little Rock, Arkansas Public Work's standards.

B. Toxicant Chemical: Local authority approved; synthetically color dyed to permit visual identification of treated soil.

C. Diluent: Recommended by toxicant manufacturer.

2.2 MIXES

A. Mix toxicant to manufacturer's instructions.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify soil surfaces are unfrozen, sufficiently dry to absorb toxicant, and ready to receive treatment.

B. Verify final grading and excavation are complete.

3.2 APPLICATION

A. Install Work in accordance with Municipality of Little Rock Public Work's standards.

3.3 SCHEDULES

A. Locations:
1. Under Slabs-on-Grade.
2. Exterior Side of Foundation Surface.

END OF SECTION

SECTION 02630

STORM DRAINAGE

PART 1 GENERAL

1.1 SUMMARY

A. Section includes site storm sewerage drainage piping, fittings and accessories, and bedding; connection of drainage system to municipal sewers and; catch basins, plant area drains, paved area drainage, site surface drainage.

1.2 SUBMITTALS

A. Product Data: Submit data indicating pipe, pipe accessories, and.

B. Manufacturer's Installation Instructions: Submit special procedures required to install Products specified.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.3 CLOSEOUT SUBMITTALS

A. Project Record Documents: Accurately record actual locations of pipe runs, connections, catch basins, cleanouts, and invert elevations.

B. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

PART 2 PRODUCTS

2.1 STORM DRAINAGE

A. Sewer Pipe Materials:
   1. Plastic Pipe: ASTM D2751, SDR 35, Acrylonitrile-Butadiene-Styrene (ABS) material; inside nominal diameter as indicated in drawings, bell and spigot style solvent sealed joint end.

2.2 ACCESSORIES

A. Fittings: Same material as pipe molded or formed to suit pipe size and end design, in required tee, bends, elbows, cleanouts, reducers, traps and other configurations required.

B. Filter Fabric: Non-biodegradable, non-woven,; AEF 10oz. Polypropylene manufactured by American Engineering Fabrics or approved equal.

2.3 CATCH BASINS AND PLANT AREA DRAINS

A. Downspouts are NOT to daylight at the surface of concrete walks.

B. Curb outlet: ADS 12" flat AdvanEDGE #1432AN located at face of curb or walk.:
1. Locate at all downspouts daylighting at face of curb or walk.

C. Channel Drains: NDS #830 with NDS #837 grate and associated accessories.
1. Locate at minimum 30'-0" intervals, through concrete walks at the low side of earthen/landscape islands surrounded by impervious surfaces, as applicable, or as denoted in drawings.

D. Downspout inlet: NDS #900 tapered catch basin w/ #980 square grate or approved equal:
1. Locate at all downspouts at concrete walks.
2. Locate at all downspouts shown tied to underground drainage systems.

2.4 BEDDING AND COVER MATERIALS

A. Bedding and Cover: Fill as specified in Section 02300.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify trench cut is ready to receive work and excavations, dimensions, and elevations are as indicated on drawings.

3.2 PREPARATION

A. Hand trim excavations to required elevations. Correct over excavation with fine aggregate.

B. Remove large stones or other hard matter capable of damaging piping or impeding consistent backfilling or compaction.

3.3 BEDDING

A. Excavate pipe trench in accordance with Section 02300 for work of this section. Hand trim excavation for accurate placement of pipe to elevations indicated.

B. Place bedding material at trench bottom, level materials in continuous layer not exceeding 6 inches compacted depth.

C. Maintain optimum moisture content of bedding material to attain required compaction density.

3.4 INSTALLATION - PIPE

A. Install pipe, fittings, and accessories in accordance with ASTM D2321. Seal joints watertight.

B. Place pipe on minimum 4 inch deep bed of filter aggregate.

C. Lay pipe to slope gradients noted on drawings or as required to maintain a minimum of ¼" per foot slope to daylight with maximum variation from indicated slope of 1/8 inch in 10 feet.

D. Install aggregate at sides. Install top cover to minimum compacted thickness of 6 inches, compact to 95 percent.

E. Do not displace or damage pipe when compacting.

F. Connect to municipal storm sewer system, or daylight to surface as indicated on drawings.

3.5 INSTALLATION - CATCH BASINS AND CLEANOUTS

A. Form bottom of excavation clean and smooth to correct elevation.

B. Establish elevations and pipe inverts for inlets and outlets as indicated on Drawings or as required to maintain minimum ¼" per foot positive drainage.

C. Mount lid and frame level, secured to top to elevation indicated.

3.6 FIELD QUALITY CONTROL

A. Request inspection prior to placing aggregate cover over pipe.

B. Compaction testing will be performed in accordance with ASTM D1557.

C. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.

D. Frequency of Tests: min. one per each 100 linear feet of piping.

E. Infiltration Test: Test in accordance with ASTM C969.

F. Pressure Test: Test in accordance with ASTM C924 and ASTM C1103, depending on pipe size.

G. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.
   1. Take care not to damage or displace installed pipe and joints during construction of pipe supports, backfilling, testing, and other operations.
   2. Correct damaged or displaced pipe. Repeat tests for corrected sections of pipe.

3.7 SCHEDULE

A. As indicated in the sections above, or;

B. As indicated on drawings.

END OF SECTION

SECTION 02750

RIGID PAVEMENT

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes.
1. Concrete sidewalks.
2. Concrete pavement areas.
3. Concrete curbs and gutters.
4. Detectable warning pavers.

1.2 SUBMITTALS

A. Product Data: Submit product information.

B. Design Data: Submit mix design of each class of mix.

1.3 QUALITY ASSURANCE

A. Perform Work as specified by Section 501 of the Standard Specifications for Highway Construction (Edition of 2003) as published by the Arkansas State Highway and Transportation Department.

PART 2 PRODUCTS

2.1 REINFORCED CEMENT CONCRETE PAVEMENT

A. Concrete Materials: As specified in Section 03050.

B. Forms: Wood or Steel material, profiled to suit conditions.

C. Joint Filler: Asphalt impregnated wood fiberboard.

D. Reinforcing Steel: ASTM A615/A615M; 40 ksi yield grade; deformed billet steel bars, unfinished.

E. Welded Steel Wire Fabric: ASTM A185 Plain type, in flat sheets; unfinished.

F. Dowels: ASTM A615/A615M Plain steel, unfinished.

G. Cement: ASTM C150 Normal Type Portland type, gray color.

H. Fine and Coarse Aggregates: ASTM C33.

I. Water: Clean and not detrimental to concrete.

J. Admixtures: ASTM C260.

2.2 CONCRETE MIX

A. Mix and deliver concrete as specified by Section 501 of the Standard Specifications for Highway Construction (Edition of 2003) as published by the Arkansas State Highway and Transportation Department.

B. Furnish concrete for each of the following characteristics:
1. Compressive Strength at 28 days: 3500 psi
2. Slump: 5 inches maximum.
3. Air Entrainment: 5 percent.

2.3 DETECTABLE WARNING PAVERS

A. Equal to Tile Tech Detectable Warning Pavers measuring 2" X 12" X 12" in contrating standard color to be selected. 8,000psi density. Uniformly distributed pigment throughout tile thickness. ADA compliant.

B. Installation:
1. Thin set mortar over 4" concrete slab.
2. Sweep joints with sand after set.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Verify gradients and elevations of base.

B. Verify scarified and compacted subgrade is ready to support paving and imposed loads.

C. Moisten substrate to minimize absorption of water from fresh concrete.

3.2 FORMING

A. Place and secure forms to correct location, dimension, and profile.

B. Place joint filler in joints, vertical in position, in straight lines. Secure to formwork.

C. Place expansion joints at 15 foot intervals or as indicated on Drawings. Align joints.

D. Place joint filler between paving components and other appurtenances.

E. Place control joints at 5 foot intervals or as indicated on Drawings. Align joints.

3.3 REINFORCEMENT

A. Place reinforcement at mid-height of slabs-on-grade.

B. Interrupt reinforcement at expansion joints. Lubricate one-half of dowel to prevent bond to concrete on one side of joint.

C. Place dowels to achieve pavement and curb alignment.

3.4 PLACING CONCRETE

A. Place concrete as specified by Section 501 of the Standard Specifications for Highway Construction (Edition of 2003) as published by the Arkansas State Highway and Transportation Department.

B. Do not disturb reinforcement or formwork components during concrete placement.

C. Place concrete continuously between predetermined joints.

3.5 SCHEDULE

A. Walks, light duty areas: 4 inches of concrete over 4 inches of compacted base complying with recommendations of geotechnical investigation engineering report where available. If there is a discrepancy comply with the greater depth of materials.

B. Drives, heavy duty areas: 6 inches of concrete over 4 inches of compacted base complying with recommendations of geotechnical investigation engineering report where available. If there is a discrepancy comply with the greater depth of materials.

C. Detectable warning pavers: to be integrated at ALL intersections with vehicular traffic in which the traffic lane is the same level as the adjoining walk. Detectable warning is to begin 6" from the face of the nearest curb line and extend onto the walk surface a minimum of 24" in the direction of travel for the full width of the flush intersection.

3.6 FINISHING

A. Sidewalk Surfaces: Light broom, radiused and trowel joint edges.

B. Curbs and Gutters: Light broom.

C. Ramps: Dimpled pattern and color to comply with ADA standards. See detectable warnings for required warnings.

D. Saw cut control joints at 5'-0" on center along linear curbing.

E. Saw cut control joints not to exceed 5'-0" on center across walks or as required to establish squarely proportioned slabs.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 02811

LANDSCAPE IRRIGATION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Pipe and fittings.
   2. Valves.
   3. Outlets and accessories.
   4. Control system.

1.2 SYSTEM DESCRIPTION

A. Electric solenoid controlled underground irrigation system, with low point self drain.

1.3 SUBMITTALS

A. Shop Drawings: Indicate piping layout to water source, location of sleeves under pavement, location and coverage of sprinkler heads, controller, plant and landscaping features, site structures, schedule of fittings to be used.

B. Product Data: Submit component and control system and wiring diagrams.

C. Samples: Submit one outlet of each type, with housing. Accepted samples may be used in Work.

1.4 MAINTENANCE SERVICE

A. Furnish maintenance services on equipment and accessory items for one year from Date of Substantial Completion.

B. Include system seasonal start-up and shut-down, outlet adjustment, control testing, and replacement of worn or damaged components.

PART 2 PRODUCTS

2.1 LANDSCAPE IRRIGATION

A. Manufacturers:
   1. Rainbird.
   2. Toro.
   3. Orbit.
   4. Substitutions: Permitted.

2.2 MATERIALS

A. Pipe: PVC in accordance with ASTM D2241; 200 psi pressure rated upstream from controls, 160 psi downstream; solvent-weld sockets.

B. Fittings: Type and style of connection to match pipe.

C. Solvent Cement: ASTM D2564 for PVC pipe and fittings.

D. Outlets: Brass or bronze construction.
1. Rotary Type Sprinkler Head: Pop-up type with screens; fully adjustable for flow and pressure; size as necessary and indicated on submittal Drawings; with letter or symbol designating degree of arc and arrow indicating center of spray pattern.
2. Spray Type Sprinkler Head: Pop-Up head with appropriate pattern.
3. Emitter: Adjustable outlet, non-clogging, with two trickle tubes,
4. Bubbler: Adjustable outlet,

2.3 VALVES

A. Gate Valves: Bronze construction, non-rising stem, inside screw with threaded ends.

B. Backflow Preventers: see plumbing.

2.4 CONTROLS

A. Controller: Automatic controller, motor driven timer with relay switches, temporary override feature to bypass cycle for inclement weather, timer for 6 station system, programmable for 7 days in quarter hour increments, with automatic start and shutdown.

B. Controller Housing: Weatherproof, watertight, with lockable access door.

C. Electric solenoid Valve: Normally closed, to control wiring, including required fittings and accessories.

D. Wire: Color coded. copper conductor, direct burial type.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Verify field conditions and location of existing utilities are acceptable.

B. Piping layout indicated is diagrammatic only. Route piping to avoid plants and structures.

3.2 INSTALLATION

A. Trench in accordance with Section 02300.

B. Install pipe, valves, controls, and outlets.

C. Slope pipe to drain.

3.3 BACKFILLING

A. Prior to backfilling, test system for leakage for whole system to maintain 100 psi pressure for one hour. System is acceptable when no leakage or loss of pressure occurs during test period.

B. Install 3 inch sand cover over piping. Backfill trench and compact to subgrade elevation as specified in Section 02300.

3.4 SCHEDULES

A. Perimeter of Grassed Areas: Pop-Up half circle heads.

B. Corners of Grassed Areas: Pop-Up quarter circle heads.

C. Within Grassed Areas: Pop-Up full circle heads.

D. Planters: Fixed square pattern head, and one emitter for each 4 sq ft of planter area.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 02900

PLANTING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Preparation of soil.
2. Placement of plant life.
3. Sodding

1.2 SUBMITTALS

A. Product Data: Submit list of plant material sources, data for fertilizer and other accessories.

B. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.3 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Include pruning objectives, types and methods; types, application frequency, and recommended coverage of fertilizer.

1.4 QUALIFICATIONS

A. Nursery: Company specializing in growing and cultivating plant life specified in this section.

B. Sod Producer: Company specializing in sod production and harvesting.

1.5 WARRANTY

A. Furnish one-year warranty including one continuous growing season including coverage of plants from death or unhealthy conditions.

B. Replacements: Plants of same size and species as specified, planted in next growing season, with new warranty beginning on date of replacement.

1.6 MAINTENANCE SERVICE

A. Maintain sodded areas plant life immediately after placement until plants are well established and exhibit vigorous growing condition.

PART 2 PRODUCTS

2.1 GRASS

A. Sod: ASPA Approved, Field grown; cultivated grass sod; with strong fibrous root system.
   1. Sod: Species and size as shown on drawings, grown in climatic conditions similar to those in locality of the Work.
   2. Machine cut sod with minimum 1/2 inch and maximum 1 inch topsoil base.

2.2 TREES, PLANTS, AND GROUND COVER

A. Trees: Species and size as shown on drawings, grown in climatic conditions similar to those in locality of the Work.

B. Shrubs: Species and size as shown on drawings, grown in climatic conditions similar to those in locality of the Work.

2.3 SOIL AND SOIL MODIFICATION MATERIALS

A. Topsoil: Fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth, free of subsoil, clay or impurities, plants, weeds and roots.

2.4 ACCESSORIES

A. Anti Erosion Mulching Material: As specified here unless shown in drawings then drawing specification governs. Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.

B. Decorative Mulching Material: As specified here unless shown in drawings then drawing specification governs. Cypress chips, free from weeds, foreign mater detrimental to plant life, and dry. Spread decorative mulch to a minimum depth of 4 inches. Spread smooth.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Prepare subsoil to eliminate uneven areas. Maintain profiles and contours. Make changes in grade gradual. Blend slopes into level areas.

B. Scarify subsoil to minimum depth of 3 inches.

3.2 PLACING TOPSOIL

A. Spread topsoil to minimum depth of 3 inches. Rake smooth.

B. Grade topsoil to eliminate rough, low or soft areas. Slope for positive drainage.

C. Place topsoil into pits and beds intended for plant root balls to minimum thickness of 6 inches.

3.3 PLANTING

A. Set plants in pits or beds partly filled with prepared topsoil mixture. Backfill soil mixture.

B. Saturate soil with water when pit or bed is half full of topsoil and again when full.

C. Surround all plantings of shrubs and trees with decorative mulch a minimum of 2'-0" radius from center of plant. Surround plants in planting beds such that decorative mulch fills bed entirely.

D. Place sod in freshly prepared topsoil only. Place as recommended by manufacturer/grower. Water immediately upon placement or as recommended by manufacturer/grower.

E. All plantings are to be located as indicated in Section 02901 Planting Schedule or as indicated in the drawings.

3.4 MAINTENANCE

A. Mow grass at regular intervals to maintain maximum height of 6 inches. Do not cut more than 1/3 of grass blade at each mowing.

B. Water to prevent grass and soil from drying out.

C. Control growth of weeds.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 03050

BASIC CONCRETE MATERIALS AND METHODS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Formwork.
   2. Reinforcement.
   3. Accessories.
   4. Cast-in place concrete.
   5. Finishing and curing.

1.2 SUBMITTALS

A. Product Data: Indicate admixtures.

B. Design Data: Submit mix designs.

1.3 QUALITY ASSURANCE

A. Contractor to appoint, employ, and pay for inspection services of an independent firm to verify the strength capacity of concrete provided by the supplier and/ or placed by the contractor.

B. Testing of concrete is to be done for the first load of each type of concrete to be place each day and at least once for each 40 cubic yards of concrete supplied each day.

C. Test cylinders are to be taken in compliance with ASTM C31 standards. Cylinder samples are to be capacity tested at 7 days, 28 days, with one cylinder retained for later testing if required.

D. Slump testing is required to be performed to verify delivered concrete slump is within specified parameters. Each independent truck load of concrete is required to be slump tested prior to placement. If any load of concrete exceeds its specified slump upon delivery to the jobsite, it is to be discarded and may NOT return for use in the work.

E. Construct and erect concrete formwork in accordance with ACI 301.

F. Perform concrete reinforcing work in accordance with ACI 301.

G. Perform cast-in-place concrete work in accordance with ACI 301.

PART 2 PRODUCTS

2.1 FORM MATERIALS AND ACCESSORIES

A. Form Materials: At discretion of Contractor.

B. Form Release Agent: Colorless mineral oil not capable of staining concrete or impairing natural bonding characteristics of coating intended for use on concrete.

C. Formed Construction Joints for Slab-on-Grade: Galvanized steel, tongue and groove type profile, knockout holes to receive doweling.

D. Slab Edge Joint Filler: ASTM D1751, Premolded asphaltic board, 1/2 inch thick.

2.2 REINFORCEMENT MATERIALS

A. Reinforcing Steel: ASTM A615/A615M, 60 ksi yield grade; deformed billet steel bars, plain finish.

B. Welded Steel Wire Fabric: ASTM A185 Plain type, in flat sheets, plain finish.

C. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for support of reinforcing; plastic tipped or non-corroding for supports in slabs forming finished ceilings or where supports are exposed to weather.

