

ARKANSAS STATE CAPITOL SECURE WALKWAY & MECHANICAL ROOM ADDITION

500 WOODLANE STREET
LITTLE ROCK, AR 72201

State Capitol Building

PROJECT MANUAL EARLY SITE PACKAGE

Architect

WER Architects
901 West Third Street
Little Rock, Arkansas 72201
(501) 374-5300

Civil/ Landscape Consultant

Development Consultants, Inc.
2200 North Rodney Parham Road, Suite 220
Little Rock, Arkansas 72212
(501) 221-7880

MEPF&S Consultant

Cromwell
1300 East 6th Street
Little Rock, Arkansas 72202
(501) 372-2900

General Contractor

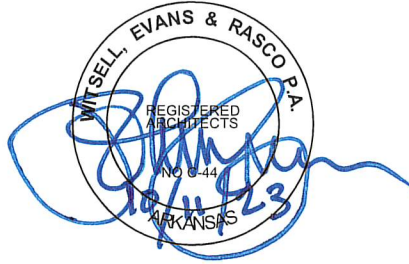
Kinco Constructors.
12600 Lawson Road
Little Rock, Arkansas 72210
(501) 225-1028

October 11, 2023
CAPTUN23.00

SECTION 00 0105
CERTIFICATIONS PAGE

ARCHITECT

I HEREBY CERTIFY THAT THIS PROJECT MANUAL WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF ARKANSAS.



NAME: JOHN GREER JR., AIA DATE: 10/11/2023 REG NO: C-44

END OF CERTIFICATIONS PAGE

TABLE OF CONTENTS

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

00 0105	CERTIFICATIONS PAGE
00 0110	TABLE OF CONTENTS
00 4905	OTHER CONTRACT FORMS
00 5200	AGREEMENT FORM
00 6100	PERFORMANCE BOND AND PAYMENT BOND
00 6110	CONSENT OF SURETY
00 6120	RELEASE OF LIENS
00 6325	SUBSTITUTION REQUEST FORM
00 7200	GENERAL CONDITIONS
00 7300	SUPPLEMENTARY GENERAL CONDITIONS

DIVISION 01 - GENERAL REQUIREMENTS

01 1000	SUMMARY
01 1400	WORK RESTRICTIONS
01 2000	PRICE AND PAYMENT PROCEDURES
01 2500	SUBSTITUTION PROCEDURES
01 3000	ADMINISTRATIVE REQUIREMENTS
01 3216	CONSTRUCTION PROGRESS SCHEDULE
01 3300	SUBMITTAL PROCEDURES
01 4000	QUALITY REQUIREMENTS
01 4216	DEFINITIONS
01 5000	TEMPORARY FACILITIES AND CONTROLS
01 5930	SECURITY REGULATIONS
01 5950	SAFETY AND HEALTH
01 6000	PRODUCT REQUIREMENTS
01 7000	EXECUTION REQUIREMENTS
01 7310	CUTTING AND PATCHING
01 7350	FIRE PREVENTION PRECAUTIONS FOR HOT WORK
01 7800	CLOSEOUT SUBMITTALS

DIVISION 31 – EARTHWORK

31 1100	CLEARING & GRUBBING
31 2000	EARTH MOVING
31 2100	SITE PREPARATION
31 2216	FINE GRADING
31 2316	EXCAVATION
31 2500	EROSION AND SEDIMENTATION CONTROLS
31 4000	SHEETING AND SHORED EXCAVATIONS

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 1200	FLEXIBLE PAVEMENT
32 1313	CONCRETE PAVING
32 1376	SIDEWALKS
32 1613	CONCRETE CURB & GUTTER
32 1700	PAVEMENT MARKINGS & CONTROL DEVICES

32 1723 PAVEMENT MARKINGS

DIVISION 33 – UTILITIES

33 4000 STORM DRAINAGE UTILITIES

**SECTION 00 4905
OTHER CONTRACT FORMS**

THE FOLLOWING FORMS ARE ATTACHED FOLLOWING THIS SECTION:

RESTRICTION OF BOYCOTT OF ISRAEL CERTIFICATION FORM

This is a mandatory requirement. Failure to certify may result in rejection of your proposal, and no award will be made to a vendor who has not so certified. If you have any questions, please contact the Purchasing Department.

CONTRACT AND GRANT DISCLOSURE CERTIFICATION FORM

This is a mandatory requirement. Failure to certify may result in rejection of your proposal, and no award will be made to a vendor who has not so certified. If you have any questions, please contact the Purchasing Department.

END OF SECTION

RESTRICTION OF BOYCOTT OF ISRAEL CERTIFICATION

Pursuant to Arkansas Code Annotated § 25-1-503, a public entity **shall not** enter into a contract valued at \$1,000 or greater with a company unless the contract includes a written certification that the person or company is not currently engaged in, and agrees for the duration of the contract not to engage in, a boycott of Israel.

By signing below, the Contractor agrees and certifies that they do not boycott Israel and will not boycott Israel during the remaining aggregate term of the contract.

If a company does boycott Israel, see Arkansas Code Annotated § 25-1-503.

Bid Number/Contract Number	
Description of product or service	
Contractor name	

Contractor Signature: _____
Signature must be hand written, in ink

Date: _____

CONTRACT AND GRANT DISCLOSURE AND CERTIFICATION FORM

Failure to complete all of the following information may result in a delay in obtaining a contract, lease, purchase agreement, or grant award with any Arkansas State Agency.

SUBCONTRACTOR:

SUBCONTRACTOR NAME:

Yes No

IS THIS FOR:

Goods? Services? Both?

TAXPAYER ID NAME:

YOUR LAST NAME:

FIRST NAME:

M.I.:

ADDRESS:

CITY:

STATE:

ZIP CODE:

COUNTRY:

AS A CONDITION OF OBTAINING, EXTENDING, AMENDING, OR RENEWING A CONTRACT, LEASE, PURCHASE AGREEMENT, OR GRANT AWARD WITH ANY ARKANSAS STATE AGENCY, THE FOLLOWING INFORMATION MUST BE DISCLOSED:

FOR INDIVIDUALS *

Indicate below if: you, your spouse or the brother, sister, parent, or child of you or your spouse is a current or former: member of the General Assembly, Constitutional Officer, State Board or Commission Member, or State Employee:

Position Held	Mark (√)		Name of Position of Job Held [senator, representative, name of board/ commission, data entry, etc.]	For How Long?		What is the person(s) name and how are they related to you? [i.e., Jane Q. Public, spouse, John Q. Public, Jr., child, etc.]	
	Current	Former		From MM/YY	To MM/YY	Person's Name(s)	Relation
General Assembly							
Constitutional Officer							
State Board or Commission Member							
State Employee							

None of the above applies

FOR AN ENTITY (BUSINESS) *

Indicate below if any of the following persons, current or former, hold any position of control or hold any ownership interest of 10% or greater in the entity: member of the General Assembly, Constitutional Officer, State Board or Commission Member, State Employee, or the spouse, brother, sister, parent, or child of a member of the General Assembly, Constitutional Officer, State Board or Commission Member, or State Employee. Position of control means the power to direct the purchasing policies or influence the management of the entity.

Position Held	Mark (√)		Name of Position of Job Held [senator, representative, name of board/commission, data entry, etc.]	For How Long?		What is the person(s) name and what is his/her % of ownership interest and/or what is his/her position of control?		
	Current	Former		From MM/YY	To MM/YY	Person's Name(s)	Ownership Interest (%)	Position of Control
General Assembly								
Constitutional Officer								
State Board or Commission Member								
State Employee								

None of the above applies

Contract and Grant Disclosure and Certification Form

Failure to make any disclosure required by Governor's Executive Order 98-04, or any violation of any rule, regulation, or policy adopted pursuant to that Order, shall be a material breach of the terms of this contract. Any contractor, whether an individual or entity, who fails to make the required disclosure or who violates any rule, regulation, or policy shall be subject to all legal remedies available to the agency.