D. Fabricate concrete reinforcing in accordance with ACI 315.

2.3 CONCRETE MATERIALS

A. Cement: ASTM C150, Normal-Type I Portland type.

B. Fine and Coarse Aggregates: ASTM C33. C330, lightweight.

C. Water: Clean and not detrimental to concrete.

D. Air Entrainment Admixture: ASTM C260.

E. Bonding Agent: Polymer resin emulsion.

F. Non-shrink Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.

2.4 CONCRETE MIX

A. Mix and deliver concrete in accordance with ASTM C94, Option A.

B. Furnish concrete of the following strength:
1. Compressive strength 3000 psi (28 day) or as specified or detailed for particular applications.

2. Slump 2 to 6 inches

C. Select admixture proportions for normal weight concrete in accordance with ACI 301 Method 1.

D. Add air entraining agent to concrete mix for concrete work exposed to exterior.

PART 3 EXECUTION

3.1 FORMWORK ERECTION

A. Erect formwork, shoring and bracing to achieve design requirements.

B. Camber slabs and framing to achieve ACI 301 tolerances.

C. Provide bracing to ensure stability of formwork.

D. Apply form release agent to formwork prior to placing form accessories and reinforcement.

E. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings affected by agent.

F. Clean forms as erection proceeds, to remove foreign matter.

3.2 INSERTS, EMBEDDED COMPONENTS, AND OPENINGS

A. Provide formed openings where required for work to be embedded in and passing through concrete members.

B. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.

C. Install concrete accessories straight, level, and plumb.

D. Place formed construction joint device in floor slab pattern pouring sequence.

E. Place joint filler at perimeter of penetrations, and isolation joints.

3.3 REINFORCEMENT PLACEMENT

A. Place reinforcement, supported and secured against displacement.

B. Ensure reinforcing is clean, free of loose scale, dirt, or other foreign coatings.

3.4 PLACING CONCRETE

A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent.

B. Install vapor retarder under interior slabs on grade in accordance with ASTM E1643. Lap joints minimum 6 inches and seal watertight.

C. Repair damaged vapor retarder with vapor retarder material, lap over damaged areas minimum 6 inches and seal watertight.

D. Place concrete continuously between predetermined expansion, control and construction joints. Do not break or interrupt successive pours creating cold joints.

E. Place floor slabs in saw cut pattern indicated.

F. Screed floors slabs-on-grade level.

3.5 FORM REMOVAL

A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.

B. Remove formwork progressively and in accordance with code requirements.

3.6 FLOOR FINISHING

A. Finish concrete floor surfaces in accordance with ACI 301.

B. Uniformly spread, screed, and float concrete.

C. Steel trowel surfaces receiving carpeting resilient flooring seamless flooring thin set ceramic tile or remaining exposed to view in finished construction.

D. Maintain surface flatness, with maximum variation of 1/4 inch in 10 ft.

E. In areas with floor drains, maintain floor level at walls and slope surfaces uniformly to drains.

3.7 CURING

A. Immediately after placement, protect concrete from premature drying.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete for not less than 7 days.

3.8 DEFECTIVE CONCRETE

A. Modify or replace concrete not conforming to required lines, details and elevations, as directed by Architect/Engineer.

END OF SECTION

SECTION 04065

MASONRY MORTAR AND GROUT

PART 1 GENERAL

1.1 SUMMARY

A. Section includes mortar and grout for masonry.

1.2 SUBMITTALS

A. Samples: Submit two samples of mortar, 3/8"x4" inch in size illustrating mortar color and color range.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with TMS MSJC Code and TMS MSJC Specification.

1.4 ENVIRONMENTAL REQUIREMENTS

A. Hot and Cold Weather Requirements: MSJC Specification.

PART 2 PRODUCTS

2.1 MORTAR AND MASONRY GROUT

A. Manufacturers:
1. Blue Circle Cement
2. Citadel Cement
3. Lehigh Portland Cement
4. The Quikrete Companies
5. Solomon Colors
6. Southern Grouts and Mortars
7. Substitutions: Permitted.

2.2 COMPONENTS

A. Masonry Cement: ASTM C91, Type S, gray color.

B. Mortar Aggregate: ASTM C144, standard masonry type.

C. Hydrated Lime: ASTM C207, Type S.

D. Mortar Color: Mineral oxide pigment; color as selected; manufactured by Solomon Colors or approved equal.

E. Grout Aggregate: ASTM C404, fine.

F. Water: Clean and potable.

G. Bonding Agent: Latex type.

H. Calcium chloride is not permitted.

2.3 MIXES

A. Mortar Mixes:
1. Mortar for Structural Masonry: ASTM C270, Type S using Proportion specification.
2. Mortar for Non-Structural Masonry: ASTM C270, Type S using Proportion specification.
3. Mortar For Glass Unit Masonry: ASTM C270, Type O using Property specification.
4. Pointing Mortar: ASTM C270, Type N, using Proportion specification.
5. Stain Resistant Pointing Mortar: One part Portland cement, 1/8 part hydrated lime, and two parts graded (80 mesh) aggregate, proportioned by volume. Add aluminum tristearate, calcium stearate, or ammonium stearate equal to 2 percent of Portland cement by weight.
6. Mortar For Firebrick Masonry: Fireclay type.

B. Mortar Mixing:
1. Thoroughly mix mortar ingredients in accordance with ASTM C270 in quantities needed for immediate use.
2. Add mortar color and admixtures.

C. Grout Mixes:
1. Bond Beams Lintels Engineered Masonry: 3,000 psi strength at 28 days; 8-10 inches slump mixed in accordance with ASTM C476 Fine grout.

D. Grout Mixing:
1. Thoroughly mix grout ingredients in quantities needed for immediate use in accordance with ASTM C476.
2. Do not use anti-freeze compounds to lower freezing point of grout.

PART 3 EXECUTION

3.1 PREPARATION

A. Apply bonding agent to existing concrete surfaces.

3.2 INSTALLATION

A. Install mortar and grout in accordance with TMS MSJC Specification.

3.3 SCHEDULES

A. Exterior Cavity Wall: Brick masonry with Type S mortar with Type N pointing mortar.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 04810

UNIT MASONRY ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

A. Section includes brick units, reinforcement, anchorage, and accessories.

1.2 SUBMITTALS

A. Product Data: Submit decorative masonry units and fabricated wire reinforcement wall ties and other accessories.

B. Samples: Submit four samples of face brick units to illustrate color, texture and extremes of color range.

1.3 ENVIRONMENTAL REQUIREMENTS

A. Hot and Cold Weather Requirements: MSJC Specification.

PART 2 PRODUCTS

2.1 UNIT MASONRY ASSEMBLIES

A. Manufacturers:
1. Acme Brick Co.
2. Substitutions: Permitted.

2.2 COMPONENTS

A. Face Brick: Acme – as scheduled in drawings or if not specified in drawings then as selected from manufacturers standard units.

B. Specialty Units: Acme – as scheduled in drawings.

2.3 ACCESSORIES

A. Single Wythe Joint Reinforcement: Truss type; steel wire, hot dip galvanized to ASTM A641/A641M Class 3 after fabrication.

B. Multiple Wythe Joint Reinforcement: Truss type; without moisture drip; steel wire, hot dip galvanized to ASTM A641/A641M Class 3 after fabrication.

C. Wall Ties: Corrugated formed sheet metal, 18 gage thick, hot dip galvanized to ASTM A153/A153M B2 finish.

D. Mortar (colored): Type "S" for all applications. Color to be equal to SGS Solomon Colors standard color to be selected.

E. Plastic Flashings: Sheet neoprene polyethylene; 20 mil thick.

F. Preformed Control Joints: Neoprene material. Furnish with corner and tee accessories, cement fused joints.

G. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding.

H. Building Paper: ASTM D226, No. 15 asphalt saturated felt.

I. Weeps: Open head joints at 48" on center maximum.

J. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials, recommended by masonry unit manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify field conditions are acceptable and are ready to receive Work.

3.2 PREPARATION

A. Coordinate placement of anchors supplied by other sections.

3.3 INSTALLATION

A. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

B. Coursing of Concrete and Brick Units:
1. Bond: Running for wall and columns.
2. Mortar Joints: Concave.

C. Placing And Bonding:
1. Isolate masonry partitions from vertical structural framing members with movement joint.
2. Isolate top of masonry from horizontal structural framing members and slabs or decks with compressible joint filler.

D. Weeps and Vents: Install weeps and vents in outer wythe at 48 inches oc horizontally above through-wall flashing, above shelf angles and lintels, and at bottom of walls.

E. Cavity Wall: Do not permit mortar to drop or accumulate into cavity air space or to plug weep holes.

F. Joint Reinforcement And Anchorage - Single Wythe Masonry:
1. Install horizontal joint reinforcement 16 inches oc. Place joint reinforcement continuous in first and second joint below top of walls.
2. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
3. Reinforce stack bonded unit joint corners and intersections with strap anchors 16 inches oc.

G. Joint Reinforcement And Anchorage - Masonry Veneer:
1. Install horizontal joint reinforcement 15 inches oc. Place joint reinforcement continuous in first and second joint below top of walls.
2. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
3. Masonry Backing: Embed wall ties for bonding veneer at maximum 16 inches oc vertically and 36 inches oc horizontally. Place at maximum 3 inches oc each way around perimeter of openings, within 12 inches of openings
4. Stud Framed Backing: Secure wall ties and embed into masonry veneer at maximum 16 inches oc vertically and 36 inches oc horizontally. Place at maximum 3 inches oc each way around perimeter of openings, within 12 inches of openings
5. Reinforce stack bonded unit joint corners and intersections with strap anchors 16 inches oc.

H. Masonry Flashings:
1. Extend flashings horizontally through outer wythe above ledge or shelf angles and lintels, at bottom of walls, and turn down on outside face to form drip.
2. Turn flashing up minimum 8 inches and seal to sheathing over steel stud framed back-up.
3. Lap end joints and seal watertight.
4. Turn flashing, fold, and seal at corners, bends, and interruptions.

I. Control And Expansion Joints:
1. Do not continue horizontal joint reinforcement through control and expansion joints.
2. Form control joint with sheet building paper bond breaker fitted to one side of hollow contour end of block unit. Fill resultant core with grout fill. Rake joint at exposed unit faces for placement of backer rod and sealant.

J. Built-In Work:
1. As work progresses, install built-in metal door and glazed frames fabricated metal frames anchor bolts plates and other items to be built in the work furnished by other sections.
2. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout or mortar. Fill adjacent masonry cores with grout minimum 8 inches from framed openings.

K. Cutting And Fitting:
1. Cut and fit for chases, pipes, conduit, sleeves, and grounds. Coordinate with other sections of work to provide correct size, shape, and location.

L. CLEANING
1. Remove excess mortar and mortar smears as work progresses.
2. Clean soiled surfaces with cleaning solution.

M. TOLERANCES
1. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
2. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

END OF SECTION

SECTION 05120

STRUCTURAL STEEL

PART 1 GENERAL

1.1 SUMMARY

A. Section includes structural steel framing members, lintels, base plates, plates, grouting under base plates.

B. All specifications this section must be coordinated with requirements listed on the structural sheets in the drawing set. In the event of a conflict, drawing specifications supersedes these specification requirements.

1.2 SUBMITTALS

A. Shop Drawings: Indicate sizes, spacing, and locations of structural members, openings, connections, cambers, loads, and welded connections.

1.3 QUALITY ASSURANCE

A. Fabricate structural steel members in accordance with AISC - Specification for Design, Fabrication and Erection of Structural Steel for Buildings.

B. High Strength Bolting: In accordance with AISC - Specification for Structural Joints Using ASTM A325 or ASTM A490 Bolts.

C. Welding: In accordance with AWS D1.1.

1.4 QUALIFICATIONS

A. Design structural steel under direct supervision of Professional Engineer experienced in design of this Work and licensed in State of Arkansas.

B. Fabricator Qualifications: Fabricator with a minimum of 10 years documentable experience in similar type and scope project.

PART 2 PRODUCTS

2.1 STRUCTURAL STEEL

A. Structural Steel Members: ASTM A36/A36M.

B. Structural Tubing: ASTM A500, Grade B.

C. Pipe: ASTM A53, Grade B.

D. Bolts, Nuts, and Washers: ASTM A325.

E. Anchor Bolts: ASTM A307.

F. Welding Materials: AWS D1.1; type required for materials being welded.

G. Grout: Non-shrink type, pre-mixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing additives, capable of developing minimum compressive strength of 7,000 psi at 28 days.

H. Shop and Touch-Up Primer: SSPC 15, Type 1, red oxide.

2.2 FABRICATION

A. Continuously seal joined members by continuous welds. Grind exposed welds smooth.

2.3 FINISH

A. Prepare structural component surfaces in accordance with SSPC SP 2.

B. Shop prime structural steel members. Do not prime surfaces being field welded, or to be in contact with concrete.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify field conditions are acceptable and are ready to receive work.

3.2 ERECTION

A. Allow for erection loads. Install temporary bracing to maintain framing in alignment until completion of erection and installation of permanent bridging and bracing.

B. Field weld components indicated on shop drawings.

C. Do not field cut or alter structural members without approval of Architect/Engineer.

D. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.

E. Grout under base plates as necessary.

3.3 FIELD QUALITY CONTROL

A. Field inspection of members, connections, welds and tightening of high strength bolts in-slip critical connections.

END OF SECTION

SECTION 05400

COLD-FORMED METAL FRAMING

PART 1 GENERAL

1.1 SUMMARY

A. Section includes load bearing formed steel stud exterior wall, interior wall, framing and formed steel joist, purlin, slotted channel, and framing and bridging.

1.2 QUALITY ASSURANCE

A. Perform Work in accordance with AISI SG-973 - Cold-Formed Steel Design Manual.

PART 2 PRODUCTS

2.1 COLD FORMED METAL FRAMING

A. Manufacturers:
   1. Clark Steel Framing Systems.
   2. Harrisson Manufacturing Co.
   3. Marino\Ware.
   4. Unimast Incorporate.
   5. Substitutions: Permitted.

B. Studs: ASTM C955, formed to channel shape, punched web as scheduled.

C. Track and Headers: Formed steel; channel shaped; same width as studs, tight fit; solid web.

2.2 ACCESSORIES

A. Bracing, Furring, Bridging, Plates, Gussets, Clips: Formed sheet steel, same finish as framing members.

B. Screws: self drilling, self tapping.

C. Anchorage Devices: Power actuated.

D. Welding: In accordance with AWS D1.1 and AWS D1.3.

E. Primer: Touch-up for galvanized or primed surfaces.

2.3 FABRICATION

A. Fabricate assemblies of sizes and profiles required; with framing members fitted, reinforced and braced.

B. Fit and assemble in largest practical sections for delivery to site, ready for installation.

2.4 FINISHES

A. Studs and Accessories: Galvanize to ASTM A653 G60 coating class.

B. Joists, and Accessories: Galvanize to ASTM A653 G60 coating class.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify building framing components are ready to receive work.

3.2 ERECTION OF STUDS

A. Align floor and ceiling tracks; locate to partition layout. Secure in place with fasteners at maximum 24 inches oc. Coordinate installation of sealant with floor tracks.

B. Place studs at 16 inches oc; not more than 2 inches from abutting walls and at each side of openings. Connect studs to tracks using fastener method.

C. Construct corners using minimum three studs. Double stud wall openings, door and window jambs.

D. Erect load bearing studs one piece full length. Splicing of studs is not permitted.

E. Allow for deflection, directly below horizontal building framing for non-load bearing framing.

F. Attach cross studs to studs for attachment of fixtures anchored to walls and for attachment of mechanical and electrical items within walls.

G. Touch-up field welds and damaged prefinished surfaces with primer.

3.3 ERECTION OF JOISTS,

A. Make provisions for erection stresses. Provide temporary alignment and bracing.

B. Place joists as noted on drawings not more than 2 inches from abutting walls. Connect joists to supports using fastener method.

C. Set components parallel and level, with lateral bracing and bridging.

D. Locate component end bearing directly over load bearing studs or provide load distributing member to top of stud track.

E. Provide web stiffeners at reaction points.

F. Touch-up field welds and damaged prefinished surfaces with primer.

3.4 TOLERANCES

A. Maximum Variation from Indicated Position: 1/8 inch.

B. Maximum Variation of Member from Plane: 1/8 inch.

3.5 SCHEDULE: UNLESS OTHERWISE NOTED

A. Walls up to 12'-0" unbraced height (362S162-43) 3 5/8" x 1 5/8" with 1/2" return lip, 18 gage, at 16" O.C.

B. Walls 12'-0" to 20'-0" unbraced height. Use (600S162-54) 16 gage studs measuring 6" x 1 5/8" with 9/16" return lip at 16" O.C. – Brace as necessary.

C. Walls 20'-0" unbraced height and greater: Use (800S200-54)16 gage studs measuring 8" x 1 5/8" with 9/16" return lip at 16" O.C. –Provide continuous lateral bracing at 24'-0" O.C. typical.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 05500

METAL FABRICATIONS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes shop fabricated ferrous metal items, prime painted; steel stair frame of structural sections, with pan to receive concrete fill stair treads and landings; and balusters and handrailing.

1.2 SYSTEM DESCRIPTION

A. Design stair assembly to support live load of 100 lb/sq ft with deflection of stringer or landing framing not to exceed 1/240 of span.

B. Design railing, wall rails, and attachments to resist lateral force of 200 lbs at any point without damage or permanent set.

1.3 SUBMITTALS

A. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
   1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.