As an additional condition of obtaining, extending, amending, or renewing a contract with a state agency I agree as follows:

1. Prior to entering into any agreement with any subcontractor, prior or subsequent to the contract date, I will require the subcontractor to complete a **CONTRACT AND GRANT DISCLOSURE AND CERTIFICATION FORM**. Subcontractor shall mean any person or entity with whom I enter an agreement whereby I assign or otherwise delegate to the person or entity, for consideration, all, or any part, of the performance required of me under the terms of my contract with the state agency.

2. I will include the following language as a part of any agreement with a subcontractor:

Failure to make any disclosure required by Governor's Executive Order 98-04, or any violation of any rule, regulation, or policy adopted pursuant to that Order, shall be a material breach of the terms of this subcontract. The party who fails to make the required disclosure or who violates any rule, regulation, or policy shall be subject to all legal remedies available to the contractor.

3. No later than ten (10) days after entering into any agreement with a subcontractor, whether prior or subsequent to the contract date, I will mail a copy of the **CONTRACT AND GRANT DISCLOSURE AND CERTIFICATION FORM** completed by the subcontractor and a statement containing the dollar amount of the subcontract to the state agency.

I certify under penalty of perjury, to the best of my knowledge and belief, all of the above information is true and correct and that I agree to the subcontractor disclosure conditions stated herein.

Signature _____ Title _____ Date _____

Vendor Contact Person _____ Title _____ Phone No. _____

Agency use only

Agency Number _____ Agency Name _____ Agency Contact Person _____ Contact Phone No. _____ Contract or Grant No. _____

**SECTION 00 5200
AGREEMENT FORM**

PART 1 GENERAL

1.01 FORM OF AGREEMENT

1.02 THE AIA A101 - 2017 STANDARD AGREEMENT WILL BE USED AS THE BASIS OF THE FORM OF AGREEMENT FOR THIS PROJECT. COPIES OF THIS STANDARD DOCUMENT ARE AVAILABE AT SOUTHERN REPROGRAPHICS OR WER ARCHITECTS IF DESIRED OR NEEDED PRIOR TO BID DATE.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF AGREEMENT

**SECTION 00 6000
PERFORMANCE BOND AND PAYMENT BOND**

V.20

We _____, hereinafter referred to as Principal and _____, hereinafter referred to as Surety, are held and firmly bound unto the Secretary of State, as obligee, hereinafter referred to as Owner, in the amount of \$ _____, said amount to be deemed a performance bond payable to Owner under the terms of this Performance and Payment Bond Agreement. The Principal and Surety state that the Surety is a solvent corporate surety company authorized to do business in the State of Arkansas.

Principal has by written agreement dated _____ entered into a Contract (the Contract) with the Owner for:

_____. The above referenced Contract is incorporated herein by reference.

Under this Performance and Payment Bond Agreement, the Principal and Surety shall be responsible for the following:

- a. The principal shall faithfully perform the above reference contract, which is incorporated herein by reference and shall pay all indebtedness for labor and materials furnished or performed under the contract.
- b. In the event that the principal fails to perform the contract, the principal and the surety, jointly and severally, shall indemnify and save harmless the owner from all cost and damage which the owner may suffer by reason of principal's failure to perform the contract. Said indemnification shall include, but not be limited to, full reimbursement and repayment to the owner for all outlays and expenses which the owner may incur in making good any such default or failure to perform the contract by the principal.
- c. Principal shall pay all persons all indebtedness for labor or material furnished or performed under the contract and in doing so this obligation shall be null and void. In the event that principal fails to pay for such indebtedness, such persons shall have a direct right of action against the principal and surety, jointly and severally, under this obligation, subject to the owner's priority.

This bond given in accordance with Arkansas laws and regulations (including Ark. Code Ann. §18-44-503, §19-4-1405 and § 22-9-401 et seq.). The Surety guarantees that the Principal shall comply with Ark. Code Ann. § 22-9-308 (d) by payment and full compliance with all prevailing hourly wage contract provisions where the contract amount exceeds the amount provided in Ark. Code Ann. § 22-9-302(1).

Any alteration which may be made in the terms of the Contract, or in the work to be done under it, or the giving by the Owner of any extension of time for the performance of the contract, or any other forbearance on the part of either the Owner or the Principal to the other shall not in any way release the Principal and the Surety or Sureties or either or any of them, their heirs, personal representatives, successors or assigns from their liability hereunder, notice to the Suety or Sureties of any such alteration, extension or forbearance being hereby waived. In no event shall the aggregate liability of the Surety exceed the amount provided in the Contract.

This Performance and Payment Bond Agreement is binding upon the above named parties, and their successors, heirs, assigns and personal representatives.

Executed by the parties who individually represent that each has the authority to enter into this agreement.

BY: _____

CONTRACTOR DATE

BY: _____

AGENT/ATTORNEY-IN-FACT DATE

(IN ACCORDANCE WITH ARK. CODE ANN. §22-9-402(B))

AGENT DATE

ADDRESS

CITY COUNTY STATE ZIP CODE

BUSINESS PHONE: _____

FAX: _____

MAIL: _____

THIS FORM IS THE ONLY PERFORMANCE AND PAYMENT BOND ACCEPTABLE TO THE OWNER

PERFORMANCE AND PAYMENT BOND

AMENDMENT # ___

We, _____ hereinafter referred to as Principal, and _____ hereinafter referred to as Surety, have entered into an agreement entitled "Performance and Payment Bond", with the Secretary of State as obligee hereinafter after known as Owner Agency. Futhermore, we agree that said bond agreement, which was filed in the county of _____ on the _____ day of _____, 20__ and this amendment # ___ is hereby incorporated into said bond agreement and any previous amendments(s) therein. This amendment shall be upon the same terms and conditions as set forth in the Bond Agreement, including any amendments, except the Agreement shall be amended and modified as follows:

1. The total aggregate amount for the Bond Agreement shall be \$ _____ dollars. This amended amount reflects those costs, time for completion and other terms of the Contract associated with said bond agreement and Change Order(s) # _____ for the project contract entered into between Principal and Owner Agency.
2. This Performance and Payment Bond Agreement Amendment is binding upon the above named parties, and their successors, heirs, assigns and personal representatives. The Bond Agreement as hereby extended, amended and modified is hereby ratified and confirmed by the parties who individually represent that each has the authority to enter into this amended agreement.

BY: _____

CONTRACTOR _____ DATE _____

BY: _____

ARKANSAS RESIDENT LOCAL AGENT/ATTORNEY-IN-FACT _____ DATE _____

(in accordance with Arkansas Code Annotated §22-9-402(b)(1)(2))

AGENT _____ DATE _____

ADDRESS _____ BUSINESS PHONE/FAX # _____

CITY _____ COUNTY _____ STATE ZIP CODE _____

ARKANSAS STATUTORY PERFORMANCE AND PAYMENT BOND AMENDMENT IS THE ONLY BOND AMENDMENT FORM THE OWNER WILL ACCEPT.

END OF SECTION

**SECTION 00 6110
CONSENT OF SURETY**

FORM OF GENERAL CONDITIONS

**AIA DOCUMENT G707-1994 - CONSENT OF SURETY APPLICABLE TO THIS CONTRACT IS
ATTACHED FOLLOWING THIS PAGE.**

END OF SECTION



AIA[®] Document G707™ – 1994

Consent Of Surety to Final Payment

PROJECT: *(Name and address)*
Arkansas State Capitol Secured
Walkway
Little Rock, AR

TO OWNER: *(Name and address)*
Secretary of State
Arkansas State Capitol
500 Woodlane, Suite 12
Little Rock, AR 72201

ARCHITECT'S PROJECT NUMBER:

CONTRACT FOR: General Construction

CONTRACT DATED: September 05, 2023

OWNER:

ARCHITECT:

CONTRACTOR:

SURETY:

OTHER:

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the
(Insert name and address of Surety)

on bond of
(Insert name and address of Contractor)

Kinco Constructors, LLC
12600 Lawson Road
Little Rock, AR 72210

Arkansas License # 0090280415

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall
not relieve the Surety of any of its obligations to
(Insert name and address of Owner)

Secretary of State
Arkansas State Capitol
500 Woodlane, Suite 12
Little Rock, AR 72201

as set forth in said Surety's bond.

, SURETY,

, CONTRACTOR,

, OWNER,

IN WITNESS WHEREOF, the Surety has hereunto set its hand on this date:
(Insert in writing the month followed by the numeric date and year.)

(Surety)

(Signature of authorized representative)

(Printed name and title)

Attest:
(Seal):

**SECTION 00 6120
RELEASE OF LIENS**

FORM OF GENERAL CONDITIONS

**AIA DOCUMENT G706A-1994 - RELEASE OF LIENS APPLICABLE TO THIS CONTRACT IS
ATTACHED FOLLOWING THIS PAGE.**

END OF SECTION



AIA® Document G706®A – 1994

Contractor's Affidavit of Release of Liens

PROJECT: *(Name and address)*

Arkansas State Capitol Secured
Walkway
Little Rock, AR

ARCHITECT'S PROJECT NUMBER:

CONTRACT FOR: General
Construction

CONTRACT DATED: September 05,
2023

OWNER:

ARCHITECT:

CONTRACTOR:

SURETY:

OTHER:

TO OWNER: *(Name and address)*

Secretary of State
Arkansas State Capitol
500 Woodlane, Suite 12
Little Rock, AR 72201

STATE OF:
COUNTY OF:

The undersigned hereby certifies that to the best of the undersigned's knowledge, information and belief, except as listed below, the Releases or Waivers of Lien attached hereto include the Contractor, all Subcontractors, all suppliers of materials and equipment, and all performers of Work, labor or services who have or may have liens or encumbrances or the right to assert liens or encumbrances against any property of the Owner arising in any manner out of the performance of the Contract referenced above.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.

CONTRACTOR: *(Name and address)*

Kinco Constructors, LLC
12600 Lawson Road
Little Rock, AR 72210

Arkansas License # 0090280415

BY:

(Signature of authorized representative)

(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:

My Commission Expires:

**SECTION 00 6325
SUBSTITUTION REQUEST FORM**

V.20 SEND TO:

WER ARCHITECTS / PLANNERS ATTN: MASON ELLIS

901 W. 3RD STREET

LITTLE ROCK, AR 72201

PHONE: 501-374-5300 FAX: 501-374-5247

SECTION: _____ PARAGRAPH: _____ SPECIFIED ITEM: _____

PROPOSED SUBSTITUTE: _____

ATTACH, COMPLETE DESCRIPTION, DESIGNATION, CATALOG OR MODEL NUMBER, SPEC DATA SHEET, AND OTHER TECHNICAL DATA, INCLUDING LABORATORY TESTS IF APPLICABLE.

ANSWER THE FOLLOWING QUESTIONS:

WILL SUBSTITUTION AFFECT DIMENSIONS INDICATED ON DRAWINGS? IS THE SIZE DIFFERENT PHYSICAL SIZE? _____

WILL SUBSTITUTION AFFECT WIRING, PIPING, DUCTWORK, ETC. INDICATED ON DRAWINGS? THIS INCLUDES LOWER OR HIGHER ELECTRICAL LOAD AND/OR VOLTAGE; DIFFERENT BTU HEAT LOAD AND/OR OR VENTING; REQUIRED CLEARANCES, ETC.

WHAT AFFECT WILL SUBSTITUTION HAVE ON OTHER TRADES?

LIST ANY DIFFERENCES BETWEEN PROPOSED SUBSTITUTION AND SPECIFIED ITEM:

IF NECESSARY, WILL THE UNDERSIGNED PAY FOR ARCHITECTS/ENGINEER'S COSTS, REQUIRED TO REVISE WORKING DRAWINGS, THAT ARE CAUSED BY SUBSTITUTION?

MANUFACTURER'S WARRANTY OF PROPOSED ITEMS ARE SAME DIFFERENT

PROPOSED COST SAVINGS USING SUBSTITUTION PRODUCT: _____

REVIEW COMMENTS:

APPROVED

APPROVED AS NOTED (SEE ATTACHED EXPLANATION)

NOT APPROVED / REJECTED

REJECTED / RECEIVED TOO LATE / NOT REVIEWED

REMARKS: _____ REVIEWED BY: _____

SUBMITTED BY:

FIRM: _____

ADDRESS: _____

SIGNATURE: _____

DATE: _____

PHONE/EMAIL: _____

END OF SECTION

**SECTION 00 7200
GENERAL CONDITIONS**

V.20 FORM OF GENERAL CONDITIONS

**1.01 THE AIA A201-2007 GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION
APPLICABLE TO THIS CONTRACT IS ATTACHED FOLLOWING THIS PAGE.**

RELATED REQUIREMENTS

2.01 SECTION 00 7300 - SUPPLEMENTARY GENERAL CONDITIONS.

END OF SECTION



AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

Arkansas State Capitol Secured Walkway
Little Rock, AR

THE OWNER:

(Name, legal status and address)

Secretary of State
Arkansas State Capitol
500 Woodlane, Suite 12
Little Rock, AR 72201

THE ARCHITECT:

(Name, legal status and address)

Witsell Evans Rasco, P.A.
901 West Third St.
Little Rock, AR 72204

TABLE OF ARTICLES

- 1 **GENERAL PROVISIONS**
- 2 **OWNER**
- 3 **CONTRACTOR**
- 4 **ARCHITECT**
- 5 **SUBCONTRACTORS**
- 6 **CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**
- 7 **CHANGES IN THE WORK**
- 8 **TIME**
- 9 **PAYMENTS AND COMPLETION**
- 10 **PROTECTION OF PERSONS AND PROPERTY**
- 11 **INSURANCE AND BONDS**
- 12 **UNCOVERING AND CORRECTION OF WORK**
- 13 **MISCELLANEOUS PROVISIONS**

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

Init.

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User Notes:

(1735475529)

14 TERMINATION OR SUSPENSION OF THE CONTRACT

15 CLAIMS AND DISPUTES



Init.

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INDEX

(Topics and numbers in bold are Section headings.)

Acceptance of Nonconforming Work

9.6.6, 9.9.3, **12.3**

Acceptance of Work

9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, 12.3

Access to Work

3.16, 6.2.1, 12.1

Accident Prevention

10

Acts and Omissions

3.2, 3.3.2, 3.12.8, 3.18, 4.2.3, 8.3.1, 9.5.1, 10.2.5, 10.2.8, 13.3.2, 14.1, 15.1.2, 15.2

Addenda

1.1.1

Additional Costs, Claims for

3.7.4, 3.7.5, 10.3.2, 15.1.5

Additional Inspections and Testing

9.4.2, 9.8.3, 12.2.1, **13.4**

Additional Time, Claims for

3.2.4, 3.7.4, 3.7.5, 3.10.2, 8.3.2, **15.1.6**

Administration of the Contract

3.1.3, **4.2**, 9.4, 9.5

Advertisement or Invitation to Bid

1.1.1

Aesthetic Effect

4.2.13

Allowances

3.8

Applications for Payment

4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5.1, 9.5.4, 9.6.3, 9.7, 9.10

Approvals

2.1.1, 2.3.1, 2.5, 3.1.3, 3.10.2, 3.12.8, 3.12.9, 3.12.10.1, 4.2.7, 9.3.2, 13.4.1

Arbitration

8.3.1, 15.3.2, **15.4**

ARCHITECT

4

Architect, Definition of

4.1.1

Architect, Extent of Authority

2.5, 3.12.7, 4.1.2, 4.2, 5.2, 6.3, 7.1.2, 7.3.4, 7.4, 9.2, 9.3.1, 9.4, 9.5, 9.6.3, 9.8, 9.10.1, 9.10.3, 12.1, 12.2.1, 13.4.1, 13.4.2, 14.2.2, 14.2.4, 15.1.4, 15.2.1

Architect, Limitations of Authority and Responsibility

2.1.1, 3.12.4, 3.12.8, 3.12.10, 4.1.2, 4.2.1, 4.2.2, 4.2.3, 4.2.6, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 5.2.1, 7.4, 9.4.2, 9.5.4, 9.6.4, 15.1.4, 15.2