1.4 QUALITY ASSURANCE

A. Prepare Shop Drawings under direct supervision of Professional Engineer experienced in design of this Work and licensed in State of Arkansas

1.5 COMPONENTS

A. Steel Sections: ASTM A36/A36M.

B. Steel Plate: ASTM A283/A283M.

C. Steel Tubing: ASTM A500, Grade B.

D. Steel Pipe: ASTM A53, Grade B, Schedule 40.

E. Sheet Steel: ASTM A653/A653M, Grade 33 Structural Quality with galvanized coating.

F. Bolts, Nuts, and Washers: ASTM A325.

G. Handrail Fittings: Elbows, T-shapes, wall brackets, escutcheons; machined steel.

1.6 ACCESSORIES

A. Welding Materials: AWS D1.1.

B. Shop and Touch-Up Primer: SSPC 15, Type 1, red oxide.

C. Concrete and Reinforcement for Treads and Landings: Mesh type, Portland cement, as specified in Section 03050.

1.7 FABRICATION

A. General:
1. Fit and shop assemble items in largest practical sections, for delivery to site.
2. Continuously seal joined members by continuous welds.
3. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
4. Exposed Mechanical Fastenings: Flush countersunk screws or bolts, consistent with design of component.
5. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication.
6. Accurately form components required for anchorage of stairs landings and railings to each other and to building structure.

B. Pan Stairs And Landings:
1. Fabricate stairs and landings with closed risers and treads of metal pan construction, ready to receive concrete unless otherwise noted.
2. Form treads, landings, and risers with sheet steel stock.
3. Secure tread pans to stringers with clip angles; welded in place.
4. Form stringers with rolled steel rectangular hollow sections.
5. Prime paint components.

C. Handrails:
1. Fit and shop assemble components in largest practical sizes, for delivery to site.
2. Grind exposed joints flush and smooth with adjacent finish surface.
3. Accurately form components to suit stairs and landings, to each other and to building structure.
4. Fabricate railing to comply with all applicable building codes.
5. Fabricate railing to comply with all applicable Americans with Disabilities Act standards, including but not limited to stair-rail extensions.
6. All handrails are to return to adjacent wall, or guardrail.
7. Form balusters with 2 inch diameter steel sections, welded to stringers unless otherwise noted.

1.8 FINISHES

A. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.

B. Shop prime items with one coat. Do not prime surfaces in direct contact with concrete or where field welding is required.

C. ALL Exterior components are to be galvanized.

PART 2 EXECUTION

2.1 EXAMINATION

A. Verify field conditions are acceptable and are ready to receive work.

2.2 PREPARATION

A. Make provisions for erection loads with temporary bracing. Keep work in alignment.

B. Supply items required to be cast into concrete or embedded in masonry with setting templates, to appropriate sections.

2.3 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Provide for erection loads and provide temporary bracing to maintain indicated alignment until completion of erection and installation of permanent attachments.

C. Field weld components indicated on shop drawings. Perform field welding in accordance with AWS D1.1.

D. Obtain approval prior to site cutting.

E. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.

2.4 SCHEDULES

A. This Schedule is list of principal items only. Refer to Drawing details for items not specifically scheduled.

B. Ledge and Shelf Angles, Channels and Plates Not Attached to Structural Framing: For support of metal decking joists masonry; prime paint finish at interior locations, galvanized finish at exterior locations.

C. Lintels: As detailed; prime paint finish at interior locations, galvanized finish at exterior locations.

D. Door Frames for Overhead Door Openings and Wall Openings: Angle sections; prime paint finish.

E. Stairs: Pan stairs and landings, primed finish at interior locations, galvanized finish at exterior locations..

END OF SECTION

SECTION 06200

FINISH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

A. Section includes finish carpentry items, shop prefabricated casework, hardware, and attachment accessories.

1.2 SUBMITTALS

A. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, finishes, and accessories.

B. Samples: Submit two 6 x 12 inch size samples illustrating wood grain and specified finish.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with AWI Quality Standards, Custom Grade.

PART 2 PRODUCTS

2.1 COMPONENTS

A. Painted Hardwood Lumber: Graded in accordance with AWI II; Poplar species unless otherwise specified, maximum moisture content of 8 percent; with plain sawn grain, of quality suitable for painted finish.

B. Stained Hardwood Lumber: Graded in accordance with AWI II; Oak species unless otherwise specified, maximum moisture content of 8 percent; with plain sawn grain, of quality suitable for stained finish.

C. Structural Softwood Plywood: PS 1 Grade C-D unless otherwise specified; Graded in accordance with AWI II lumber core; rotary cut.

D. Exposed Softwood Plywood for paint: PS 1 Grade B-C unless otherwise specified; Graded in accordance with AWI II lumber core; rotary cut.

E. Hardwood Plywood for stain: HPVA HP-1 Grade A-C; Graded in accordance with AWI II Custom veneer lumber core, type of glue recommended for application; Oak face species unless otherwise specified, rotary cut.

F. Wood Particleboard: AWI standard, composed of wood chips, sawdust, or flakes of medium density, made with water resistant adhesive; of grade to suit application; sanded faces.

G. Hardboard: ANSI A135.4; Pressed wood fiber with resin binder; standard grade, 1/4 inch thick, smooth one side.

H. Plastic Laminate: AWI; 0.040 inch Post Forming 0.050 inch General Purpose quality; color as selected from manufacturers standard colors or as specified in drawings, pattern as selected from manufacturers standard colors or as specified in drawings, and surface texture as selected; manufacturer as specified in drawings, if not specified then equal to Wilsonart, Formica, or Nevamar.

2.2 ACCESSORIES

A. Fasteners: Size and type to suit application; Electro galvanized steel for exterior, high humidity and treated wood locations, plain finish elsewhere.

B. Contact Adhesives: Solvent Release type.

C. Wall Adhesive: Cartridge type, compatible with wall substrate, capable of achieving durable bond.

D. Primer: Alkyd primer sealer type.

E. Hardware:
1. All drawers and doors are to receive pulls and hinges. Number of hinges required as suitable to satisfy manufacturers standards and recommendations. All drawers are to receive slides.
2. Placement of pulls to be coordinated with architect if not specified in drawings.
3. Adjustable shelf standards set plumb and true to allow for 1 inch adjustments.
4. Hardware Schedule: As specified in drawings or if not specified then as Manufactured by Hafele or approved equal, as follows:
   a. Hinges: 343.29 style, Nickel finish-self closing.
   b. Pulls: 116.05.020 style, light bronze anodized finish.
   c. Drawer Slides: 420.42.055 style, full extension (coordinate size requirement), 68 lbs, stainless steel finish.
   d. Shelf supports: 282.11.154 style, bronzed finish.

2.3 FABRICATION

A. Fabricate to AWI Custom standards.

2.4 SHOP FINISHING

A. Sand work smooth and set exposed nails and screws.

B. Apply wood filler in exposed nail and screw indentations.

C. On items to receive transparent finishes, use wood filler matching surrounding surfaces and of types recommended for applied finishes.

D. Natural finish: surfaces as specified in drawings.
1. Stain, seal, and varnish exposed to view surfaces. Brush apply only.
2. Seal internal surfaces and semi-concealed surfaces. Brush apply only.

E. Seal surfaces in contact with cementitious materials.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify field conditions are acceptable and are ready to receive work.

3.2 PREPARATION

A. Prime paint surfaces of items or assemblies in contact with cementitious materials, before installation.

3.3 INSTALLATION

A. Install work in accordance with AWI Custom quality standard.

B. Set and secure materials and components in place, plumb and level.

C. Cover exposed edges of shelving with 1 x 2 inch hardwood edging unless otherwise detailed or specified.

D. Apply plastic laminate finishes with adhesive over entire surface where specified.

E. Install hardware as required and scheduled.

F. Preparation For Finish:
1. Sand work smooth and set exposed fasteners. Apply wood filler in exposed fastener indentations.
2. Site Finishing: Refer to Section 09900.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 07210

BUILDING INSULATION

PART 1 GENERAL

1.1 SUMMARY

A. Section includes board thermal insulation at perimeter foundation wall; batt thermal insulation and vapor retarder in exterior wall and blown insulation at ceiling construction.

1.2 SYSTEM DESCRIPTION

A. System performance to provide continuity of thermal barrier at building enclosure elements.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's product data including thermal performance of materials.

PART 2 PRODUCTS

2.1 BUILDING INSULATION

A. Manufacturers:
1. Murus – insulated sandwich panel structural decking.
2. EPS - Molded Polystyrene Insulation.
3. W.R. Grace Construction Products - Molded Polystyrene Insulation.
4. DiversiFoam Products - Extruded-Polystyrene Insulation.
5. Dow Chemical - Extruded-Polystyrene Insulation.
6. Tenneco Foam Products - Extruded-Polystyrene Insulation.
7. UC Industries/Owens Corning - Extruded-Polystyrene Insulation.
8. Celotex - Polyisocyanurate Insulation.
9. NRG Barriers/Johns Manville - Polyisocyanurate Insulation.
10. Rmax - Polyisocyanurate Insulation.
11. Pittsburgh Corning - Cellular Glass Insulation.
12. Certain Teed - Glass Fiber Insulation.
13. Johns Manville, Insulation Group - Glass Fiber Insulation.
14. Knauf Fiber Glass Gmbh - Glass Fiber Insulation.
15. Owens-Corning Fiberglas - Glass Fiber Insulation.
16. Substitutions: Permitted.

2.2 COMPONENTS

A. Extruded Polystyrene Insulation: ASTM C578 Type VI, cellular type, with the following characteristics:

1. Thermal Resistance: R-8.
2. Water Absorption: In accordance with ASTM D2842 0.3 percent by volume maximum.
3. Compressive Strength: Minimum 25 psi
4. Board Edges: Square edges.
5. Flame/Smoke Properties: in accordance with NFPA 255.

B. Batt Insulation: ASTM C665, preformed glass fiber, conforming to the following:
1. Thermal Resistance: minimum R 13 at exterior walls as necessary.
2. Thermal Resistance: minimum R 19 above lay-in ceiling.
3. Integrated kraft paper vapor barrier.
4. Flame/Smoke Properties: in accordance with NFPA 255.

C. Sound Batt Insulation: ASTM C423, preformed glass fiber, Sound Attenuation Batts, full wall cavity thickness, unfaced, equal to Owens Corning.

D. Metal Building above slab insulation package to be specified in metal building specifications if applicable.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify substrate, adjacent materials, and insulation boards are dry and ready to receive insulation.

3.2 INSTALLATION

A. Foundation Perimeter if applicable - Extruded Polystyrene Insulation:
1. Adhere 24 inch wide vertical strip of rigid insulation sheet over substrate with beads of Type 1 adhesive. Tape seal insulation joints.
2. Butt edges and ends tight to adjacent board and to protrusions.
3. Place 24 inch wide horizontal strip of rigid insulation sheet over finish grade before placing floor slab. Tape seal insulation joints. See under-slab insulation below. Pin to earth in order to secure position prior to slab placement. Insulation is to be placed below the vapor barrier.

B. Under-slab and monolithic slab perimeter insulation – Extruded Polystyrene Insulation:
1. Place 24 inch wide vertical and horizontal strip of rigid insulation at slab perimeter. Chamfer at turn down as necessary.
2. Butt edges and ends tight to adjacent board and to protrusions.
3. Pin to earth in order to secure position prior to slab placement. Insulation is to be placed below the vapor barrier.

C. Batt Insulation:
1. Install in exterior walls spaces without gaps or voids.
2. Fit insulation tight in spaces. Leave no gaps or voids.
3. Fit insulation behind electrical outlet boxes and other constructions.

4. Fit insulation into outside void of framed corners.
5. Install with factory applied membrane facing warm side of building spaces. Attach flanges of facing to framing members.
6. Install loose fit above lay-in ceiling panels.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 07240

EXTERIOR INSULATION AND FINISH SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes exterior composite wall and soffit cladding system of rigid insulation and synthetic plaster finish.

1.2 SYSTEM DESCRIPTION

A. Exterior Insulation and Finish System: EIMA Class PB system.

1.3 SUBMITTALS

A. Shop Drawings: Indicate wall and soffit joint pattern and joint details.

B. Product Data: Submit data on system materials, product characteristics, performance criteria, limitations.

C. Samples: Submit one sample panel, 12 x 12 inches, illustrating each coating and texture range for selection.

1.4 QUALITY ASSURANCE

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

B. Applicator: Company specializing in performing Work of this section with minimum three years experience.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Do not install finish when ambient temperature is below 40 degrees F.

B. Maintain this temperature during and 24 hours after installation of finish.

PART 2 PRODUCTS

2.1 EXTERIOR INSULATION AND FINISH SYSTEMS

A. Manufacturers:
   1. W.R. Bonsal
   2. Dryvit Systems, Inc.
   3. Finestone Simplex Products

4. Parex Incorporated
5. Senergy Div., Harris Specialty Chemicals, Inc.
6. STO Corporation
7. Substitutions: Permitted.

2.2 COMPONENTS

A. Drainage Mat: 1/8" thick woven polymer threads above secondary weather barrier – daylight @ bottom of EIFS.

B. Extruded Polystyrene Board Insulation: ASTM C578, Type I;, conforming to the following:
1. Thickness: Thickness indicated.
2. Thickness Tolerance: 1/32 inch maximum.
3. Board Size: manufacturers recommendation inch.
4. Board Size Tolerance: 1/16 inch from square and dimension.
5. Edges: Square edges.
6. Flame/Smoke Properties: in accordance with ASTM E84.

C. Coating Reinforcement: Standard glass fiber mesh type, woven, treated for improved bond with coating.

D. Coating: Synthetic vinyl composition, air curing, containing, color as selected.

E. Exposed Aggregate: Washed granite, graded to manufacturers standard minimum and maximum size, color as selected.

2.3 ACCESSORIES

A. Insulation Fastening: Fastenings with washers.

B. Trim: Extruded plastic, with attachment flanges.

C. Sealant Materials: Recommended by coating manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify substrate and adjacent materials are dry.

3.2 INSTALLATION

A. Insulation:
1. Install drainage mat per manufacturers recommendations.
2. Install boards on wall surface, vertically.
3. Place boards in method to maximize tight joints. Stagger vertical joints. Butt edges and ends tight to adjacent board and to protrusions.

4. Secure boards to substrate by mechanical attachment to achieve continuous flush insulation surface.

B. Coatings:
1. Install base coat, coating and glass fiber mesh reinforcement.
2. Apply base coat to minimum thickness as recommended by manufacturer and fully embed reinforcement, wrinkle free.
3. Lap reinforcement edges and ends 2 inches.
4. Install trim and control joints.
5. Apply finish to total minimum thickness as recommended by manufactuer and embed finish aggregate.
6. Apply sealant at finish perimeter in accordance with Section 07900.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 07270

WEATHER BARRIERS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes air & water vapor leakage criteria for primary air and moisture seal building enclosure materials and assemblies.

1.2 SYSTEM DESCRIPTION

A. Air Penetration: 0.001 cfm/ft2 at 75 Pa, when tested in accordance with ASTM E2178. Type I per ASTM E1677.

B. Water Vapor Transmission: 28 perms, when tested in accordance with ASTM E96, Method B.

C. Water Penetration Resistance: 280 cm when tested in accordance with AATCC Test Method 127.

D. Air Resistance: Air infiltration at >1500 seconds, when tested in accordance with TAPPI Test Method T-460.

E. Tensile Strength: 38/35 lbs/in., when tested in accordance with ASTM D882, Method A.

F. Tear Resistance: 12/10 lbs., when tested in accordance with ASTM D1117.

G. Surface Burning Characteristics: Class A, when tested in accordance with ASTM E 84. Flame Spread: 10, Smoke Developed: 10.

H. UV Light Exposure: Resist deterioration of physical characteristics from exposure to UV light for a period no less than 270 days.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer current technical literature for each component.

B. Samples: Weather Barrier Membrane, minimum 8-1/2 inches by 11 inch.

C. Manufacturer Instructions: Provide manufacturer's written installation instructions.

1.4 QUALIFICATIONS

A. Applicator: Company specializing in performing Work of this section with minimum three years documented experience.

B. Installation shall be in accordance with weather barrier manufacturer's installation guidelines and recommendations.

C. Source Limitations: Provide commercial weather barrier and accessory materials produced by single manufacturer.

PART 2 PRODUCTS

2.1 AIR BARRIERS

A. Manufacturers:
   1. Dupont Tyvek CommercialWrap
   2. Substitutions: Permitted.

2.2 COMPONENTS

A. Joint Tape: 3" DuPont Tyvek Tape or equally performing product.

B. Wood Frame Fasteners: #4 nails with 1" plastic caps.

C. Metal Frame Fasteners: 2" plastic cap screws.

D. Sealants: Provide sealants that comply with ASTM C920, elastomeric polymer sealant to maintain watertight conditions as recommended by weather barrier manufacturer.

E. Adhesives: Provide adhesive recommended by weather barrier manufacturer.

F. Primers: Provide flashing manufacturer recommended primer to assist in adhesion between substrate and flashing.

PART 3 EXECUTION

3.1 PREPARATION

A. Remove loose or foreign matter impairing adhesion of materials.

B. Clean substrate surfaces to receive moisture barrier.

3.2 INSTALLATION

A. Install weather barrier over exterior face of exterior wall substrate in accordance with manufacturer recommendations.

B. Install weather barrier prior to installation of windows and doors.

C. Start weather barrier installation at a building corner, leaving 6-12 inches of weather barrier extended beyond corner to overlap.

D. Install weather barrier in a horizontal manner starting at the lower portion of the wall surface with subsequent layers installed in a shingling manner to overlap lower layers. Maintain weather barrier plumb and level.

E. Sill Plate Interface: Extend lower edge of weather barrier over sill plate interface 3-6 inches. Secure to foundation with elastomeric sealant as recommended by weather barrier manufacturer.

F. Window and Door Openings: Extend weather barrier completely over openings.

G. Overlap weather barrier

1. Exterior corners: minimum 12 inches.

2. Seams: minimum 6 inches.

H. Weather Barrier Attachment:

1. Attach weather barrier to studs through exterior sheathing. Secure using weather barrier manufacturer recommended fasteners, space 12 -18 inches vertically on center along stud line, and 24 inch on center, maximum horizontally.

I. Seal seams of weather barrier with seam tape at all vertical and horizontal overlapping seams.

J. Wrap barrier at openings per manufacturer's instructions.

K. Seal any tears or cuts as recommended by weather barrier manufacturer.

L. Protect installed weather barrier from damage.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 07620

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.1 SUMMARY

A. Section includes flashings and counterflashings, gutters and downspouts and fabricated sheet metal items.
   1. Provide precast concrete splash pads at all downspouts opening onto earthen materials.