Architect's Additional Services and Expenses

2.5, 12.2.1, 13.4.2, 13.4.3, 14.2.4

Architect's Administration of the Contract

3.1.3, 3.7.4, 15.2, 9.4.1, 9.5

Architect's Approvals

2.5, 3.1.3, 3.5, 3.10.2, 4.2.7

Architect's Authority to Reject Work

3.5, 4.2.6, 12.1.2, 12.2.1

Architect's Copyright

1.1.7, 1.5

Architect's Decisions

3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.2.14, 6.3, 7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4.1, 9.5, 9.8.4, 9.9.1, 13.4.2, 15.2

Architect's Inspections

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 13.4

Architect's Instructions

3.2.4, 3.3.1, 4.2.6, 4.2.7, 13.4.2

Architect's Interpretations

4.2.11, 4.2.12

Architect's Project Representative

4.2.10

Architect's Relationship with Contractor

1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5, 3.7.4, 3.7.5, 3.9.2, 3.9.3, 3.10, 3.11, 3.12, 3.16, 3.18, 4.1.2, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 12, 13.3.2, 13.4, 15.2

Architect's Relationship with Subcontractors

1.1.2, 4.2.3, 4.2.4, 4.2.6, 9.6.3, 9.6.4, 11.3

Architect's Representations

9.4.2, 9.5.1, 9.10.1

Architect's Site Visits

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4

Asbestos

10.3.1

Attorneys' Fees

3.18.1, 9.6.8, 9.10.2, 10.3.3

Award of Separate Contracts

6.1.1, 6.1.2

Award of Subcontracts and Other Contracts for Portions of the Work

5.2

Basic Definitions

1.1

Bidding Requirements

1.1.1

Binding Dispute Resolution

8.3.1, 9.7, 11.5, 13.1, 15.1.2, 15.1.3, 15.2.1, 15.2.5, 15.2.6.1, 15.3.1, 15.3.2, 15.3.3, 15.4.1

Bonds, Lien

7.3.4.4, 9.6.8, 9.10.2, 9.10.3

Bonds, Performance, and Payment

7.3.4.4, 9.6.7, 9.10.3, **11.1.2**, 11.1.3, **11.5**

Building Information Models Use and Reliance

1.8

Building Permit

3.7.1

Capitalization

1.3

Certificate of Substantial Completion

9.8.3, 9.8.4, 9.8.5

Init.

/

Certificates for Payment

4.2.1, 4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 14.2.4, 15.1.4

Certificates of Inspection, Testing or Approval
13.4.4

Certificates of Insurance
9.10.2

Change Orders

1.1.1, 3.4.2, 3.7.4, 3.8.2.3, 3.11, 3.12.8, 4.2.8, 5.2.3, 7.1.2, 7.1.3, **7.2**, 7.3.2, 7.3.7, 7.3.9, 7.3.10, 8.3.1, 9.3.1.1, 9.10.3, 10.3.2, 11.2, 11.5, 12.1.2

Change Orders, Definition of

7.2.1

CHANGES IN THE WORK

2.2.2, 3.11, 4.2.8, **7**, 7.2.1, 7.3.1, 7.4, 8.3.1, 9.3.1.1, 11.5

Claims, Definition of

15.1.1

Claims, Notice of
1.6.2, 15.1.3

CLAIMS AND DISPUTES

3.2.4, 6.1.1, 6.3, 7.3.9, 9.3.3, 9.10.4, 10.3.3, **15**, 15.4
Claims and Timely Assertion of Claims
15.4.1

Claims for Additional Cost

3.2.4, 3.3.1, 3.7.4, 7.3.9, 9.5.2, 10.2.5, 10.3.2, **15.1.5**

Claims for Additional Time

3.2.4, 3.3.1, 3.7.4, 6.1.1, 8.3.2, 9.5.2, 10.3.2, **15.1.6**

Concealed or Unknown Conditions, Claims for

3.7.4

Claims for Damages
3.2.4, 3.18, 8.3.3, 9.5.1, 9.6.7, 10.2.5, 10.3.3, 11.3, 11.3.2, 14.2.4, 15.1.7

Claims Subject to Arbitration
15.4.1

Cleaning Up

3.15, 6.3

Commencement of the Work, Conditions Relating to
2.2.1, 3.2.2, 3.4.1, 3.7.1, 3.10.1, 3.12.6, 5.2.1, 5.2.3, 6.2.2, 8.1.2, 8.2.2, 8.3.1, 11.1, 11.2, **15.1.5**

Commencement of the Work, Definition of

8.1.2

Communications

3.9.1, **4.2.4**

Completion, Conditions Relating to
3.4.1, 3.11, 3.15, 4.2.2, 4.2.9, 8.2, 9.4.2, 9.8, 9.9.1, 9.10, 12.2, 14.1.2, 15.1.2

COMPLETION, PAYMENTS AND

9

Completion, Substantial
3.10.1, 4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3, 12.2, 15.1.2
Compliance with Laws
2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14.1.1, 14.2.1.3, 15.2.8, 15.4.2, 15.4.3

Concealed or Unknown Conditions

3.7.4, 4.2.8, 8.3.1, 10.3

Conditions of the Contract

1.1.1, 6.1.1, 6.1.4

Consent, Written

3.4.2, 3.14.2, 4.1.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3, 13.2, 15.4.4.2

Consolidation or Joinder

15.4.4

CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

1.1.4, **6**

Construction Change Directive, Definition of
7.3.1

Construction Change Directives

1.1.1, 3.4.2, 3.11, 3.12.8, 4.2.8, 7.1.1, 7.1.2, 7.1.3, **7.3**, 9.3.1.1

Construction Schedules, Contractor's

3.10, 3.11, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2

Contingent Assignment of Subcontracts

5.4, 14.2.2.2

Continuing Contract Performance

15.1.4

Contract, Definition of

1.1.2

CONTRACT, TERMINATION OR SUSPENSION OF THE

5.4.1.1, 5.4.2, 11.5, **14**

Contract Administration

3.1.3, 4, 9.4, 9.5

Contract Award and Execution, Conditions Relating to

3.7.1, 3.10, 5.2, 6.1

Contract Documents, Copies Furnished and Use of
1.5.2, 2.3.6, 5.3

Contract Documents, Definition of

1.1.1

Contract Sum

2.2.2, 2.2.4, 3.7.4, 3.7.5, 3.8, 3.10.2, 5.2.3, 7.3, 7.4, **9.1**, 9.2, 9.4.2, 9.5.1.4, 9.6.7, 9.7, 10.3.2, 11.5, 12.1.2, 12.3, 14.2.4, 14.3.2, 15.1.4.2, **15.1.5**, **15.2.5**

Contract Sum, Definition of

9.1

Contract Time

1.1.4, 2.2.1, 2.2.2, 3.7.4, 3.7.5, 3.10.2, 5.2.3, 6.1.5, 7.2.1.3, 7.3.1, 7.3.5, 7.3.6, 7, 7, 7.3.10, 7.4, 8.1.1, 8.2.1, 8.2.3, 8.3.1, 9.5.1, 9.7, 10.3.2, 12.1.1, 12.1.2, 14.3.2, 15.1.4.2, 15.1.6.1, 15.2.5

Contract Time, Definition of

8.1.1

CONTRACTOR

3

Contractor, Definition of

3.1, **6.1.2**

Contractor's Construction and Submittal Schedules

3.10, 3.12.1, 3.12.2, 4.2.3, 6.1.3, 15.1.6.2

Contractor's Employees
2.2.4, 3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2,
10.3, 11.3, 14.1, 14.2.1.1

Contractor's Liability Insurance

11.1

Contractor's Relationship with Separate Contractors
and Owner's Forces

3.12.5, 3.14.2, 4.2.4, 6, 11.3, 12.2.4

Contractor's Relationship with Subcontractors

1.2.2, 2.2.4, 3.3.2, 3.18.1, 3.18.2, 4.2.4, 5, 9.6.2, 9.6.7,
9.10.2, 11.2, 11.3, 11.4

Contractor's Relationship with the Architect

1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2,
3.5.1, 3.7.4, 3.10, 3.11, 3.12, 3.16, 3.18, 4.2, 5.2, 6.2.2,
7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3,
11.3, 12, 13.4, 15.1.3, 15.2.1

Contractor's Representations

3.2.1, 3.2.2, 3.5, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.8.2

Contractor's Responsibility for Those Performing the
Work

3.3.2, 3.18, 5.3, 6.1.3, 6.2, 9.5.1, 10.2.8

Contractor's Review of Contract Documents

3.2

Contractor's Right to Stop the Work

2.2.2, 9.7

Contractor's Right to Terminate the Contract

14.1

Contractor's Submittals

3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 9.2, 9.3, 9.8.2,
9.8.3, 9.9.1, 9.10.2, 9.10.3

Contractor's Superintendent

3.9, 10.2.6

Contractor's Supervision and Construction

Procedures

1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3,
7.3.4, 7.3.6, 8.2, 10, 12, 14, 15.1.4

Coordination and Correlation

1.2, 3.2.1, 3.3.1, 3.10, 3.12.6, 6.1.3, 6.2.1

Copies Furnished of Drawings and Specifications

1.5, 2.3.6, 3.11

Copyrights

1.5, **3.17**

Correction of Work

2.5, 3.7.3, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, **12.2**, 12.3,
15.1.3.1, 15.1.3.2, 15.2.1

Correlation and Intent of the Contract Documents

1.2

Cost, Definition of

7.3.4

Costs

2.5, 3.2.4, 3.7.3, 3.8.2, 3.15.2, 5.4.2, 6.1.1, 6.2.3,
7.3.3.3, 7.3.4, 7.3.8, 7.3.9, 9.10.2, 10.3.2, 10.3.6, 11.2,
12.1.2, 12.2.1, 12.2.4, 13.4, 14

Cutting and Patching

3.14, 6.2.5

Damage to Construction of Owner or Separate
Contractors

3.14.2, 6.2.4, 10.2.1.2, 10.2.5, 10.4, 12.2.4

Damage to the Work

3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.4, 12.2.4

Damages, Claims for

3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.3.2,
11.3, 14.2.4, 15.1.7

Damages for Delay

6.2.3, 8.3.3, 9.5.1.6, 9.7, 10.3.2, 14.3.2

Date of Commencement of the Work, Definition of

8.1.2

Date of Substantial Completion, Definition of

8.1.3

Day, Definition of

8.1.4

Decisions of the Architect

3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 6.3, 7.3.4,
7.3.9, 8.1.3, 8.3.1, 9.2, 9.4, 9.5.1, 9.8.4, 9.9.1, 13.4.2,
14.2.2, 14.2.4, 15.1, 15.2

Decisions to Withhold Certification

9.4.1, **9.5**, 9.7, 14.1.1.3

Defective or Nonconforming Work, Acceptance,
Rejection and Correction of

2.5, 3.5, 4.2.6, 6.2.3, 9.5.1, 9.5.3, 9.6.6, 9.8.2, 9.9.3,
9.10.4, 12.2.1

Definitions

1.1, 2.1.1, 3.1.1, 3.5, 3.12.1, 3.12.2, 3.12.3, 4.1.1, 5.1,
6.1.2, 7.2.1, 7.3.1, 8.1, 9.1, 9.8.1, 15.1.1

Delays and Extensions of Time

3.2, **3.7.4**, 5.2.3, 7.2.1, 7.3.1, **7.4**, **8.3**, 9.5.1, **9.7**,
10.3.2, **10.4**, 14.3.2, **15.1.6**, 15.2.5

Digital Data Use and Transmission

1.7

Disputes

6.3, 7.3.9, 15.1, 15.2

Documents and Samples at the Site

3.11

Drawings, Definition of

1.1.5

Drawings and Specifications, Use and Ownership of

3.11

Effective Date of Insurance

8.2.2

Emergencies

10.4, 14.1.1.2, **15.1.5**

Employees, Contractor's

3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2,
10.3.3, 11.3, 14.1, 14.2.1.1

Equipment, Labor, or Materials

1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,
4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3,
9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2

Execution and Progress of the Work

1.1.3, 1.2.1, 1.2.2, 2.3.4, 2.3.6, 3.1, 3.3.1, 3.4.1, 3.7.1,
3.10.1, 3.12, 3.14, 4.2, 6.2.2, 7.1.3, 7.3.6, 8.2, 9.5.1,
9.9.1, 10.2, 10.3, 12.1, 12.2, 14.2, 14.3.1, 15.1.4

Extensions of Time
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3, 7.4, 9.5.1, 9.7, 10.3.2,
10.4, 14.3, 15.1.6, **15.2.5**

Failure of Payment

9.5.1.3, **9.7**, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2

Faulty Work

(See Defective or Nonconforming Work)

Final Completion and Final Payment

4.2.1, 4.2.9, 9.8.2, **9.10**, 12.3, 14.2.4, 14.4.3

Financial Arrangements, Owner's

2.2.1, 13.2.2, 14.1.1.4

GENERAL PROVISIONS

1

Governing Law

13.1

Guarantees (See Warranty)

Hazardous Materials and Substances

10.2.4, **10.3**

Identification of Subcontractors and Suppliers

5.2.1

Indemnification

3.17, **3.18**, 9.6.8, 9.10.2, 10.3.3, 11.3

Information and Services Required of the Owner

2.1.2, **2.2**, 2.3, 3.2.2, 3.12.10.1, 6.1.3, 6.1.4, 6.2.5,
9.6.1, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2,
14.1.1.4, 14.1.4, 15.1.4

Initial Decision

15.2

Initial Decision Maker, Definition of

1.1.8

Initial Decision Maker, Decisions

14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5

Initial Decision Maker, Extent of Authority

14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5

Injury or Damage to Person or Property

10.2.8, 10.4

Inspections

3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,
9.9.2, 9.10.1, 12.2.1, 13.4

Instructions to Bidders

1.1.1

Instructions to the Contractor

3.2.4, 3.3.1, 3.8.1, 5.2.1, 7, 8.2.2, 12, 13.4.2

Instruments of Service, Definition of

1.1.7

Insurance

6.1.1, 7.3.4, 8.2.2, 9.3.2, 9.8.4, 9.9.1, 9.10.2, 10.2.5, **11**

Insurance, Notice of Cancellation or Expiration

11.1.4, 11.2.3

Insurance, Contractor's Liability

11.1

Insurance, Effective Date of
8.2.2, 14.4.2

Insurance, Owner's Liability

11.2

Insurance, Property

10.2.5, 11.2, 11.4, 11.5

Insurance, Stored Materials

9.3.2

INSURANCE AND BONDS

11

Insurance Companies, Consent to Partial Occupancy

9.9.1

Insured loss, Adjustment and Settlement of

11.5

Intent of the Contract Documents

1.2.1, 4.2.7, 4.2.12, 4.2.13

Interest

13.5

Interpretation

1.1.8, 1.2.3, **1.4**, 4.1.1, 5.1, 6.1.2, 15.1.1

Interpretations, Written

4.2.11, 4.2.12

Judgment on Final Award

15.4.2

Labor and Materials, Equipment

1.1.3, 1.1.6, **3.4**, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,
5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1,
10.2.4, 14.2.1.1, 14.2.1.2

Labor Disputes

8.3.1

Laws and Regulations

1.5, 2.3.2, 3.2.3, 3.2.4, 3.6, 3.7, 3.12.10, 3.13, 9.6.4,
9.9.1, 10.2.2, 13.1, 13.3.1, 13.4.2, 13.5, 14, 15.2.8,
15.4

Liens

2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8

Limitations, Statutes of

12.2.5, 15.1.2, 15.4.1.1

Limitations of Liability

3.2.2, 3.5, 3.12.10, 3.12.10.1, 3.17, 3.18.1, 4.2.6,
4.2.7, 6.2.2, 9.4.2, 9.6.4, 9.6.7, 9.6.8, 10.2.5, 10.3.3,
11.3, 12.2.5, 13.3.1