1.2 SYSTEM DESCRIPTION

A. Sheet Metal System: Conform to criteria of SMACNA "Architectural Sheet Metal Manual."
   1. Gutters: SMACNA
   2. Downspouts: SMACNA
   3. Flashings: SMACNA

B. Gutters and Downspouts: Size components for rainfall intensity determined by storm occurrence of 1 in 5 years in accordance with SMACNA recommendations.

1.3 SUBMITTALS

A. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, termination, and installation details.

B. Samples: Submit two samples, 12 inch in size of each type of formed metal flashing illustrating typical seam, external corner, material, color, and finish.

PART 2 PRODUCTS

2.1 SHEET METAL FLASHING AND TRIM

A. Fabricators:
   1. Cheney Flashing Co.
   2. Keystone Flashing Co.
   3. Metal-Era Inc. Model
   4. Substitutions: Permitted.

B. Product Description: Flashing and sheet metal; prefinished, including gutters, downspouts, splash pads, and accessories.

2.2 COMPONENTS

A. Pre-Finished Aluminum Sheet: ASTM B209, manufacturer's standard alloy and temper for specified finish; 0.032 inch thick; mill finish shop pre-coated with acrylic coating; color as selected from manufacturer's standard color

2.3 ACCESSORIES

A. Fasteners: Same material and finish as flashing metal, with soft neoprene washers.

B. Gutter and Downspout Anchorage Devices: Type recommended by fabricator.

C. Gutter Supports: Spikes and ferrules.

D. Downspout Supports: Brackets

E. Underlayment: 30# asphalt saturated roofing felt.

F. Sealant: Exterior metal lap joint butyl or polyisobutylene sealant.

G. Plastic Cement: ASTM D4586, Type I.

H. Reglets: Surface mounted

2.4 FABRICATION

A. Gutter Accessories: Profiled to suit gutters and downspouts.

B. Splash Pads: precast concrete type, 12 x 24 inch size as manufactured by First Texas Precast Company or approved equal; minimum 2500 psi at 28 days, with minimum 5 percent air entrainment.

C. Downspout: prefinished aluminum

D. Form components free from distortion or defects. Form pieces in longest practical lengths.

E. Fabricate cleats and starter strips of same material as sheet, to interlock with sheet.

F. Hem exposed edges on underside 1/2 inch; miter and seam corners. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.

G. Fabricate flashings to allow toe to extend 2 inches over roofing. Return and brake edges.

H. Form material with flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.

I. Fabricate corners in one piece, 18 inch long legs; seam for rigidity, seal with sealant.

J. Form sheet metal pans with upstand, and flanges.

2.5 SHOP FINISHING

A. Class I Color Anodized Finish: AAMA 611 Integrally colored anodic coating not less than 0.7 mils thick.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, cant strips and reglets in place, and nailing strips located.

B. Verify membrane termination and base flashings are in place, sealed, and secure.

3.2 PREPARATION

A. Paint concealed metal surfaces and surfaces in contact with dissimilar metals with protective backing paint to minimum dry film thickness of 15 mil.

3.3 INSTALLATION

A. Install starter and edge strips, and cleats.

B. Install surface mounted reglets. Seal top of reglets with sealant. Insert flashings to form tight fit. Seal flashings into reglets with sealant.

C. Secure flashings, gutters and downspouts in place using concealed fasteners.

D. Apply plastic cement compound between metal work and felt flashings.

E. Fit components tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

F. Install sheet metal pans surrounding roof penetrations. Fill pans watertight with plastic cement.

G. Slope gutters 1/4 inch per foot minimum.

H. Set splash pads under downspouts.

I. Seal joints watertight.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 07900

JOINT SEALERS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes sealants and joint backing.

B. All sealants to be rated at a minimum of 30 year durability.

1.2 SUBMITTALS

A. Product Data: Submit data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

1.3 ENVIRONMENTAL REQUIREMENTS

A. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.

PART 2 PRODUCTS

2.1 JOINT SEALERS

A. Manufacturers:
1. Dow Corning Corp.
2. GE Silicones.
3. Mameco International Inc.
4. Pecora Corp.
5. Sika Corp.
6. Substitutions: Permitted.

B. Product Description:
1. General Purpose Exterior (Nontraffic) Sealant: Acrylic, solvent release curing; ASTM C920, Grade NS, Class 12-1/2, Uses M, G, and A; single component.
   a. Color: Colors as selected.
   b. Applications: Use for:
      1) Control, expansion, and soft joints in masonry.
      2) Joints between concrete and other materials.
      3) Joints between metal frames and other materials.
      4) Other exterior nontraffic joints for which no other sealant is indicated.
2. General Purpose Traffic Bearing Sealant: Polyurethane; ASTM C920, Grade P, Class 25, Use T; single component.
   a. Color: Colors as selected.

b. Applications: Use for exterior pedestrian and vehicular traffic bearing joints.

3. Exterior Metal Lap Joint Sealant: Butyl or polyisobutylene, non-drying, non-skinning, non-curing.
   a. Applications: Use for concealed sealant bead in sheet metal work and concealed sealant bead in siding overlaps.
4. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, single component, paintable.
   a. Color: Colors as selected.
   b. Applications: Use for interior wall and ceiling control joints, joints between door and window frames and wall surfaces, and other interior joints for which no other type of sealant is indicated.:
5. Bathtub/Tile Sealant: White silicone; ASTM C920, Uses M and A; single component, mildew resistant.
   a. Applications: Use for joints between plumbing fixtures and floor and wall surfaces, and joints between kitchen and bathroom toilet room counter tops and wall surfaces.
6. Acoustical Sealant: Butyl or acrylic sealant; ASTM C920, Grade NS, Class 12-1/2, Uses M and A; single component, solvent release curing, non-skinning.
   a. Applications: Use for concealed locations only at acoustically rated construction i.e. all partitions between adjacent class rooms and offices.
      1) Provide sealant bead between top stud runner and structure and between bottom stud track and floor.

2.2 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 D1056, sponge or expanded rubber; oversized 30 to 50 percent larger than joint width.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify substrate surfaces and joint openings are ready to receive work.

B. Verify joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

A. Remove loose materials and foreign matter impairing adhesion of sealant.

B. Clean and prime joints.

C. Perform preparation in accordance with ASTM C1193.

3.3 INSTALLATION

A. Perform installation in accordance with ASTM C1193.

B. Perform acoustical sealant application work in accordance with ASTM C919.

C. 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.

D. Install bond breaker where joint backing is not used.

E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

G. Tool joints concave.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 08110

STEEL DOORS AND FRAMES

PART 1 GENERAL

1.1 SUMMARY

A. Section includes steel door frames; non-rated and rated.

1.2 SUBMITTALS

A. Shop Drawings: Indicate door and frame elevations, internal reinforcement.

B. Product Data: Submit door and frame configurations, location of cut-outs for hardware reinforcement.

C. Samples: Submit two samples of metal, door frame, 6 inch in size illustrating shop finish colors and surface texture.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with the following:
1. ANSI 250.8 - Recommended Specifications for Standard Steel Doors and Frames.
2. DHI - Door Hardware Institute - The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.

PART 2 PRODUCTS

2.1 STEEL DOORS AND FRAMES

A. Door Manufacturers:
1. Standard Doors - Curries: 707 Series, 16 gauge.
2. Fire Doors – Curries: 727 Series, 16 gauge.
3. Substitutions: Permitted.

B. Frame Manufacturers:
1. Curries: M Series, 16 gauge with welded corners.
2. Substitutions: Permitted.

C. Product Description: Standard shop fabricated steel frames and doors; fire rated and non-rated.

2.2 COMPONENTS

A. Exterior Frames:
1. Level 2 nominal 16 gage/0.053 inch thick material, base metal thickness.

B. Interior Frames:
1. Level 1, nominal 16 gage/0.053 inch thick material, base metal thickness.

2.3 ACCESSORIES

A. Silencers: Resilient rubber set in aluminum channel fitted into drilled hole.

B. Removable Stops: Rolled steel channel shape.

C. Bituminous Coating: Fibered asphalt emulsion.

D. Primer: ANSI A250.10 rust inhibitive type.

E. Weatherstripping: Resilient rubber set in aluminum retainer.

2.4 FABRICATION

A. Fabricate doors and frames with hardware reinforcement welded in place. Protect frame hardware preparations with mortar guard boxes.

B. Configure exterior frames and doors with profile to receive recessed weatherstripping.

C. Fabricate frames as face welded units.

D. Fabricate frames to suit masonry wall coursing with 2 inches head member.

E. Reinforce frames wider than 48 inches with roll formed steel channels fitted tightly into frame head, flush with top.

F. Prepare interior frames for silencers and install.

G. Attach fire rating label to each fire rated door and frame.

2.5 SHOP FINISHING

A. Steel Sheet: Galvanized to ASTM A653/A653M A40.

B. Primer: Air dried.

C. Coat inside of frame profile with bituminous coating.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify opening sizes and tolerances are acceptable.

3.2 INSTALLATION

A. Install doors and frames in accordance with ANSI A250.8.

B. Coordinate installation of doors and frames with installation of hardware specified in Section 08710.

C. Coordinate door frames with masonry and gypsum board wall construction for frame anchor placement.

D. Install roll formed steel reinforcement channels between two abutting frames. Anchor to structure and floor.

E. Adjust door for smooth and balanced door movement.

F. Tolerances:
1. Maximum Diagonal Distortion: 1/8 inch measured with straight edge, corner to corner.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 08210

WOOD DOORS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes wood doors, non-rated and rated.

1.2 SUBMITTALS

A. Shop Drawings: Indicate door elevations, cutouts for glazing and hardware preparation.

1.3 QUALITY ASSURANCE

A. Perform work in accordance with the following:
   1. NWWDA I.S.1.
   2. Fire Door and Panel Construction: Conform to NFPA 252.

PART 2 PRODUCTS

2.1 WOOD DOORS

A. Manufacturers:
   1. Graham as scheduled.
   2. Substitutions: Permitted.

B. Product Description: Solid core wood doors, fire rated, non-rated; flush or glazed design; wood veneer; shop finished – color to be selected from manufacturers standard finishes.
   1. Flush Interior Doors: 1-3/4 inches thick; prefinished; solid core five ply construction; as indicated on Drawings.

2.2 COMPONENTS

A. Core:
   1. Core (Solid, Non-Rated): NWWDA, Type Solid particleboard core.

B. Flush Door Facing:
   1. Wood Veneer: NWWDA Grade 2 Good; Birch species wood, rotary sliced with random match grain, prefinished.
   2. Adhesive: NWWDA, Type II - water resistant.

2.3 ACCESSORIES

A. Glass Stops: Rolled steel type conform to UL requirements.

2.4 FABRICATION

A. Fabricate non-rated doors in accordance with NWWDA I.S.1 requirements.

B. Fabricate fire rated doors in accordance with NWWDA I.S.1 and to UL requirements. Attach fire rating label to door edge.

C. Astragals for Double Doors: Steel, T shaped, recessed at face edge.

D. Acoustic Rating for Door and Frame Assembly: ASTM E90, minimum STC 35.

E. Fabricate doors with hardware reinforcement blocking in place.

F. Factory machine doors for finish hardware.

G. Factory fit doors for frame opening dimensions identified on shop drawings.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install doors in accordance with NWWDA I.S.1 requirements and NFPA 80 requirements for fire rating label.

B. Coordinate installation of glass and glazing.

C. Install door louvers plumb and level.

D. Coordinate installation of doors with installation of metal frames specified in Section 08110 and hardware specified in Section 08710. Glass specified in Section 08800.

E. Adjust door for smooth and balanced door movement.

F. Tolerances:
1. Maximum Diagonal Distortion: 1/4 inch measured with straight edge, corner to corner.

END OF SECTION

SECTION 08360

OVERHEAD DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Sectional overhead doors of the following types:
   1. Full view aluminum doors.
   2. Electric door operator

1.2 RELATED SECTIONS

A. Section 05120 - Metal Fabrications: Steel channel opening frame.

B. Section 05400 – Cold-Formed Metal Framing and blocking for door opening.

C. Section 08710 - Door Hardware: Lock cylinders.

D. Division 16 Sections: Electrical service and connections for powered operators.

1.3 REFERENCES

A. ASTM A 653/A 653M - Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

B. ASTM A 924/A 924M - Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.

C. ASTM B 209/209M - Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

D. ASTM B 221/221M - Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

1.4 SUBMITTALS

A. Submit under provisions of Section 01001.

B. Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Operation and maintenance data.
   5. Nameplate data and ratings for motors.

C. Shop Drawings: Include opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.

D. Selection Samples: For each finish specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

E. Verification Samples: For each finish specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.5 WIND & SEISMIC PERFORMANCE REQUIREMENTS

A. Design doors to withstand positive and negative wind loads and seismic loading as calculated in accordance with applicable building code.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the types of doors specified in this section, with not less than ten years of documented experience.

B. Installer Qualifications: Company specializing in installing the types of products specified in this section, with minimum of five years of documented experience, and approved by the door manufacturer.

1.7 WARRANTY

A. Finish Warranty: Provide manufacturer's standard finish warranty against cracking, checking and peeling.
   1. Warranty period: 10 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Clopay Building Products Company

B. Substitutions: permitted.

2.2 FULL VIEW ALUMINUM DOORS

A. Door Construction:
   1. Panel Sections: 2-1/8 inches (54 mm) thick extruded 6053-T5 aluminum, with integral reinforcing fin. Enclosed top and bottom rails 3-1/2 inches (89 mm) wide, meeting rails 2-13/16 inch (71.4 mm) wide, and end stiles 3-1/2 inches (89 mm) wide, with meeting rails meeting to form a tongue-and-groove joint and bottom rail configured to retain U-shaped flexible PVC astragal. Glazing and solid panels installed and sealed with butyl tape and locking retainer.

B. Heavy Duty 2.125 inches (54 mm) Door - Clopay Model 903:
   1. Windows: Full-view aluminum sections, pre-painted to match door finish.
      a. Glazing: 1/2 inch (13 mm) insulated tempered glass glazing.
   2. Aluminum Finish: Clear anodized.
   3. Locking: Inside spring loaded slide bolt lock on end stile that engages slot in track.
      a. Provide one inside slide lock.
   4. Weatherstripping: Provide complete perimeter seals. Provide flexible top seal, flexible jamb seal and U shaped bottom seal.
   5. Tracks: Vertical tracks minimum 0.061 inch (1.55 mm) galvanized steel tapered and mounted for wedge type closing. Horizontal tracks minimum 0.075 inch (1.91 mm) galvanized steel, reinforced with minimum 0.0897 inch (2.28 mm) galvanized steel angles as required:
      a. Track Width: 3 inches (75 mm).
      b. Provide standard lift tracks with 15 inches (381 mm) radius track as indicated.
   6. Spring Counterbalance: Torsion spring counterbalance mechanism sized to weight of the door, with a helically wound, oil tempered torsion spring

mounted on a steel shaft; cable drum of die cast aluminum with high strength galvanized aircraft cable with minimum 7 to 1 safety factor.
a. High Cycle Spring: 50,000 cycles.

2.3 ELECTRIC DOOR OPERATORS

A. General: Provide electric door operator provided by door manufacturer for door with operational life specified complete with electric motor and factory pre-wired motor controls, starter, gear-reduction unit, clutch, remote-control stations, control devices, integral gearing for locking door, and accessories required for proper operation. Comply with NFPA 70.
1. Solenoid-operated brake.

B. Disconnect Device: Provide hand-operated disconnect or mechanism for emergency manual operation while disconnecting motor, without affecting timing of limit switch. Mount disconnect and operator so they are accessible from floor level. Include interlock device to automatically prevent motor from operating when emergency operator is engaged.

C. Design operator so motor may be removed without disturbing limit switch adjustment and without affecting emergency auxiliary operator.

D. Provide control equipment complying with NEMA ICS1, NEMA ICS 2, and NEMA ICS 6, with NFPA 70 Class 2 control circuit, maximum 24-V, AC or DC.

E. Electric Motors: Provide high-starting torque, reversible, continuous-duty, Class A insulated, electric motor, complying with NEMA MG 1, with overload protection, sized to start, accelerate, and operate door in either direction, from any position, at not less than 2/3 fps (0.2 m/s) and not more than 1 fps (.03m/s), without exceeding nameplate ratings or considering service factor.
1. Type: Solid State.
2. Type: Jackshaft.
3. HP:
   a. 3/4hp (559 W).
4. Power Characteristics:
   a. 120 V.
   b. 3 phase.
5. Service Factor:
   a. NEMA 4 watertight.
6. Coordinate wiring requirements and electrical characteristics of motors with building electrical system.

F. Remote Control Station: Provide momentary contact, 3-button control station with push - button controls labeled "Open", "Close" and "Stop".

G. Obstruction Detection Device: Provide each motorized door with indicated external automatic safety sensor able to protect full width of door opening. Activation of sensor immediately stops and reverses downward door travel.
1. Sensor Edge: Provide each motorized door with an automatic safety sensing edge, located within astragal or weather stripping mounted to bottom bar. Contact with sensor immediately stops and reverses downward door travel. Connect to control circuit using manufacturer's standard take-up reel or self-coiling cord. Sensing edge shall be operated by:
   a. Electric Fail safe.
2. Photo-electric control: Provide each motorized door with a photo-electric device that will stop and reverse the downward door travel if the light beam is

broken or blocked. Device shall be:
a. NEMA Type 4.

H. Limit Switches: Provide adjustable switches, interlocked with motor controls and set to automatically stop door at fully opened and fully closed positions.

I. Radio Controls: Provide 3 button radio transmitter to provide remote open, close, stop functionality.

J. Provide auxiliary chain hoist: for emergency manual operation while disconnecting motor, without affecting timing of limit switch. Mount disconnect and operator so they are accessible from floor level. Include interlock device to automatically prevent motor from operating when emergency operator is engaged.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine wall and overhead areas, including opening framing and blocking, with installer present, for compliance with requirements for installation tolerances, clearances, and other conditions affecting performance of Work in this Section.
1. Proceed with installation only after unsatisfactory conditions have been corrected.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

A. Install overhead doors and track in accordance with approved shop drawings and the manufacturer's printed instructions.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 08410
METAL-FRAME STOREFRONTS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes aluminum-framed storefronts including aluminum and glass doors, frames, hardware, and glass.