Limitations of Time

2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2.7,
5.2, 5.3, 5.4.1, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,
9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15,
15.1.2, 15.1.3, 15.1.5

Materials, Hazardous

10.2.4, **10.3**

Materials, Labor, Equipment and

1.1.3, 1.1.6, 3.4.1, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,
5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2,
10.2.1.2, 10.2.4, 14.2.1.1, 14.2.1.2

Means, Methods, Techniques, Sequences and Procedures of Construction

3.3.1, 3.12.10, 4.2.2, 4.2.7, 9.4.2

Mechanic's Lien

2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8

Mediation

8.3.1, 15.1.3.2, 15.2.1, 15.2.5, 15.2.6, **15.3**, 15.4.1,
15.4.1.1

Minor Changes in the Work

1.1.1, 3.4.2, 3.12.8, 4.2.8, 7.1, **7.4**

MISCELLANEOUS PROVISIONS

13

Modifications, Definition of

1.1.1

Modifications to the Contract

1.1.1, 1.1.2, 2.5, 3.11, 4.1.2, 4.2.1, 5.2.3, 7, 8.3.1, 9.7, 10.3.2

Mutual Responsibility

6.2

Nonconforming Work, Acceptance of

9.6.6, 9.9.3, **12.3**

Nonconforming Work, Rejection and Correction of
2.4, 2.5, 3.5, 4.2.6, 6.2.4, 9.5.1, 9.8.2, 9.9.3, 9.10.4, 12.2

Notice

1.6, 1.6.1, 1.6.2, 2.1.2, 2.2.2., 2.2.3, 2.2.4, 2.5, 3.2.4, 3.3.1, 3.7.4, 3.7.5, 3.9.2, 3.12.9, 3.12.10, 5.2.1, 7.4, 8.2.2, 9.6.8, 9.7, 9.10.1, 10.2.8, 10.3.2, 11.5, 12.2.2.1, 13.4.1, 13.4.2, 14.1, 14.2.2, 14.4.2, 15.1.3, 15.1.5, 15.1.6, 15.4.1

Notice of Cancellation or Expiration of Insurance

11.1.4, 11.2.3

Notice of Claims

1.6.2, 2.1.2, 3.7.4, 9.6.8, 10.2.8, **15.1.3**, 15.1.5, 15.1.6, 15.2.8, 15.3.2, 15.4.1

Notice of Testing and Inspections

13.4.1, 13.4.2

Observations, Contractor's

3.2, 3.7.4

Occupancy

2.3.1, 9.6.6, 9.8

Orders, Written

1.1.1, 2.4, 3.9.2, 7, 8.2.2, 11.5, 12.1, 12.2.2.1, 13.4.2, 14.3.1

OWNER

2

Owner, Definition of

2.1.1

Owner, Evidence of Financial Arrangements

2.2, 13.2.2, 14.1.1.4

Owner, Information and Services Required of the

2.1.2, **2.2**, 2.3, 3.2.2, 3.12.10, 6.1.3, 6.1.4, 6.2.5, 9.3.2, 9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2, 14.1.1.4, 14.1.4, 15.1.4

Owner's Authority

1.5, 2.1.1, 2.3.32.4, 2.5, 3.4.2, 3.8.1, 3.12.10, 3.14.2, 4.1.2, 4.2.4, 4.2.9, 5.2.1, 5.2.4, 5.4.1, 6.1, 6.3, 7.2.1, 7.3.1, 8.2.2, 8.3.1, 9.3.2, 9.5.1, 9.6.4, 9.9.1, 9.10.2, 10.3.2, 11.4, 11.5, 12.2.2, 12.3, 13.2.2, 14.3, 14.4, 15.2.7

Owner's Insurance

11.2

Owner's Relationship with Subcontractors

1.1.2, 5.2, 5.3, 5.4, 9.6.4, 9.10.2, 14.2.2

Owner's Right to Carry Out the Work

2.5, 14.2.2

Owner's Right to Clean Up

6.3

Owner's Right to Perform Construction and to Award Separate Contracts

6.1

Owner's Right to Stop the Work

2.4

Owner's Right to Suspend the Work

14.3

Owner's Right to Terminate the Contract

14.2, 14.4

Ownership and Use of Drawings, Specifications and Other Instruments of Service

1.1.1, 1.1.6, 1.1.7, **1.5**, 2.3.6, 3.2.2, 3.11, 3.17, 4.2.12, 5.3

Partial Occupancy or Use

9.6.6, **9.9**

Patching, Cutting and

3.14, 6.2.5

Patents

3.17

Payment, Applications for

4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5, 9.6.3, 9.7, 9.8.5, 9.10.1, 14.2.3, 14.2.4, 14.4.3

Payment, Certificates for

4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 14.2.4

Payment, Failure of

9.5.1.3, **9.7**, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2

Payment, Final

4.2.1, 4.2.9, **9.10**, 12.3, 14.2.4, 14.4.3

Payment Bond, Performance Bond and

7.3.4.4, 9.6.7, 9.10.3, **11.1.2**

Payments, Progress

9.3, **9.6**, 9.8.5, 9.10.3, 14.2.3, 15.1.4

PAYMENTS AND COMPLETION

9

Payments to Subcontractors

5.4.2, 9.5.1.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 14.2.1.2

PCB

10.3.1

Performance Bond and Payment Bond

7.3.4.4, 9.6.7, 9.10.3, **11.1.2**

Permits, Fees, Notices and Compliance with Laws

2.3.1, **3.7**, 3.13, 7.3.4.4, 10.2.2

PERSONS AND PROPERTY, PROTECTION OF

10

Polychlorinated Biphenyl

10.3.1

Product Data, Definition of

3.12.2

Product Data and Samples, Shop Drawings

3.11, **3.12**, 4.2.7

Progress and Completion

4.2.2, **8.2**, 9.8, 9.9.1, 14.1.4, 15.1.4

Progress Payments

9.3, **9.6**, 9.8.5, 9.10.3, 14.2.3, 15.1.4

Init.

/

Project, Definition of
1.1.4
Project Representatives
4.2.10
Property Insurance
10.2.5, **11.2**
Proposal Requirements
1.1.1
PROTECTION OF PERSONS AND PROPERTY
10
Regulations and Laws
1.5, 2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 9.9.1,
10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14, 15.2.8, 15.4
Rejection of Work
4.2.6, 12.2.1
Releases and Waivers of Liens
9.3.1, 9.10.2
Representations
3.2.1, 3.5, 3.12.6, 8.2.1, 9.3.3, 9.4.2, 9.5.1, 9.10.1
Representatives
2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.10, 13.2.1
Responsibility for Those Performing the Work
3.3.2, 3.18, 4.2.2, 4.2.3, 5.3, 6.1.3, 6.2, 6.3, 9.5.1, 10
Retainage
9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3
Review of Contract Documents and Field
Conditions by Contractor
3.2, 3.12.7, 6.1.3
Review of Contractor's Submittals by Owner and
Architect
3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 6.1.3, 9.2, 9.8.2
Review of Shop Drawings, Product Data and Samples
by Contractor
3.12
Rights and Remedies
1.1.2, 2.4, 2.5, 3.5, 3.7.4, 3.15.2, 4.2.6, 5.3, 5.4, 6.1,
6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.1, 12.2.2,
12.2.4, **13.3**, 14, 15.4
Royalties, Patents and Copyrights
3.17
Rules and Notices for Arbitration
15.4.1
Safety of Persons and Property
10.2, 10.4
Safety Precautions and Programs
3.3.1, 4.2.2, 4.2.7, 5.3, **10.1**, 10.2, 10.4
Samples, Definition of
3.12.3
Samples, Shop Drawings, Product Data and
3.11, **3.12**, 4.2.7
Samples at the Site, Documents and
3.11
Schedule of Values
9.2, 9.3.1
Schedules, Construction
3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2