1.2 SYSTEM DESCRIPTION

A. Aluminum-Framed Storefront System: Tubular aluminum sections, factory fabricated, factory finished, glass infill, related flashings, anchorage and attachment devices.

B. System Assembly: Factory unitized assembly.

C. System Design: Provide for expansion and contraction within system components caused by temperature cycling. Design and size members to withstand loads caused by pressure and suction of wind.

D. Air Infiltration: Limit air leakage through assembly to 0.06 cfm/min/sq ft of wall area, measured at reference differential pressure across assembly of 1.57 psf as measured in accordance with AAMA 501.

E. Water Leakage: None when measured in accordance with ASTM E331.

F. System Internal Drainage: Drain water entering framing system to exterior.

1.3 SUBMITTALS

A. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related Work and expansion and contraction joint location and details.

B. Product Data: Submit component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, door hardware, and internal drainage details.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with AAMA MCWM-1 - Metal Curtain Wall, Window, Store Front and Entrance - Guide Specifications Manual.

B. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

C. Installer: Company specializing in performing Work of this section with minimum three years experience.

D. Design wind loading under direct supervision of Professional Engineer experienced in design of this Work and licensed in State of Arkansas.

PART 2 PRODUCTS

2.1 ALUMINUM-FRAMED STOREFRONTS

A. Manufacturers:
1. Arch Aluminum & Glass LC.
2. The Baut Studios.
3. EFCO Corp.
4. Kawneer Co., Inc.
5. Traco.
6. Vistawall Architectural Products.
7. YKK AP America.
8. Substitutions: Permitted.

B. Product Description: Aluminum-framed storefronts, extruded aluminum, with aluminum and glass doors, glazing, hardware.

2.2 COMPONENTS

A. Frames: Thermally broken extruded aluminum; flush glazing stops.

B. Reinforced Mullion: Profile of extruded aluminum cladding with internal reinforcement of shaped structural steel section.

C. Glass and Glazing: Specified in Section 08800.

D. Hardware: Specified in Section 08710. Storefront manufacturer/supplier to supply storefront hardware.

E. Flashings: Minimum 0.32 inch thick aluminum, to match mullion sections where exposed.

F. Fasteners: Stainless steel.

G. Perimeter Sealant and Backing Materials: Specified in Section 07900.

2.3 FABRICATION

A. Fabricate doors and frames allowing for minimum clearances and shim spacing around perimeter of assembly.

B. Accurately and rigidly fit and secure joints and corners, flush, hairline, and weatherproof.

C. Arrange fasteners, attachments, and jointing to ensure concealment from view.

D. Prepare components with internal reinforcement for door hardware and door operator hinge hardware.

2.4 SHOP FINISHING

A. Color Anodized Aluminum Surfaces (unless otherwise specified): AA-M12C22A44, Architectural Class I 0.7 mils Black anodized coating conforming to AAMA 611.

B. Concealed Steel Items: ASTM A123/A123M Galvanize to 2.0 oz/sq ft.

C. Apply bituminous paint to concealed aluminum and steel surfaces in contact with cementitious or dissimilar metals.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify wall openings and adjoining air and vapor seal materials are ready to receive work of this section.

3.2 INSTALLATION

A. Install doors, frames, glazing, hardware and flashings in accordance with AAMA MCWM-1 - Metal Curtain Wall, Window, Store Front and Entrance - Guide Specifications Manual.

B. Use anchorage devices to securely attach frame assembly to structure.

C. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.

D. Coordinate attachment and seal of air and vapor barrier materials. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.

E. Coordinate installation of hardware with Section 08710.

F. Coordinate installation of glass with Section 08800; separate glass from metal surfaces.

G. Coordinate installation of perimeter sealants with Section 07900.

H. Tolerances
1. Variation from Plane: 1/8 inch per foot maximum or 1/4 inch per 30 feet; whichever is less.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 08430

SANDWICH PANEL SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes the insulated translucent sandwich panel system and accessories as shown and specified. Work includes providing and installing:

1. Factory prefabricated structural insulated translucent sandwich panels
2. Aluminum installation system
3. Aluminum sill flashing

B. Related Sections:

1. Metal Building Systems: Section 13121
2. Sheet Metal Flashing and Trim: Section 07620
3. Joint Sealers: 07900

1.2 SUBMITTALS

A. Submit manufacturer's product data. Include construction details, material descriptions, profiles and finishes of components.

B. Submit shop drawings. Include elevations and details.

C. Submit manufacturer's color charts showing the full range of colors available for factory-finished aluminum.

1. Submit samples for each exposed finish required, in same thickness and material indicated for the work and in size indicated below. If finishes involve normal color variations, include sample sets consisting of two or more units showing the full range of variations expected.

a. Sandwich panels: 14" x 28" units
b. Factory finished aluminum: 5" long sections

D. Submit Installer Certificate, signed by installer, certifying compliance with project qualification requirements.

E. Submit product reports from a qualified independent testing agency indicating each type and class of panel system complies with the project performance requirements, based on comprehensive testing of current products. Previously completed reports will be acceptable if for current manufacturer and indicative of products used on this project.

1. Reports required are:

a. International Building Code Evaluation Report
b. Flame Spread and Smoke Developed (UL 723)
c. Burn Extent (ASTM D 635)

d. Color Difference (ASTM D 2244)
e. Impact Strength (UL 972)
f. Bond Tensile Strength (ASTM C 297 after aging by ASTM D 1037)
g. Bond Shear Strength (ASTM D 1002)
h. Beam Bending Strength (ASTM E 72)
i. Insulation U-Factor (NFRC 100)
j. NFRC System U-Factor Certification (NFRC 700)
k. Solar Heat Gain Coefficient (NFRC or Calculations)
l. Condensation Resistance Factor (AAMA 1503)
m. Air Leakage (ASTM E 283)
n. Structural Performance (ASTM E 330)
o. Water Penetration (ASTM E 331)
p. 1200°F Fire Resistance (SWRI)

1.3 QUALITY ASSURANCE

A. Manufacturer's Qualifications

1. Material and products shall be manufactured by a company continuously and regularly employed in the manufacture of specified materials for a period of at least ten consecutive years and which can show evidence of those materials being satisfactorily used on at least six projects of similar size, scope and location. At least three of the projects shall have been in successful use for ten years or longer.
2. Panel system must be listed by an ANSI accredited Evaluation Service, which requires quality control inspections and fire, structural and water infiltration testing of sandwich panel systems by an accredited agency.
3. Quality control inspections shall be conducted at least once each year and shall include manufacturing facilities, sandwich panel components and production sandwich panels for conformance with AC177 "Translucent Fiberglass Reinforced Plastic (FRP) Faced Panel Wall, Roof and Skylight Systems" as issued by the ICC-ES.

B. Installer's Qualifications: Installation shall be by an experienced installer, which has been in the business of installing specified panel systems for at least two consecutive years and can show evidence of satisfactory completion of projects of similar size, scope and type.

1.4 PERFORMANCE REQUIREMENTS

A. The manufacturer shall be responsible for the configuration and fabrication of the complete panel system.

1. When requested, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
2. Standard panel system shall have less than 0.01 cfm/ft^2 air leakage by ASTM E 283 at 6.24 PSF (50 mph) and no water penetration by ASTM E 331 at 15 PSF; and structural testing by ASTM E 330.
3. Structural Loads; Provide system capable of withstanding positive and negative wind loads as well as seismic loads as calculated in accordance with applicable building code.

1.5 DELIVERY STORAGE AND HANDLING

A. Deliver panel system, components and materials in manufacturer's standard protective packaging.

B. Store panels on the long edge; several inches above the ground, blocked and under cover in accordance with manufacturer's storage and handling instructions.

1.6 WARRANTY

A. Submit manufacturer's and installer's written warranty agreeing to repair or replace panel system work, which fails in materials or workmanship within one year of the date of delivery. Failure of materials or workmanship shall include leakage, excessive deflection, deterioration of finish on metal in excess of normal weathering, defects in accessories, insulated translucent sandwich panels and other components of the work.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. The basis for this specification is for products manufactured by Kalwall Corporation. Other manufacturers may bid this project provided they comply with all of the performance requirements of this specification and submit evidence thereof.

2.2 PANEL COMPONENTS

A. Face Sheets

1. Translucent faces: Manufactured from glass fiber reinforced thermoset resins, formulated specifically for architectural use.

   a. Thermoplastic (e.g. polycarbonate, acrylic) faces are not acceptable.
   b. Face sheets shall not deform, deflect or drip when subjected to fire or flame.

2. Interior face sheets:

   a. Flame spread: Underwriters Laboratories (UL) listed, which requires periodic unannounced retesting, with flame spread rating no greater than 50 and smoke developed no greater than 250 when tested in accordance with UL 723.
   b. Burn extent by ASTM D 635 shall be no greater than 1".

3. Exterior face sheets:

   a. Color stability: Full thickness of the exterior face sheet shall not change color more than 3 CIE Units DELTA E by ASTM D 2244 after 5 years outdoor South Florida weathering at 5° facing south, determined by the average of at least three white samples with and without a protective film or coating to ensure long-term color stability. Color stability shall be unaffected by abrasion or scratching.
   b. Strength: Exterior face sheet shall be uniform in strength, impenetrable by hand held pencil and repel an impact minimum of 70 ft. lbs. without fracture or tear when impacted by a 3-1/4" diameter, 5 lb. free-falling ball per UL 972.

4. Appearance:

    a. Exterior face sheets: Smooth .070" thick and crystal in color.
    b. Interior face sheets: Smooth .045" thick and crystal in color.
    c. Face sheets shall not vary more than ± 10% in thickness and be uniform in color.

B. Grid Core

1. Thermally broken aluminum and composite I-beam grid core shall be of 6063-T6 or 6005-T5 alloy and temper with provisions for mechanical interlocking of muntin-mullion and perimeter. Width of I-beam shall be no less than 7/16".
2. I-beam Thermal break: Minimum 1", thermoset fiberglass composite.

C. Laminate Adhesive

1. Heat and pressure resin type adhesive engineered for structural sandwich panel use, with minimum 25-years field use. Adhesive shall pass testing requirements specified by the International Code Council "Acceptance Criteria for Sandwich Panel Adhesives".
2. Minimum tensile strength of 750 PSI when the panel assembly is tested by ASTM C 297 after two exposures to six cycles each of the aging conditions prescribed by ASTM D 1037.
3. Minimum shear strength of the panel adhesive by ASTM D 1002 after exposure to four separate conditions:

    a. 50% Relative Humidity at 68° F: 540 PSI
    b. 182° F: 100 PSI
    c. Accelerated Aging by ASTM D 1037 at room temperature: 800 PSI
    d. Accelerated Aging by ASTM D 1037 at 182° F: 250 PSI

2.3 PANEL CONSTRUCTION

A. Provide sandwich panels of flat fiberglass reinforced translucent face sheets laminated to a grid core of mechanically interlocking I-beams. The adhesive bonding line shall be straight, cover the entire width of the I-beam and have a neat, sharp edge.

1. Thickness: 2-3/4"
2. Grid pattern: Nominal size 12 x 24 pattern Shoji vertical.

B. Standard panels shall deflect no more than 1.9" at 30 PSF in 10' 0" span without a supporting frame by ASTM E 72.

C. Standard panels shall withstand 1200° F fire for minimum one hour without collapse or exterior flaming.

D. Thermally broken panels: Minimum Condensation Resistance Factor of 80 by AAMA 1503 measured on the bond line.

2.4 BATTENS AND PERIMETER CLOSURE SYSTEM

A. Closure system: thermally broken extruded aluminum 6063-T6 and 6063-T5 alloy and temper clamp-tite screw type closure system.

B. Sealing tape: Manufacturer's standard, pre-applied to closure system at the factory under controlled conditions.

C. Fasteners: 300 series stainless steel screws for aluminum closures, excluding final fasteners to the building.

D. Finish:

1. Manufacturer's factory applied finish, which meets the performance requirements of AAMA 2604. Color to be (selected from manufacturer's standards).

PART 3 - EXECUTION

3.1 EXAMINATION

A. Installer shall examine substrates, supporting structure and installation conditions.

B. Do not proceed with panel installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Metal Protection:

1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose.
2. Where aluminum will contact concrete, masonry or pressure treated wood, protect against corrosion by painting contact surfaces with bituminous paint or method recommended by manufacturer.

3.3 INSTALLATION

A. Install the panel system in accordance with the manufacturer's suggested installation recommendations and approved shop drawings.

1. Anchor component parts securely in place by permanent mechanical attachment system.
2. Accommodate thermal and mechanical movements.
3. Set perimeter framing in a full bed of sealant compound, or with joint fillers or gaskets to provide weather-tight construction.

B. Install joint sealants at perimeter joints and within the panel system in accordance with manufacturer's installation instructions.

3.4 CLEANING

A. Clean the panel system interior and exterior, immediately after installation.

B. Refer to manufacturer's written recommendations.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 08710

DOOR HARDWARE

PART 1 GENERAL

1.1 SUMMARY

A. Section includes hardware for wood, hollow steel, aluminum, doors, thresholds, weatherstripping, seals, and door gaskets.

1.2 SYSTEM DESCRIPTION

A. Fire Rated Openings: Provide door hardware listed by UL or Warnock Hersey, or other testing laboratory approved by applicable authorities.
   1. Hardware: Tested in accordance with NFPA 252.

1.3 SUBMITTALS

A. Shop Drawings: Indicate locations and mounting heights of each type of hardware.

B. Samples: Submit hinge, latchset, lockset, and closer, illustrating style, color, and finish. Incorporate into the work.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with the following requirements:
   1. ANSI A156 series.
   2. NFPA 80 - Fire Doors and Windows.
   3. NFPA 101 - Life Safety Code.

B. Coordination: Coordinate work of this section with other directly affected sections requiring integral reinforcement for door hardware.

C. Supplier: Company specializing in supplying commercial door hardware with minimum three years experience.

1.6 MAINTENANCE SERVICE

A. Provide service and maintenance services of door closers for one year from Date of Substantial Completion.

B. Provide special wrenches and tools applicable to each different or special hardware component.

PART 2 PRODUCTS

2.1 DOOR HARDWARE

A. Manufacturers:
1. Accurate Metal Weather Strip Co. Inc.
2. American Device Manufacturing Co.
3. Arrow Architectural Hardware.
4. Bommer Industries, Inc.
5. Clipenglyde, Inc.
6. Dorma Door Controls, Inc.
7. NT Falcon Lock.
8. Glynn-Johnson.
9. Hager Companies.
10. Holmes-Hally Industries, Inc.
11. LCN Closers.
12. Markar Products, Inc.
13. NT Monarch Hardware.
14. Precision Hardware Mfg Co Inc.
15. Reese Industries.
16. Sash Controls Inc.
17. Schlage Lock Co.
18. Stanley Hardware.
19. Von Duprin, Inc.
20. Substitutions: Permitted.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify doors and frames are ready to receive work and dimensions are as instructed by manufacturer.

B. Verify electric power is available to power operated devices and is of correct characteristics.

3.2 INSTALLATION

A. Coordinate mounting heights with door and frame manufacturers. Use templates provided by hardware item manufacturer.

B. Mounting Heights From Finished Floor to Center Line of Hardware Item: Comply with manufacturer recommendations and applicable codes.

3.3 SCHEDULE: Note: Hardware supplier to coordinate stops, handing, and hardware requirements with plan, as built conditions, and applicable building codes prior to bidding or ordering hardware. See door schedule to coordinate hardware use locations.

A. Hardware used to be as follows or approved equal: finishes to be determined from manufacturers standard selection. This list is not all inclusive and other necessary items must be provided as required to provide door operation as described in the door schedule.

1. Interior hinges -F179 4.5 x 4.5, (HI-3) Stanley – provide minimum 3 sets per door.
2. Exterior hinges - FBB179 4.5 x 4.5 (NRP),(HI-2) Stanley – provide minimum 3 sets per door.
3. Closer - EB1431-UO, (CL-1) Sargent
4. Keyed lockset - 28-7G05 LL, (LO-7) Sargent
5. Wall Stop - 406 (ST-3) Rockwood – all doors are to receive either wall or floor stop. Hardware supplier to determine appropriateness, coordinate with architect.
6. Floor Stop – 441 (MS) Rockwood – all doors are to receive either wall or floor stop. Hardware supplier to determine appropriateness, coordinate with architect.
7. Silencers – 608, (SI-1) Rockwood – provide minimum 3 per door.
8. Passage set - 28-7U15 LL, (LO-9) Sargent
9. Panic - 12-8913 ETL, (ED-3) Sargent
10. Threshold – 896NDKB-36", (TH-1) Nat. Guard
11. Set Weatherstrip - 160DKB-V – 3070, (GA-1) Nat. Guard
12. Dummy lever - 7U93 LL, (LO-11) Sargent
13. Flush bolts - 555-12", (BO-1) Rockwood
14. Vertical Rods - 8713 ETL, ED-8) Sargent – as required.
15. Mort. Cylinder - 47-41-101, (CY-1) Sargent – as required.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 08800

GLAZING

PART 1 GENERAL

1.1 SUMMARY

A. Section includes glass glazing for metal frames, doors, windows, and glazed walls.
   1. Glass glazing materials and installation requirements are included in this section for other sections referencing this section.

1.2 SYSTEM DESCRIPTION

A. System performance to achieve continuity of building enclosure air barrier and vapor retarder with glass and glazing materials of this section.

B. Design Tolerances: Size glass to withstand dead loads and positive and negative wind loads acting normal to plane of glass.

1.3 SUBMITTALS

A. Product Data on Glass Types Specified: Submit physical and environmental characteristics, size limitations, and special installation requirements.

B. Product Data on Glazing Compounds: Submit chemical characteristics, limitations, special application requirements. Identify available colors.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with GANA Glazing Manual, for glazing installation methods.

PART 2 PRODUCTS

2.1 GLAZING

A. Manufacturers:
   1. Arch Aluminum & Glass LC
   2. Atohass Americas Inc.
      Flex-Lite Corp. Model.
   3. Glass Unlimited Inc / Ambiance.
   4. Graham FRP Composites.
   5. Inkan Ltd.
   6. Libbey-Owens-Ford, Inc.
   7. Viracon.
   8. Substitutions: Permitted.

2.2 COMPONENTS

A. Flat Glass (Type FG): Minimum 1/4 inch unless otherwise indicated.
   1. Clear Float Glass (Type FG-CF): ASTM C1036, Type 1 transparent flat, Class 1 clear, Quality q3 glazing select.
   2. Clear Heat Strengthened Glass (Type FG-CH): ASTM C1048, Kind HS, heat strengthened, Condition A uncoated, Type 1 transparent flat, Class 1 clear, Quality q3 glazing select.

B. Safety Glass (Type SG): Conform to ANSI Z97.1, minimum thickness 1/4 inch unless otherwise indicated.
   1. Clear Tempered Glass (Type SG-CT): ASTM C1048, Kind FT Fully tempered, Condition A, uncoated, Type 1 transparent flat, Class 1 clear, Quality q3 glazing select; with horizontal tempering.

C. Fire Resistive Glass (Type FRG): Glazing materials to by types approved for use with specified materials in fire rated applications as indicated on Drawings. Minimum 1/4 inch thick unless otherwise indicated.
   1. Wired Clear Glass (Type FRG-CW): ASTM C1036, Type II wired flat, Class 1 polished both sides, Quality q8 glazing; Mesh m1 diagonal of woven stainless steel wire, manufacturer's standard grid size.

D. Insulated Glass Units (Type IG): Total unit thickness 3/4 inch.
   1. Double Pane Insulated Glass Units (Type IG-DP): ASTM E774 Class A and E773; with glass elastomer edge seal; purge interpane space with dry hermetic air.

2.3 ACCESSORIES

A. Elastomeric Glazing Sealants: Materials compatible with adjacent materials including glass, insulating glass seals, and glazing channels.
   1. Silicone Glazing Sealant: ASTM C920, Type S, Grade NS, Class and Use suitable for glazing application indicated; single component; solvent curing; capable of water immersion without loss of properties; non-bleeding, non-staining, cured Shore A hardness of 15 to 25.
      a. Color: As selected.
      b. Structural Silicone: Furnish high-modulus structural silicone glazing materials where sealant bonds glass to substrate.

B. Glazing Putty:
   1. Glazing Putty: ASTM C570, Type II, oil and resin base caulking compound for building construction; knife grade consistency; manufacturer's standard white color.

C. Glazing Gaskets: ASTM C864 Option I, resilient neoprene or polyvinyl chloride extruded shape to suit glazing channel retaining slot.
   1. Color: As selected.

D. Pre-Formed Glazing Tape: Size to suit application.
   1. Glazing Tape: Closed cell polyvinyl chloride foam, coiled on release paper over adhesive on two sides, maximum water absorption by volume of 2 percent, designed for compression of 25 percent to effect air barrier and vapor retarder seal.

E. Setting Blocks: ASTM C864 Option I, Neoprene, Shore A durometer hardness.

F. Spacer Shims: ASTM C864 Option I, Neoprene, 50 to 60 Shore A durometer hardness.

G. Glazing Clips: Manufacturer's standard type.

H. Fire-Resistant Glazing Materials: Materials used to obtain required fire-resistant rating.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify openings for glazing are correctly sized, within tolerance, and glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.

3.2 PREPARATION

A. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

B. Prime surfaces scheduled to receive sealant.

3.3 INSTALLATION

A. Perform installation in accordance with GANA Glazing Manual.
   1. Glazing Sealants: Comply with ASTM C1193.
   2. Fire Rated Openings: Comply with NFPA 80

3.4 CLEANING

A. Remove glazing materials from finish surfaces.

B. Remove labels after Work is complete.

C. Clean glass and adjacent surfaces.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 09260

GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

A. Section includes gypsum board with joint treatment and acoustic insulation.

B. Corner protection.

1.2 SYSTEM DESCRIPTION

A. Conform to drawings, applicable code for fire rated assemblies, and in conjunction with Section 05400 as follows:
   1. Fire Rated Walls (locate as noted in drawings): Listed assembly by UL No. U419 unless otherwise noted.

1.3 SUBMITTALS

A. Product Data: Submit data on gypsum board, joint tape, corner protectives, joint material, and acoustic accessories.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with ASTM C840.

PART 2 PRODUCTS

2.1 GYPSUM BOARD ASSEMBLIES

A. Manufacturers:
   1. Celotex Building Products.
   2. G-P Gypsum Corp.
   3. National Gypsum Co.
   4. United States Gypsum Co.
   5. Substitutions: Permitted.

2.2 COMPONENTS

A. Gypsum Board Types: 5/8 inch thick, maximum available length in place; ends square cut, tapered edges; unless noted otherwise as follows:
   1. Standard Type: ASTM C36.
   2. Fire Rated Type: ASTM C36, UL or WH rated.
   3. Moisture Resistant Type: ASTM C630/C630M.
   4. High Impact: ASTM E84.

5. Exterior: ASTM D3273, ASTM C1177/C1280

2.3 ACCESSORIES

A. Corner Beads: equal to Vinyl Corporation – corner beads CB125.

B. Edge Trim: GA-216, Type LC bead.

C. Joint Materials: Reinforcing tape, joint compound, adhesive, and water.

D. Fasteners: Type S12 hardened screws.

E. External Corner Protection: equal to IPC Wall Protection Systems, ¾" x ¾" Tape-on Corner Guards. Standard color to be selected. **Locate at each external corner, typical.**

F. Adhesive: ASTM C557.

G. Expansion Joints: "U" type reveal equal to Vinyl Corporation channel reveal model DC50-38S with approximately 3/8" void. **Locate at each jamb above each door, typical.**

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify site conditions are ready to receive work.

3.2 INSTALLATION

A. Ceiling Framing:
1. Install in accordance with ASTM C754.
2. Coordinate location of hangers with other work. Install ceiling framing independent of walls, columns, and above ceiling work.
3. Reinforce openings in ceiling suspension system interrupting main carrying channels or furring channels, with lateral channel bracing.
4. Laterally brace entire suspension system.

B. Gypsum Board:

1. Install gypsum board in accordance with GA-216 and GA-600.
2. Fasten gypsum board to furring or framing with screws. Staples may only be used when securing first layer of double layer applications if allowed by UL listing.
3. Place control joints consistent with lines of building spaces as directed by Architect/Engineer.
4. Control joints / expansion joints are to be place at a maximum of 50'0" on center.
5. Place corner beads at external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials.

C. Schedule:
1. Install moisture resistant drywall all locations within 4'-0" of water supply or drain openings.
2. Install type X gypsum board at all fire rated assemblies.
3. Install high impact gypsum board at all corridor and entry walls. (Type X where applicable.)
4. Install exterior type gypsum at all exterior locations /beneath EIFS finish.
5. Install standard 5/8" gypsum board at all other locations.
6. Install ¾" by full height corner guards at ALL gypsum board external corners. Finish drywall fully beneath (including paint).

D. Joint Treatment:
1. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
2. Feather coats onto adjoining surfaces so camber is maximum 1/32 inch.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 09510

ACOUSTICAL CEILINGS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes suspended metal grid ceiling system; and acoustic ceiling tile.

1.2 SYSTEM DESCRIPTION

A. Provide system capable of supporting imposed loads with deflection limited to 1: 240.

B. Installed System: Conform to UL rating for ceiling and floor assembly.

C. Conform to applicable code for fire rated assembly.

1.3 SUBMITTALS

A. Shop Drawings: Indicate ceiling layout.

B. Product Data: Submit manufacturer's product data.

C. Samples: Submit ceiling tile and suspension.

1.4 QUALITY ASSURANCE

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience, and with service facilities within 100 miles of Project.

B. Installer: Company specializing in performing Work of this section with minimum three years experience.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity for acoustic unit installation.

PART 2 PRODUCTS

2.1 SUSPENDED ACOUSTICAL CEILINGS

A. Manufacturers:
1. Armstrong, fissured, angled tegular edge, size as scheduled
2. Substitutions: Permitted

2.2 COMPONENTS

A. Grid: As Scheduled.
1. Non-Fire Rated Grid: ASTM C635, intermediate duty non-fire rated, exposed T configuration; components die cut and interlocking.
2. Fire Rated Grid: ASTM C635, intermediate duty, listed by UL for use in one hour assembly, exposed T; components die cut and interlocking.
3. Accessories: Stabilizer bars, clips, splices, edge moldings, and hold down clips, required for suspended grid system.
4. Grid Materials: Commercial quality cold rolled steel with galvanized coating.
5. Exposed grid surface width: 15/16 inch.
6. Grid Finish: color as selected.
7. Support Channels and Hangers: Galvanized steel, size and type to suit application and ceiling system flatness requirements specified.

B. Acoustic Tiles: ASTM E1264 as scheduled.
1. 1. Nominal Size: 24 x 24 unless otherwise scheduled in drawings.
2. Thickness: 5/8 inches.
3. NRC Range.55 per ASTM E 1264
4. Fire Hazard Classification: Class A – flame spread 25 or under.
5. Surface Finish: Non-directional fissured
6. Edge: Angled Tegular
7. Color: White.

2.3 ACCESSORIES

A. Gypsum Board: Fire rated type, 5/8 inch thick, paper faced as scheduled.

B. Acoustic Sealant for Perimeter Moldings: Specified in Section 07900.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify layout of hangers does not interfere with other work.

3.2 INSTALLATION

A. Suspension System:
1. Install system in accordance with ASTM C636.
2. Coordinate location of hangers with other work. Where components prevent regular spacing of hangers, reinforce system to span extra distance.
3. Hang system independent of walls, columns, ducts, pipes and conduit.
4. Locate system on room axis according to reflected plan.
5. Install edge molding at intersection of ceiling and vertical surfaces, using longest practical lengths.

B. Acoustic Units:

1. Install acoustic units level, free from damage, twist, warp or dents.
2. Lay directional patterned units one way with pattern parallel to shortest room axis.
3. Lay acoustic insulation above acoustic units for distance of 24 inches on both sides of acoustic partitions.
4. Install hold down clips to retain panels tight to grid system.
5. Install light fixture boxes constructed of acoustical pane above light fixtures in accordance with UL assembly requirements.

C. Tolerances: Variation from Flat and Level Surface: 1/8 inch in 10 feet.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 09650

RESILIENT FLOORING

PART 1 GENERAL

1.1 SUMMARY

A. Section includes resilient tile flooring and base.

1.2 SYSTEM DESCRIPTION

A. Resilient Flooring: Conform to applicable code for flame/smoke rating requirements in accordance with ASTM E84 and critical radiant flux (CRF) in accordance with ASTM E648.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's product data.

B. Samples:
1. Submit manufacturer's complete set of color samples for initial selection.
2. Submit two samples, 12 x 12 inch in size illustrating color and pattern for each resilient flooring product specified.
3. Multiple color schemes / combinations will be chosen throughout the project and may include but are not limited to patterns using whole multiple colored tile and may vary from area to area.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit maintenance instruction and data.

1.5 QUALITY ASSURANCE

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

B. Installer: Company specializing in performing Work of this section with minimum three years experience.

1.6 ENVIRONMENTAL REQUIREMENTS

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 temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.1 TILE FLOORING

A. Manufacturers:
   1. Armstrong World Industries, Inc.
   2. Substitutions: permitted.

B. Vinyl Composition Tile: ASTM F1066:
   1. Size: 12 x 12 inch.
   2. Thickness: 0.125 inch.
   3. Pattern: Through pattern.

2.2 RESILIENT BASE

A. Manufacturers:
   1. Armstrong World Industries, Inc.
   2. Roppe Corp.
   3. Substitutions: permitted

B. Base: ASTM F1861 Rubber; top set extended toe:
   1. Height: 4 inch.
   2. Thickness: 0.125 inch thick.
   3. Finish: Matte.
   4. Length: Roll.
   5. Accessories: Premolded external corners.

2.3 ACCESSORIES

A. Subfloor Filler: Premix latex; type recommended by floor material manufacturer.

B. Primers and Adhesives: Waterproof, types recommended by floor material manufacturer.

C. Sealer and Wax: Types recommended by floor material manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify concrete floors are dry to maximum moisture content as recommended by manufacturer, and exhibit negative alkalinity, carbonization, and dusting.

3.2 PREPARATION

A. Clean substrate.

B. Fill minor low spots and other defects with sub-floor filler.

C. Apply primer as required to prevent "bleed-thru" or interference with adhesion by substances that cannot be removed.

3.3 INSTALLATION

A. Spread adhesive and set flooring in place. Press tile flooring to attain full adhesion.

B. Install tile flooring with joints and seams parallel to building lines. Allow minimum 1/2 full size tile width at room or area perimeter. Orient “grain” of tile as directed by architect.

C. Scribe flooring to produce tight joints at items penetrating flooring.

D. Where floor finishes are different on opposite sides of door, terminate flooring under centerline of door.

E. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated. Secure resilient strips by adhesive.

F. Adhere base tight to wall and floor surfaces.

G. Fit joints tightly and make vertical. Miter internal corners. At external corners, use premolded units.

3.4 CLEANING

A. Remove excess adhesive from surfaces without damage.

B. Clean seal and wax for project closeout and as necessary to prevent wear or damage.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 09680

CARPET

PART 1 GENERAL

1.1 SUMMARY

A. Section includes carpet - direct-glued.

1.2 SUBMITTALS

A. Shop Drawings: Indicate, direction of carpet pile and pattern, location of edge moldings and edge bindings.

B. Samples: Submit two samples full tiles illustrating color and pattern for each carpet and cushion material specified.

1.3 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit maintenance and cleaning instructions.

1.4 QUALITY ASSURANCE

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Store materials in area of installation of 48 hours prior to installation.

B. Maintain minimum 70 degrees F ambient temperature 3 days prior to, during and 24 hours after installation.

C. Ventilate installation area during installation and for 3 days after installation.

1.6 EXTRA MATERIALS

A. Furnish all usable scraps of carpeting of each type, color, and pattern used to owner.

B. Furnish minimum of 6 full carpet tiles of each colorway to owner at conclusion of the construction.

PART 2 PRODUCTS

2.1 CARPET

A. Locate as scheduled

B. Installation pattern as determined by architect.

C. Manufacturers:
1. J + J, Invision
2. Substitutions: Permitted

D. Commercial Carpets: **J + J, Invision, Night @ the Circus, Flying Trapeze**, or approved equal.
1. Style: Flying Trapeze (7002)
2. Yarn: solution dyed
3. Patterned loop surface
4. Tile Size: 24" x 24"
5. Backing: Nexus modular
6. Gauge: 1/12
7. Flame Resistance – ASTM E-648 greater than .45 watts/cm2
8. Smoke Density – passes NBS Smoke Chamber (ASTM E-662)
9. Color-way to be determined from manufacturers standard colors unless otherwise scheduled or specified.

2.2 ACCESSORIES

A. Sub-Floor Filler: Cementitious Type recommended by flooring material manufacturer.

B. Moldings and Edge Strips: Rubber, color as selected.

C. Seam Adhesive: Recommended by manufacturer.

D. Contact Adhesive: Recommended by carpet manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify floor surfaces are smooth and flat within tolerances and are ready to receive work.

B. Verify concrete floors for glue-down installation are ready for carpet installation by testing for moisture emission rate and alkalinity. Obtain instructions when test results are not within specified limits.

3.2 PREPARATION

A. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.

B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.

C. Vacuum clean substrate.

3.3 INSTALLATION

A. Install carpet in accordance with Carpet and Rug Institute CRI 104 - Standard for Installation of Commercial Carpet.

B. Verify carpet match before cutting to ensure minimal variation between dye lots.

C. Lay out carpet and locate seams in accordance with shop drawings:
   1. Locate change of color or pattern between rooms under door centerline.
   2. Provide monolithic color, pattern, and texture match within each contiguous area.

D. Install carpet by direct glue-down method as recommended by manufacturer.

E. Complete installation of edge strips, concealing exposed edges.

F. Cleaning:
   1. Remove excess adhesive from floor, base, and wall surfaces without damage.
   2. Clean and vacuum carpet surfaces.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 09900

PAINTS AND COATINGS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes surface preparation and field application of paints stains, varnishes, and other coatings.

1.2 SUBMITTALS

A. Product Data: Submit data on finishing products.

B. Colors/materials will NOT be selected until ALL color submissions have been made so that a full color scheme may be developed at once.

C. Multiple color schemes/combinations will be chosen throughout the project and may include but are not limited to accent walls and may vary from area to area.

1.3 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit maintenance and cleaning instructions.

1.4 QUALITY ASSURANCE

A. Supplier: Company specializing in manufacturing products specified in this section with minimum three years documented experience, and with service facilities within 100 miles of Project.

B. Installer: Company specializing in performing Work of this section with minimum three years experience.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Store and apply materials in environmental conditions required by manufacturer's instructions.

PART 2 PRODUCTS

2.1 PAINTS AND COATINGS

A. Manufacturers:
   1. Sherwin Williams
   2. Substitutions: Permitted.

2.2 COMPONENTS

A. Coatings: Ready mixed except field catalyzed coatings of good flow and brushing properties, capable of drying or curing free of streaks or sags.

B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials required to achieve finishes specified.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify substrate conditions are ready to receive Work.

B. Measure moisture content of porous surfaces using electronic moisture meter. Do not apply finishes unless moisture content is less than 15 percent.

3.2 PREPARATION

A. Correct minor defects and clean surfaces affecting work of this section.

B. Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or applying finishes.

C. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.

D. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Prime with acrylic primer.

E. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove foreign matter. Remove oil and grease with solution of tri-sodium phosphate, rinse well and allow to dry.