Separate Contracts and Contractors
1.1.4, 3.12.5, 3.14.2, 4.2.4, 4.2.7, 6, 8.3.1, 12.1.2
Separate Contractors, Definition of
6.1.1
Shop Drawings, Definition of
3.12.1
Shop Drawings, Product Data and Samples
3.11, **3.12**, 4.2.7
Site, Use of
3.13, 6.1.1, 6.2.1
Site Inspections
3.2.2, 3.3.3, 3.7.1, 3.7.4, 4.2, 9.9.2, 9.4.2, 9.10.1, 13.4
Site Visits, Architect's
3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4
Special Inspections and Testing
4.2.6, 12.2.1, 13.4
Specifications, Definition of
1.1.6
Specifications
1.1.1, **1.1.6**, 1.2.2, 1.5, 3.12.10, 3.17, 4.2.14
Statute of Limitations
15.1.2, 15.4.1.1
Stopping the Work
2.2.2, 2.4, 9.7, 10.3, 14.1
Stored Materials
6.2.1, 9.3.2, 10.2.1.2, 10.2.4
Subcontractor, Definition of
5.1.1
SUBCONTRACTORS
5
Subcontractors, Work by
1.2.2, 3.3.2, 3.12.1, 3.18, 4.2.3, 5.2.3, 5.3, 5.4, 9.3.1.2,
9.6.7
Subcontractual Relations
5.3, 5.4, 9.3.1.2, 9.6, 9.10, 10.2.1, 14.1, 14.2.1
Submittals
3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.4, 9.2, 9.3, 9.8,
9.9.1, 9.10.2, 9.10.3
Submittal Schedule
3.10.2, 3.12.5, 4.2.7
Subrogation, Waivers of
6.1.1, **11.3**
Substances, Hazardous
10.3
Substantial Completion
4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, **9.8**, 9.9.1, 9.10.3, 12.2,
15.1.2
Substantial Completion, Definition of
9.8.1
Substitution of Subcontractors
5.2.3, 5.2.4
Substitution of Architect
2.3.3
Substitutions of Materials
3.4.2, 3.5, 7.3.8
Sub-subcontractor, Definition of
5.1.2

Subsurface Conditions
3.7.4

Successors and Assigns
13.2

Superintendent
3.9, 10.2.6

Supervision and Construction Procedures
1.2.2, **3.3**, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3,
7.3.4, 8.2, 8.3.1, 9.4.2, 10, 12, 14, 15.1.4

Suppliers
1.5, 3.12.1, 4.2.4, 4.2.6, 5.2.1, 9.3, 9.4.2, 9.5.4, 9.6,
9.10.5, 14.2.1

Surety
5.4.1.2, 9.6.8, 9.8.5, 9.10.2, 9.10.3, 11.1.2, 14.2.2,
15.2.7

Surety, Consent of
9.8.5, 9.10.2, 9.10.3

Surveys
1.1.7, 2.3.4

Suspension by the Owner for Convenience
14.3

Suspension of the Work
3.7.5, 5.4.2, 14.3
Suspension or Termination of the Contract
5.4.1.1, 14

Taxes
3.6, 3.8.2.1, 7.3.4.4

Termination by the Contractor
14.1, 15.1.7

Termination by the Owner for Cause
5.4.1.1, **14.2**, 15.1.7

Termination by the Owner for Convenience
14.4

Termination of the Architect
2.3.3
Termination of the Contractor Employment
14.2.2

**TERMINATION OR SUSPENSION OF THE
CONTRACT**

14

Tests and Inspections
3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,
9.9.2, 9.10.1, 10.3.2, 12.2.1, **13.4**

TIME
8

Time, Delays and Extensions of
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, **8.3**, 9.5.1, 9.7,
10.3.2, 10.4, 14.3.2, 15.1.6, 15.2.5

Time Limits
2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2,
5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3, 9.4.1,
9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15.1.2,
15.1.3, 15.4

Time Limits on Claims
3.7.4, 10.2.8, 15.1.2, 15.1.3

Title to Work
9.3.2, 9.3.3

UNCOVERING AND CORRECTION OF WORK
12

Uncovering of Work
12.1

Unforeseen Conditions, Concealed or Unknown
3.7.4, 8.3.1, 10.3

Unit Prices
7.3.3.2, 9.1.2

Use of Documents
1.1.1, 1.5, 2.3.6, 3.12.6, 5.3

Use of Site
3.13, 6.1.1, 6.2.1

Values, Schedule of
9.2, 9.3.1

Waiver of Claims by the Architect
13.3.2

Waiver of Claims by the Contractor
9.10.5, 13.3.2, **15.1.7**

Waiver of Claims by the Owner
9.9.3, 9.10.3, 9.10.4, 12.2.2.1, 13.3.2, 14.2.4, **15.1.7**

Waiver of Consequential Damages
14.2.4, 15.1.7

Waiver of Liens
9.3, 9.10.2, 9.10.4

Waivers of Subrogation
6.1.1, **11.3**

Warranty
3.5, 4.2.9, 9.3.3, 9.8.4, 9.9.1, 9.10.2, 9.10.4, 12.2.2,
15.1.2

Weather Delays
8.3, 15.1.6.2

Work, Definition of
1.1.3

Written Consent
1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.10.3,
13.2, 13.3.2, 15.4.4.2

Written Interpretations
4.2.11, 4.2.12

Written Orders
1.1.1, 2.4, 3.9, 7, 8.2.2, 12.1, 12.2, 13.4.2, 14.3.1

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

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

§ 1.1.2 The Contract

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

§ 1.1.3 The Work

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

§ 1.1.4 The Project

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

§ 1.1.5 The Drawings

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

§ 1.1.6 The Specifications

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

§ 1.1.7 Instruments of Service

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

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

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

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

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

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

§ 1.3 Capitalization

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

§ 1.4 Interpretation

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

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

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

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document

G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

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

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

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

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

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

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

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

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

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

§ 2.4 Owner's Right to Stop the Work

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

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

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

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

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

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

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

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

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

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

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

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

§ 3.4 Labor and Materials

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

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

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

§ 3.5 Warranty

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

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

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

§ 3.7 Permits, Fees, Notices and Compliance with Laws

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

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

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

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

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

§ 3.8 Allowances

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

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

§ 3.9 Superintendent

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

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

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

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

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

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

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and

delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

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

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

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

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

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

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

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

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

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

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will

specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

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

§ 3.14 Cutting and Patching

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

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

§ 3.15 Cleaning Up

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

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

§ 3.16 Access to Work

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

§ 3.17 Royalties, Patents and Copyrights

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

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

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

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

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

§ 4.2 Administration of the Contract

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

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

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

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

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

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

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

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

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

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

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

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

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

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

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

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

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

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

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

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

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

§ 5.3 Subcontractual Relations

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

§ 5.4 Contingent Assignment of Subcontracts

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

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

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

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

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

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

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

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

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

§ 6.2 Mutual Responsibility

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

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

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

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

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

§ 6.3 Owner's Right to Clean Up

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

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

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

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

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

§ 7.2 Change Orders

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

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

§ 7.3 Construction Change Directives

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

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

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

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

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

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

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

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

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

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

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

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

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

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

§ 8.2 Progress and Completion

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

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

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

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

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

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

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

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

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

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

§ 9.3 Applications for Payment

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

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

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

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

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

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

§ 9.5 Decisions to Withhold Certification

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

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;

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- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

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

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

§ 9.6 Progress Payments

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

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

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

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

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

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

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

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

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

§ 9.8 Substantial Completion

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

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

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

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

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

§ 9.9 Partial Occupancy or Use

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

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

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

§ 9.10 Final Completion and Final Payment

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

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

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

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

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

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

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

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

§ 10.2 Safety of Persons and Property

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

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

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

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

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

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

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

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

§ 10.2.8 Injury or Damage to Person or Property

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

§ 10.3 Hazardous Materials and Substances

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

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will

promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

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

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

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

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

§ 10.4 Emergencies

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

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

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

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act

or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 **Failure to Purchase Required Property Insurance.** If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 **Notice of Cancellation or Expiration of Owner's Required Property Insurance.** Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

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

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

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

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

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

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

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

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

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

§ 12.3 Acceptance of Nonconforming Work

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

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

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

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

§ 13.3 Rights and Remedies

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

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

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and

approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

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

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

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

§ 13.5 Interest

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

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

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

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

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

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

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

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

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

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

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

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

§ 14.3 Suspension by the Owner for Convenience

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

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

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

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

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

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

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

§ 15.1.7 Waiver of Claims for Consequential Damages

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

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

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

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

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

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

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

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

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

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

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

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

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

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

§ 15.4 Arbitration

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

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

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

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

§ 15.4.4 Consolidation or Joinder

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

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

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



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Little Rock, AR 72204

Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, John Greer Jr., AIA, hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 10:04:47 CT on 10/12/2023 under Order No. 3104239285 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A201™ – 2017, General Conditions of the Contract for Construction, other than those additions and deletions shown in the associated Additions and Deletions Report.