F. Uncoated Steel and Iron Surfaces: Remove scale by wire brushing, sandblasting, clean by washing with solvent. Apply treatment of phosphoric acid solution. Prime paint after repairs.

G. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Clean surfaces with solvent. Prime bare steel surfaces.

H. Interior Wood Items Scheduled to Receive Paint Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats.

I. Interior Wood Items Scheduled to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats.

J. Exterior Wood Scheduled to Receive Paint Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior paintable caulking compound after prime coat has been applied.

K. Exterior Wood Scheduled to Receive Transparent Finish: Remove dust, grit, and foreign matter; seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes with tinted exterior caulking compound after sealer has been applied.

3.3 APPLICATION

A. Wall **SURFACE (not just air)** temperature to be a minimum of 55 degrees. Touch up to be performed at the same wall surface temperature +/- 5 degrees.

B. Sand wood and metal surfaces lightly between coats to achieve required finish.

C. Where clear finishes are required, tint fillers to match wood.

D. Prime concealed surfaces of interior and exterior woodwork with primer paint.

E. Prime concealed surfaces of interior wood surfaces scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with thinner.

F. Finishing Mechanical And Electrical Equipment:
1. Paint shop primed equipment.
2. Remove unfinished louvers, grilles, covers, and access panels and paint separately. Paint dampers exposed behind louvers, grilles, convector and baseboard cabinets to match face panels.
3. Prime and paint insulated and exposed pipes, insulated and exposed ducts, hangers, brackets, collars and supports.
4. Paint interior surfaces of air ducts visible through grilles and louvers with one coat of flat black paint to visible surfaces.
5. Paint exposed conduit and electrical equipment occurring in finished areas.
6. Paint both sides and edges of plywood backboards.
7. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

G. Cleaning: As work proceeds, promptly remove finishes where spilled, splashed, or spattered.

3.4 SCHEDULE - SHOP PRIMED ITEMS FOR SITE FINISHING

A. Metal Fabrications Section 05500: Exposed surfaces of lintels, Elevator pit ladders, etc…

Steel - Unprimed:
1. One coat of Pro Industrial Pro-Cryl Universal Primer B66-310.
2. Two coats of Duration Exterior Acrylic Coating.

3.1 SCHEDULE - EXTERIOR SURFACES – Sherwin Williams or equal.

A. Exterior Concrete Masonry surfaces:
1. One coat Loxon Block Surfacer A24W200 primer.
2. Two coats of Duration Exterior Acrylic Coating.

B. Steel - Shop Primed:
1. Touch-up with Pro Industrial Pro-Cryl Universal Primer B66-310.
2. Two coats of Duration Exterior Acrylic Coating.

C. Steel - Unprimed:
1. One coat of Pro Industrial Pro-Cryl Universal Primer B66-310.
2. Two coats of Duration Exterior Acrylic Coating.

3.2 SCHEDULE - INTERIOR SURFACES Sherwin Williams or equal.

A. Steel - Unprimed:
1. One coat of Pro Industrial Pro-Cryl Universal Primer B66-310.
2. Two coats of Duration Interior Acrylic Coating.

B. Steel - Primed:
1. Touch-up with Pro Industrial Pro-Cryl Universal Primer B66-310.
2. Two coats Duration Interior Acrylic Coating.

C. Interior Concrete Masonry surfaces:

1. One coat of Loxon Masonry Block Primer Sealer A24W8300.

2. Two coats of Duration Interior Acrylic Coating.

D. Gypsum Board:
1. One coat of ProMar 200 Primer.
2. Two coats of Duration Interior Acrylic Coating.

3.3 SCHEDULE – COLORS

A. A minimum of 25% of the spaces in the project are to receive two different wall colors within the space. Locations and delineations of each will be determined by the Architect.

B. A minimum of FOUR (4) different color groups (base color with accent wall/feature) will be used on the interior surfaces of this project. Locations and delineations of each will be determined by the Architect.

C. To be determined from manufacturer's standard colors. See finish schedule and interior elevations for additional information on the extents of different colors. If not delineated in the drawings then extents of colors to be determined by the Architect.

END OF SECTION

SECTION 10005

MISCELLANEOUS SPECIALTIES

PART 1 GENERAL

1.1 SUMMARY

A. Section includes; signage; fire extinguishers; fire extinguisher cabinets.

1.2 SUBMITTALS

A. Shop Drawings: Dimensions, details of blocking and attachment, and anchors.

B. Product Data: Submit data on Product, and accessories.

1.3 CLOSEOUT SUBMITTALS

A. Operating and Maintenance Data: Submit instructions for recharging fire extinguishers.

B. Submit cleaning and care instructions for signage.

1.4 QUALITY ASSURANCE

A. Fire Extinguishers: Conform to NFPA 10.

PART 2 PRODUCTS

2.1 MISCELLANEOUS SPECIALTIES

A. Fire Extinguisher Manufacturers:
1. Larsen's Model MP10.
2. Larsen's Architectural Model 2409-R4
3. Substitutions: Permitted.

B. Interior Signage:
1. Best Sign Systems – Graphic Blast MP
2. Substitutions: Permitted.

C. Exterior Signage:
1. Accessible Parking, Van Accessible Parking, post mounting.

2.2 COMPONENTS

A. Fire Extinguishers:
Dry Chemical Type: steel tank, with pressure gage; Model MP10 manufactured by Larsen's, with semi-recessed cabinet. Provide units as per architectural plans.

B. Fire extinguisher cabinets:

Semi-recessed full glass door, Brushed Aluminum finish equal to Larsen's Architectural, model 2409-R4. Size cabinet to accommodate extinguisher listed above. Letter cabinet door vertically in white: "FIRE EXTINGUISHER". Provide cabinets to be installed in frame wall construction as shown on architectural plans.

C. Standard Room Signage:
1. ¼" x 6" x 8" panel size
2. 1/32" engraved raised
3. Graphic male, female, handicapped symbol required.
4. Modified acrylic plastic – matte finish
5. Single faced, color to be selected from manufacturers standard colors.
6. Type Style: 5/8" Helvetica, color to be selected from manufacturers standard colors.
7. Grade II Braille

D. Exterior Signage:
1. 12"wide x 18"high x .080" minimum thickness panel size
2. Green lettered and border stipe– "RESERVED PARKING", "VAN ACCESSIBLE" for the first accessible location and one for each six locations after the first.
3. Green lettered and border stripe – "RESERVED PARKING" for each accessible parking location beyond the van accessible spaces.
4. Blue symbol – blue square with the international accessibility symbol cut out.
5. Post mounting – 1 ½" hot dipped galvanized steel pipe inside a 6" O.D. by 60" painted steel pipe filled with concrete extending 24" below grade, 36" above surrounding grade. Entire assembly mounts in a 12" diameter by 30" deep hole filled with concrete.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify surfaces and internal wall blocking are ready to receive work and opening dimensions are as instructed by manufacturer.

2.3 SCHEDULE

A. Fire extinguishers:
1. Provide and install fire extinquishers and cabinets as shown on architectural drawings.

B. Interior Signage:

1. Provide and install **twenty seven (27)** signs. Letter and locate as directed by architect.

C. Exterior Signage:

1. Provide and install one pipe or building mounted "van accessible" parking sign for every six or fraction of six accessible parking spaces. Locate as directed by architect.

2. Provide and install one pipe or building mounted "reserved parking" sign for every accessible parking space not enumerated at a "van accessible" space. Locate as directed by architect.

2.4 INSTALLATION

A. Secure units level and plumb.

B. Exterior signage to be mounted 72" to the top of the sign above surrounding grade.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 10155

TOILET COMPARTMENTS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes floor mounted, overhead braced, plastic laminate toilet compartments and urinal screens.

1.2 SUBMITTALS

A. Shop Drawings: Indicate partition plan and elevation views, dimensions, details of wall floor supports, and door swings. Indicate required ADA clearances.

B. Samples: Submit two samples 6x6 inches in size illustrating panel finish, color, and sheen.

PART 2 PRODUCTS

2.1 TOILET COMPARTMENTS

A. Manufacturers:
   1. Bradley Series 400 Sentinel, or approved equal.
   2. Substitutions: Permitted.

2.2 COMPONENTS

A. Door, Panel, and Pilaster Construction: Sandwich of high pressure decorative plastic laminate bonded to a solid industrial-grade particle board core, in standard color as selected.

B. Doors and Panels: 1 inch thick.

C. Pilasters: 1-1/4 inch thick.

2.3 ACCESSORIES

A. Head Rails: Headrail of etched and anodized aluminum shall be extruded with "anti-grip" profile clamps over pilasters and shall be secured to the wall with stainless steel brackets.

B. Pilaster Shoes: Formed 304 stainless steel. Provide adjustment for height variations with screw jack through steel saddles.

C. Internal reinforcement: Provide for attached hardware and fittings.

D. Attachments and Bolts: Steel, with heavy duty aluminum brackets.

E. Hardware:
1. Hinges: wrap-around through-bolted pivot hinges, gravity type, adjustable; two for each door.
2. Latch and Keeper: Sliding type latch, door strike and keeper with rubber bumper; for each door.
3. Coat Hook: Cast alloy, with rubber bumper tip; mounted on door.
4. Pull: furnish pull for outswinging doors.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify opening dimensions and plumbing fixture and rough-in locations are as indicated on shop drawings.

B. Verify correct location of built-in framing, anchorage, bracing, and blocking.

3.2 INSTALLATION

A. Install partition components secure, plumb, and level.

B. Attached panel brackets securely using anchor devices.

C. Adjust and align door hardware so free movement is attained.

END OF SECTION

SECTION 10800

TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

A. Section includes toilet, bath, shower, and washroom accessories.

1.2 SUBMITTALS

A. Product Data: Submit data on accessories describing size, finish, details of function, attachment methods.

PART 2 PRODUCTS

2.1 TOILET, BATH AND LAUNDRY ACCESSORIES

A. Manufacturers:
1. A & J Washroom Accessories.
2. American Specialties, Inc.
3. Bobrick Washroom Accessories.
4. Bradley Corp.
5. Builders Brass Works.
6. Franklin Brass Manufacturing Co.
7. Truebro Inc.
8. World Dryer Corp.
9. Substitutions: Permitted.

2.2 COMPONENTS

A. Products listed on Drawings are made by Bradley.

B. Furnish 4 keys for each accessory to Owner. Master key accessories.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify exact location of accessories for installation.

3.2 PREPARATION

A. Deliver inserts and rough-in frames to site. Provide templates and rough-in measurements.

B. Coordinate locations for installation of blocking reinforcing plates in walls.

3.3 INSTALLATION

A. Install plumb and level, securely and rigidly anchored to substrate.

B. Mounting Heights and Locations: As indicated on Drawings:

3.4 SCHEDULES:

Provide and install accessories as listed. Toilet arrangements are as shown in architectural plans. Mount as directed by architect.

A. Double toilet paper holder: Bradley: 5402 **(6 - six)** – mount bottom surface 21" above finish floor.

B. Paper towel dispenser: Bradley: 250-15 **(6 - six)** – mount bottom surface 44" above finish floor.

C. Sanitary napkin disposals: Bradley: 4781-15 **(1 - one)** – mount top surface 28" above finished floor.

D. Soap dispenser: Bradley 6563 **(6-six)** – mount bottom surface 44" above finish floor.

E. Channel Framed mirror 24"x36": Bradley 781 **(6 - six)** - mount bottom edge of reflecting surface 38" above finished floor.

F. 36" Grab Bar: Bradley: 812 **(2 - two)** – mount @ 34 ½" above finish floor.

G. 42" Grab Bar: Bradley: 812 **(4 - four)** – mount @ 34 ½" above finish floor.

H. 18" Grab Bar: Bradley: 812 **(2-two)** – mount vertical @ 40" above finish floor / 40" from toilet back wall.

I. Restroom signs: See Miscellaneous Specialties 10005.

END OF SECTION

SECTION 12355

CASEWORK

PART 1 GENERAL

1.1 SUMMARY

A. Section includes shop fabricated cabinet units and counter tops.

1.2 SUBMITTALS

A. Shop Drawings: Indicate casework locations, scale plans, elevations, and clearances required.

B. Product Data: Submit data on component profiles, sizes, assembly methods, and schedule of finishes.

C. Samples: Submit two panels, 12 x 12 inch in size illustrating cabinet and counter top finish.

D. Samples: Submit hardware samples.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with AWI (Architectural Woodwork Institute) standards.

1.4 ENVIRONMENTAL REQUIREMENTS

A. Install after interior temperature and humidity are controlled and stabilized.

PART 2 PRODUCTS

2.1 COMPONENTS

A. Adjustable Shelf Supports (unless otherwise noted in drawings): ¼" angular, with riveted pin and securing screw hole, bronzed.

B. Drawer and Door Pulls: Brass wire pull handles on 4 inch centers.

C. Hinges: Concealed self-closing, minimum 110 degree swing, three-way adjustable.

1. Doors up to 36" in height are to receive a minimum of 2 hinges.

2. Doors from 36" to 60" in height are to receive a minimum of 3 hinges.

3. Doors beyond 60" in height are to receive a minimum of 1 hinge for each 18" or portion thereof of door height.

D. Drawer Slides: Full extension, minimum 100 pound rated, epoxy coated.

2.2 FINISHING

A. Exposed To View Surfaces: Plastic Laminate of color and pattern to be selected.

B. Typical Countertops: Plastic Laminate of color and pattern to be selected, unless otherwise specified.

C. Interior Surfaces: Clear finished Birch, unless otherwise specified.

D. Typical Back and End Splashes: ALL countertops are to receive back and end splashes. Unless otherwise noted splashes are to be 2" x ¾" x length of countertop.

E. Stainless Steel Countertops: 14 gauge, type 316 stainless steel w/ #4 finish, over ¾" plywood backer, with integral 4 ½" x 1" backsplash at all wall junctions.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify adequacy of backing and location of mechanical and electrical outlets.

3.2 PREPARATION

A. Install supplementary support framing.

3.3 INSTALLATION

A. Set and secure casework in place rigid, plumb, and level.

B. Provide cutouts for plumbing fixtures, appliances, and other fixtures and fittings.

C. Use fixture attachments at concealed locations for wall mounted components.

D. Use concealed joint fasteners to align and secure adjoining cabinet units and counter tops.

E. Carefully scribe casework against other building materials, leaving gaps of 1/32 inch maximum. Use filler strips not additional overlay trim for this purpose.

F. Secure cabinet and counter bases to floor using appropriate anchorage.

G. Adjust moving or operating parts to function smoothly and correctly.

H. Install backsplashes and end splashes.

END OF SECTION

THIS

PAGE

INTENTIONALLY

LEFT

BLANK

SECTION 12492

BLINDS AND SHADES

PART 1 GENERAL

1.1 SUMMARY

A. Section includes horizontal wood slat louver blinds; and operating hardware.

1.2 SUBMITTALS

A. Product Data: Submit data indicating physical and dimensional characteristics, operating features, and manufacturer's standard colors for selection.

B. Samples: Submit two slat samples, 6 inch long illustrating slat materials and finish, color, cord wand type and color.

PART 2 PRODUCTS

2.1 HORIZONTAL LOUVER BLINDS

A. Manufacturers:
1. Bail Window Treatments.
2. Graber Window Treatments.
3. Hunter Douglas Window Fashions.
4. Levolor Contract.
5. Springs Windows Fashions.
6. Window Accessory Co., Inc.
7. Substitutions: Permitted.

2.2 COMPONENTS

A. Blinds: Horizontal slat louvers hung from full-width headrail with full-width bottom rail; manual control of raising and lowering by cord with full range locking; blade angle adjustable by control wand.

B. Wood Slats: equal to Levelor premium real wood collection or equal, with manufacturing burrs removed.
1. Width: 2 inch.
2. Color: Stain As selected.

C. Slat Support: Woven polypropylene cord, ladder configuration.

D. Headrail: Pre-finished, formed steel box, with end caps; internally fitted with hardware, pulleys, and bearings for operation; same depth as width of slats.
1. Color: Same as slats.

E. Lift Cord: Braided polypropylene; continuous loop.
   1. Free end weighted.
   2. Color: As selected.

F. Control Wand: Extruded hollow plastic.
   1. Removable type.
   2. Length 60" above finished floor.
   3. Color: As selected.

G. Headrail Attachment: As required.

2.3 FABRICATION

A. Fabricate blinds to fit within openings with uniform edge clearance of 3/8 inch.

B. Blinds not required at top pane of arch top windows.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify openings are ready to receive the Work.

3.2 SCHEDULE

A. All exterior windows are to receive blinds.

3.3 INSTALLATION

A. Secure in place with concealed fasteners.

B. Adjust blinds for smooth operation.

END OF SECTION

SECTION 13121

METAL BUILDING SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. **Structural steel frame**.

B. **Complete roof covering system** consisting of the exterior roof panels, panel attachments, sealants, mastics, trim and flashings as required.

C. **Complete wall covering system** consisting of the exterior wall panels, panel attachments, sealants, mastics, trim and flashings as required for a weathertight assembly.

1.2 RELATED SECTIONS

A. **Section 03050** - Cast-in-Place Concrete: Foundations and anchor bolts.

1.3 DEFINITIONS

A. **Building Width:** Measured from outside to outside of sidewall girts.

B. **Building Length:** Measured from outside to outside of endwall girts.

C. **Building Line:** Outside face of horizontal steel girt.

D. **Building Eave Height:** Measured from the intersection of the top of the roof framing and the outside of the wall framing to the bottom of the sidewall column base plate.

E. **Bay Spacing:** Measured from centerline to centerline of primary frames for interior bays and from centerline of the first interior frame to outside of endwall girts for endbays.

F. **Roof Pitch:** The ratio of the vertical rise to the horizontal run.

1.4 DESIGN REQUIREMENTS

A. **Design structural systems** according to professionally recognized methods and standards, and legally adopted building codes.

B. **Design under supervision of professional engineer** licensed in the state of the site the project.

1.5 SUBMITTALS

A. **Design Data:** Provide detailed design criteria and calculations.

B. **Certification:** Manufacturer certification that the building conforms to the contract documents and manufacturer's standard design procedures.

C. **Shop Drawings:** Show building layout, primary and secondary framing member sizes and locations, cross-sections, and product and connection details.

D. **Product Data:** Information on manufactured products to be incorporated into the project.

E. **Anchor Bolt Drawings:** Layouts with bolt diameters.

F. **Reactions:** Submit building reactions at each anchor bolt /column to slab / foundation location. Foundation is to be re-evaluated based on the reactions prior to construction.

1.6 WARRANTY

A. **Standard warranty** on materials and workmanship: 3 years.
1. Panel finish: 10 years

PART 2 PRODUCTS

2.1 METAL MATERIALS

A. **Select materials and material yield strengths** based on building design requirements; use the following unless required otherwise.

B. **Structural Steel Plate, Bar, Sheet, and Strip for Use in Bolted and Welded Constructions:** ASTM A 572 /A 570, A 529, ASTM A 607 with minimum yield strength of 50,000 psi (345 MPa).

C. **Structural Steel Material for Use in Roll Formed or Press Broken Secondary Structural Members:** ASTM A 570,or A 607 with minimum yield strength of 55,000 psi (380 MPa).

D. **Galvanized Steel Sheet for Roll Formed or Press Broken Roof and Wall Coverings, Trim and Flashing:** ASTM A 653, with minimum yield strength of 50,000 psi (345 MPa).

F. **Hot Rolled Steel Shapes:** W, M and S shapes, angles, rods, channels and other shapes; ASTM A 572/A 529/A 500 or ASTM A 36 as applicable; with minimum yield strengths required for the design.

G. **Structural Bolts and Nuts Used with Primary Framing:** High strength, ASTM A 325 or A 490.

H. **Bolts and Nuts Used with Secondary Framing Members:** ASTM A307.

I. **Shop Coat:** Manufacturer's standard rust inhibitive primer paint; manufacturer's standard color.

J. **Pre-Painted Finish:** 1 mil (0.025 mm) Kynar 500 coating on exterior surface.

1. Color: As selected from manufacturer's full line including premium colors.
2. Interior Finish: Off white 0.5 mil (0.01 mm) washcoat

2.2 FRAMING COMPONENTS

A. **Primary Framing:** Rigid Frame solid web framing consisting of tapered or uniform depth rafters rigidly connected uniform depth columns. Provide a clear span that supports the loads at bay spacings indicated.

B. **Endwall Framing:** Half-loaded frames unless otherwise indicated in architectural drawings.

C. **Purlins:** Zee-shaped; 6 ½", 8 ½ " and 11 ½" depth as required; with minimum yield strength of 55,000 psi (345 MPa); simple span or continuous span as required for design.

D. **Girts:** Zee- or Cee-shaped; 6 ½", 8 ½ " and depth as required, with minimum yield strength of 55,000 psi (345 MPa); simple span or continuous span as required for design.

E. **Transbay Members:** Open web, parallel chord, secondary joists; simple span, utilizing materials, sizes and yield strength as required.

F. **Wind Bracing:** Portal, torsional, diagonal bracing with or without diaphragm in accordance with manufacturer's standard design practices; utilizing rods, angles, and other members, with minimum yield strengths as required for design.

G. **Primary Frame Flange Bracing:** Attached from purlins or girts to the primary framing, minimum yield strength as required for design. Flange bracing is **not** allowed at exterior columns in **any** finished space and is **not** allowed below **10'-0"** above finished floor in any space.

H. **Door Headers and Jambs:** Zee- or Cee-shaped; depth as required; with minimum yield strength of 55,000 psi (380 MPa).

I. **Sag Angles and Bridging:** Steel angles, with minimum yield strength of 36,000 psi (250 MPa).

J. **Fabrication:** Fabricate according to manufacturer's standard practice.
   1. Fabricate structural members made of welded plate sections by joining the flanges and webs by continuous automatic submerged arc welding process.
   2. All welding operators and processes shall be qualified in accordance with the American Welding Society "Structural Welding Code", AWS D1.1.
   3. Field connections. Prepare members for bolted field connections by making punched, drilled, or reamed holes in the shop.

K. **Shop Coating:** Finish all structural steel members using one coat of manufacturer's standard shop coat, after cleaning of oil, dirt, loose scale and foreign matter.

2.3 ROOF AND WALL PANEL COMPONENTS

A. **Roof Panels: SSR Standing Seam Roof Panels**; 24 inches (610 mm) wide net coverage, with 3 inches (75 mm) high major ribs formed at the panel side laps, formed for field seaming using electrically operated seaming machine.
   1. Side Joints: Factory applied sealant for field seaming.
   2. Material: Galvalume steel.
   3. Thickness: 0.022" design base metal (0.61 mm).
   4. Thickness: 0.0273 design base metal (0.76 mm).
   5. Side laps: Two factory-formed interlocking ribs, with one weather sealed joint, mechanically field-seamed into place to form a double-fold 360 degree seam.
   6. Length: Continuous from eave to ridge up to 41 feet (12.5 m) in length.
   7. Endlaps, Where Required: 7 inches (178 mm) wide, located at a support member.
   8. Finish: KXL pre-painted finish, premium color.
   9. Panel-to-roof purlin structural attachments: SSR clips with movable tabs which interlock with seamed SSR panel ribs and provide for 1-5/8 inch (37mm) of panel movement in either direction from center of clip to compensate for thermal effects.
   10. Panels shall have been tested in accordance to ASTM E-1592.
   11. Panel fastening to meet uplift requirements shall be based on tested fastener values with appropriate Safety Factors.
   12. Purlin strength with the SSR roof panel shall be determined and tested in accordance with AISI procedures.

B. **Roof Panels: SLR Architectural Standing Seam Roof Panels**; 16 inches wide net coverage with major ribs formed at the panel side laps, for field seaming using electrically operated seaming machine.
   1. Material: Galvalume steel.
   2. Thickness: 0.0273" design base metal (0.76 mm), with 3 inch (75 mm) standing seam.
   3. Side Joints: Factory applied sealant for field seaming.
   4. Length: Continuous from eave to ridge up to 41 feet (12.5 m) in length.
   5. Endlaps, Where Required: 5 inches (150 mm) wide, staggered at least one purlin space.
   6. Finish: KXL pre-painted finish, premium color.
   7. Panel-to-roof purlin structural attachments: SLR clips, with movable tabs that interlock with seamed SLR panel ribs and provide 1 inch (25 mm) of panel movement in either direction from center of clip to compensate for thermal effects.

C. **Wall Panels: Panel Rib**; 36 inch (915 mm) wide net coverage, with 1-3/16 inch (30 mm) high major ribs at 12 inches (305 mm) on center with minor ribs spaced between the major ribs.
   1. Material: Galvalume steel
   2. Material: Galvanized steel, with G90/Z275 coating.
   3. Side laps: Two fully overlapping major ribs secured together with 1/4 inch (6 mm) diameter color-matched carbon steel fasteners.
   4. Length: Continuous from sill to eave up to 41 feet (12.5 m) in length.
   5. Endlaps, Where Required: 4 inches (100 mm) wide, located at a support member.
   6. Crimp panels at the base and notch to match roof panel configuration at the eave.
   7. Cut panels square at each end; provide base trim at sill.
   8. Finish: KXL pre-painted finish.

D. **Flashing and Trim:** Match material and color of adjacent components. Provide trim at rakes, including peak and corner assemblies, high and low eaves, corners, bases, framed openings and as required or specified to provide weathertightness and a finished appearance.

E. **Plastic Parts:** Glass fiber reinforced resin or thermoformed ABS (Acrylonitrile-Butidene-Styrene).
1. ABS: Minimum 1/8 inch (3 mm) thick.
2. Color: Manufacturer's standard color.

F. **Sealants, Mastics and Closures**:
1. Provide at roof panel endlaps, sidelaps, rake, eave, transitions and accessories as required to provide a weather resistant roof system; use tape mastic or gunnable sealant at sidelaps and endlaps.
2. Provide at wall panel rakes, eaves, transitions and accessories.
3. Closures: Formed to match panel profiles; closed cell elastic material, manufacturer's standard color.
4. Tape Mastic: Pre-formed butyl rubber-based, non-hardening, non-corrosive to metal; white or light gray.
5. Gunnable Sealant: Non-skinning synthetic elastomer based material; gray or bronze.

G. **Blanket Insulation:** SEE ADDITIONAL REQUIREMENTS FOR PERFORMANCE RATED INSULATION SYSTEM BELOW. Glass fiber, with factory laminated facing material.
1. Glass fiber: Odorless, neutral colored, long filament, flexible resilient, produced in compliance with the NAIMA 202 specifications.
2. Thermal Resistance: to meet R=13 walls, R=19 roof, @ 75 degrees F mean temperature.
3. Flame spread Index: 25 or less, when tested in accordance with UL 723.
4. Smoke Developed Index: 50 or less, when tested in accordance with UL 723.
5. UL Classified.
6. Facing: White vinyl; embossed, 0.0032 inch (0.08 mm) +/- 10%thick; permeance in compliance with ASTM E96 1.00 perm (57 ng/Pa s sq m). Composite fiberglass and facing to meet Flame Spread of 25 or less, Smoke Developed of 50 or less, when tested in accordance with UL 723.
7. Provide facing 3 inches (75 mm) wider on both edges than blanket.
8. Width: As required for installation.
9. Use blanket insulation at walls. (R13)
10. Use blanket insulation at roof. (R19)

H. **Thermal Blocks:** High density, 3/4 inch (19 mm) thick extruded polystyrene, for installation over the purlin.

I. **Soffit Panels: VP002 Architectural Soffit Panels**; 12 inch (305 mm) wide net coverage, with two 6 inch (150 mm) wide flat surfaces in the same plane separated by a V-groove at 6 inches (150 mm) on center after adjacent panels have been installed.
1. Material: Galvanized steel with G90/Z275 coating.
2. Thickness: 0.022" design base metal (0.61 mm).

3. Side Joints: Factory applied gasket; tongue-in-groove connection with adjacent panels, with the connection reinforced by clips.
4. Panel Length: 10 feet (3048 mm), maximum.
5. Finish: KXL pre-painted finish.

J. **Simple Saver System: Insulation system;** In addition to glass fiber insulation noted above – all building areas are to receive additional insulation and backing in the form of the "Simple Saver System" roof and wall insulation and finish system as manufactured by Thermal Design Inc. of Madison, Nebraska or approved equal. Assembled system to comply with R values listed above regarding overall rated performance of the assembly.

1. Suspension fabric and retainer grid color to be selected from manufacturers standard colors.

K. **Wall Panels: Stucco**; 16 inch wide net coverage, with tongue & groove fit.

1. Material: Galvanized steel
2. Primed & painted both sides, baked on base coat.
3. Textured finish equal to Varco Pruden Textureclad, factory applied.
4. Length: Continuous from sill to eave up to 26 feet in length.
5. Cut panels square at each end; provide base trim at sill.
6. Warranty: 20 year for panel and finish.

2.4 ROOF ACCESSORIES

A. **Eave Gutters:** Roll-formed 26 gage (0.45 mm) steel sheet, with gutter straps, fasteners and joint sealant; manufacturer's standard bronze color.

1. Downspouts: 4 x 5 inches (100 by 125 mm) in 10 foot (3050 mm) lengths, with downspout elbows and downspout straps;

PART 3 EXECUTION

3.1 EXAMINATION

A. **Verify that foundations are installed correctly.**

B. **Verify that anchor bolts are installed as indicated on anchor bolt shop drawings.**

3.2 ERECTION

A. **Erect building system** in accordance manufacturer's instructions, erection drawings, and other erection documents.

B. **Provide temporary bracing, shoring, blocking, bridging and securing of components** as required during the erection process.

END OF SECTION

SECTION 13900

FIRE SUPPRESSION

PART 1 GENERAL

1.1 SUMMARY

A. Section includes complete fire suppression system including sprinkler system, and fire department connections.

1.2 SYSTEM DESCRIPTION

A. Sprinkler System: Conform to the following criteria:
   1. Coverage for entire addition.
   2. Design system to NFPA 13.
   3. System performance to achieve occupancy requirements.

1.3 SUBMITTALS

A. Shop Drawings: Indicate pipe layout, supports, components, accessories, sizes, and hydraulic calculations.

B. Product Data: Submit data for pipe materials used, valves, manufacturer's catalog sheet for equipment indicating rough-in size, finish, accessories, pump type, capacity, power requirements, and NPSH.

C. Samples: Submit two sprinklers of each type specified.

D. Manufacturer's Certificate: Certify system has been tested and meets or exceeds code requirements.

1.4 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record actual locations of sprinkler heads.

B. Operation and Maintenance Data: Submit description of components of system, servicing requirements, record drawings, inspection data, and parts lists.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with:
   1. Sprinkler Systems: NFPA 13.

PART 2 PRODUCTS

2.1 PIPE AND TUBE

A. Steel Pipe: ASTM A53/A53M, Grade B, ASTM A135, or ASME B36.10M, Schedule 10 or 40 black.
   1. Steel Fittings: ASME B16.9, wrought steel, butt welded; ASME B16.25, butt weld ends; ASTM A234/A234M, wrought carbon steel and alloy steel; ASME B16.5, steel flanges and fittings; ASME B16.11, forged steel socket welded and threaded.
   2. Cast Iron Fittings: ASME B16.1, flanges and fittings; ASME B16.4, threaded fittings.
   3. Malleable Iron Fittings: ASME B16.3, threaded type; ASTM A47/A47M.
   4. Mechanical Grooved Couplings: Malleable iron housing, "C" shaped elastomeric sealing gasket, steel bolts, nuts, and washers; galvanized for galvanized pipe.

B. Steel Pipe: ASTM A53/A53M, Grade B, ASTM A135, or ASTM A795 Schedule 5 black.
   1. Steel Fittings: Cold drawn steel, mechanically attached, with butylene or EPDM O-ring.

C. Steel Pipe: ASTM A135 Grade A, ULC threadable thin wall, black.
   1. Cast Iron Fittings: ASME B16.1, flanges and fittings;
   2. Malleable Iron Fittings: ASME B16.3 threaded type.

D. Copper Tubing: ASTM B75, ASTM B88, or ASTM B251, Type M or L hard drawn.
   1. Fittings: ASME B16.18, cast bronze, or ASME B16.22, wrought copper and bronze, solder joint, pressure type.
   2. Joints: AWS A5.8, silver braze.
   3. Mechanical Grooved Couplings: Ductile iron housing with alkyd enamel paint coating clamps to engage and lock, "C" shaped elastomeric sealing gasket, steel bolts, nuts, and washers.

2.2 GATE VALVES

A. Up to and including 2 inches: Bronze body and trim, rising stem, hand wheel, solid wedge or disc, threaded ends.

B. Over 2 inches: Iron body, bronze trim, rising stem pre-grooved for mounting tamper switch, hand wheel, OS&Y, solid bronze or cast iron wedge, flanged or grooved ends.

2.3 BUTTERFLY VALVES

A. Bronze body, stainless steel disc, resilient replaceable seat, threaded ends, extended neck, hand wheel and gear drive and integral indicating device.

2.4 CHECK VALVES

A. Up to and including 2 inches: Bronze body and swing disc, rubber seat, threaded ends.

B. Over 2 inches: Iron body, bronze trim, swing check with rubber disc, renewable disc and seat, flanged ends with automatic ball check.

C. 4 inches and Over: Iron body, bronze disc with stainless steel spring, resilient seal and threaded, wafer or flanged ends.

2.5 DRAIN VALVES

A. Bronze compression stop with hose thread nipple and cap.

B. Brass ball valve with cap and chain, 3/4 inch hose thread.

2.6 SPRINKLERS

A. Suspended Ceiling Type: Standard pendant type with chrome plated finish, and matching escutcheon.

B. Exposed Area Type: Standard upright type with chrome plated finish.

C. Sidewall Type: Standard horizontal sidewall type chrome plated finish with matching escutcheon.

D. Guards: Finish to match sprinkler head.

2.7 SPRINKLER PIPING SPECIALTIES

A. Wet Pipe Sprinkler Alarm Valve: Check type valve with electrically or hydraulically operated alarms, with pressure retard chamber and variable pressure trim.

B. Flooding Deluge Valve: Gate type valve, actuated pneumatically with electrically or hydraulically operated alarms, with alarm testing trim.

C. Electric Alarm: Electrically operated red enameled gong with pressure alarm switch.

D. Water Flow Switch: Vane type switch with two contacts.

2.8 FIRE DEPARTMENT CONNECTION

A. Type: Free standing type with ductile iron pedestal red enamel finish.

B. Outlets: Two way with thread size to suit fire department hardware; threaded dust cap and chain of matching material and finish.

C. Drain: 3/4 inch automatic drip, to outside.

D. Label: "Sprinkler - Fire Department."

2.9 ELECTRICAL CHARACTERISTICS AND COMPONENTS

A. Section 16100 - Wiring Methods: Requirements for electrical characteristics.

B. Disconnect Switch: Factory mount on equipment.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install in accordance NFPA 13.

B. Ream pipe and tube ends to full inside diameter. Remove burrs and bevel plain end ferrous pipe.

C. Remove scale and foreign material, inside and outside, before assembly.

D. Install sleeves where penetrating footings, floors, or walls. Seal pipe and sleeve penetration to maintain fire resistance equivalent to fire separation of footings, floors, or walls.

E. Install pipe runs to minimize obstruction to other work. Offset around ductwork.

F. Install gate valves for shut-off or isolating service.

G. Install drain valves at main shut-off valves, low points of piping and apparatus.

H. Connect system to water source ahead of domestic water connection with reduced pressure back flow preventer assembly.

I. Protection:
1. Apply temporary tape or paper cover to sprinkler heads to protect from painting.
2. Protect concealed sprinkler head cover plates from painting.

J. Interface sprinkler system with building fire and smoke alarm system.

K. Locate fire department connection with sufficient clearance from walls, obstructions, or adjacent Siamese connectors to allow full swing of fire department wrench handle.

L. Flush entire piping system of foreign matter.

M. Hydrostatically test entire system. Schedule test to be witnessed by Fire Marshall.

END OF SECTION