(Signed)

(Title)

(Dated)

**SECTION 00 7300
SUPPLEMENTARY GENERAL CONDITIONS**

PART 1 GENERAL V.20

1.01 SUMMARY

- A. The terms used in these Supplementary Conditions that are defined in the General Conditions have the meanings assigned to them in the General Conditions.

1.02 MODIFICATIONS TO GENERAL CONDITIONS

SUPPLEMENTARY GENERAL CONDITIONS: THE FOLLOWING SUPPLEMENTS MODIFY THE "GENERAL CONDITION OF THE CONTRACT FOR CONSTRUCTION", AIA DOCUMENT A201. WHERE A PORTION OF THE GENERAL CONDITIONS IS MODIFIED OR DELETED BY THESE SUPPLEMENTARY CONDITIONS, THE UNALTERED PORTIONS OF THE GENERAL CONDITIONS SHALL REMAIN IN EFFECT.

3.8.1 In line 1 after "Documents." add "Refer to Section 01 2100."

3.8.2.2 Add the following to end of clause, "except when installation is specified as part of the allowance. "Refer to Section 01 2100."

3.9.3 Add the following sentence at the end of the paragraph, "In event the approved superintendent must be changed for circumstances beyond the G.C.'s control, or at the direction of the Owner, the replacement superintendent must meet with the Owner's approval.

3.10 Add the following new subparagraph:

"3.10.4 Submit construction schedules in accordance with Section 01 3216."

3.11 At end of paragraph, add "Submit in accordance with Section 01 7000."

3.12.5 At end of subparagraph, add "Submit in accordance with Section 01 3000."

7.3.7 Lines 4 through 5, delete "reasonable...profit." and insert "an allowance for overhead and profit in accordance with the schedule set forth in subparagraph 7.3.11.

7.3 Add new subparagraph as follows:

"7.3.11 In subparagraph 7.3.7, the allowance for overhead and profit included in the total cost to the Owner shall be based on the following schedule:

1. For the contractor, for work performed by the Contractor's own forces, 12 percent of the cost.
2. For the contractor, for work performed by his subcontractor, 5 percent of the amount due the subcontractor.
3. For each subcontractor or sub-subcontractor involved, for work performed by that subcontractor's or sub-subcontractor's own forces, 12 percent of the cost.
4. For each subcontractor, for work performed by the subcontractor's sub-subcontractors, 5% of the amount due the sub-subcontractor.
5. Cost to which overhead and profit is to be applied shall be determined in accordance with Subparagraph 7.3.7.
6. In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major costs items are subcontracts, they shall be itemized also."

8.3 Add the following subparagraphs:

"8.3.4 The construction completion dates agreed on include an allowance for calendar days per month which may not be available for construction out-of-doors (normal inclement weather).

8.3.4.1 Contract time will not be extended due to normal inclement weather unless the Contractor can substantiate, to satisfaction of Architect, that greater-than-normal inclement weather occurred, considering the full term of contract time, using averaged accumulated record

mean values from climatological data compiled by National Weather Service for the project locale, and that alleged greater-than-normal inclement weather actually delayed Work or portions of Work.

8.3.4.1.1 The measure of extreme weather shall be the number of days in excess of those stated for each month, in which precipitation exceeded 0.10 inch, from area weather station for same period of time, which is same source of data used to determine normal weather losses.

8.3.4.1.2 If total accumulated number of calendar days lost to weather exceeds total accumulated number expected for same period from inclement weather table, time for completion will be extended by number of calendar days needed to include excess number of calendar days lost.

8.3.4.2 Contract time will not be extended due to weather occurring after building is enclosed. "Enclosed" is defined to mean when building is sufficiently sealed, either temporarily or permanently, to permit structure to be heated and roof completed in order to permit drywall trades to work. The Architect shall determine when structure is "enclosed", and shall issue a letter to Owner, with a copy to Contractor, stating date building became "enclosed".

8.3.4.3 No change in contract sum will be authorized because of contract time due to weather."

9.2 At end of paragraph, add "Submit in accordance with Section 01 3000."

9.3.1:

7. At end of subparagraph, add "Submit in accordance with Section 01 3000."

8. Add new clause as follows:

"9.3.1.3 Until Substantial Completion of the Work, 5% of each progress payment will be retained. Refer to Article 9.8.3 for adjustment in retainage upon Substantial Completion of Work.

9.10.2 At end of subparagraph, add "Submit affidavit of payment of debts and claims and affidavit of release of liens on AIA Forms G706 and G706A, respectively."

11.1.1 Add the following new clauses:

"11.1.1.9 Liability Insurance shall include all major divisions of coverage and be on a comprehensive basis including:

9. Premises Operations (including X, C and U coverages as applicable).
10. Independent Contractor's Protective.
11. Products and Completed Operations.
12. Personal Injury Liability with Employment Exclusion deleted.
13. Contractual, including specified provision for Contractor's obligation under Paragraph 3.18.
14. Owner, non-owned and hired motor vehicles.
15. Broad Form Property Damage including Completed Operations."

11.1.2 Add new clause as follows:

"11.1.2.1 The insurance required by Subparagraph 11.1.1 shall be written for not less than the following limits, or greater if required by law:

16. Worker's Compensation Statutory
 - Employer's Liability \$100,000 per accident,
 - \$500,000 Disease Policy Limit
 - \$100,000 Disease, Each Employee
17. Commercial General Liability (including Premises-Operations, Independent Contractors' Protective, Products and Completed Operations, Broad Form Property Damage)
 - a. Bodily Injury & Property Damage Combined \$1,000,000 each occurrence
\$2,000,000 aggregate

- b. Products and Completed Operations to be maintained for 2 year after final Payment. \$2,000,000 aggregate
- c. Property Damage Liability Insurance will provide X, C, or U Coverage.
- d. Broad Form Property Damage Coverage shall include Completed Operations.
- 18. Contractual Liability
 - a. Bodily Injury & Property Damage Combined \$1,000,000 each occurrence \$2,000,000 aggregate
- 19. Personal Injury, with Employment Exclusion deleted \$2,000,000 aggregate
- 20. Business Auto Liability (including owned, non-owned and hired vehicles)
 - a. Bodily Injury & Property Damage Combined \$1,000,000 each occurrence \$2,000,000 aggregate
- 21. If the General Liability coverages are provided by a Commercial Liability policy, the:
 - a. General Aggregate shall be not less than \$2,000,000 and it shall apply, in total, to this Project only.
 - b. Fire Damage Limit shall be not less than \$50,000 on any one Fire.
 - c. Medical Expense Limit shall be not less than \$2,500 on any one person.
- 22. Umbrella Excess Liability \$1,000,000 over primary insurance
 -
 - \$10,000 retention for self-insured hazards, each occurrence -

11.1.3 Add the following new clause as follows:

"11.1.3.1 The Contractor shall furnish 3 copies of each Certificate of Insurance herein required which shall specifically set forth evidence of all coverage required. Use ACORD certificate, 25-S, completed and supplemented in accordance with AIA Document A715."

11.2.1 In line 1 change "Owner" to "Contractor" and insert the following:

"The Contractor shall purchase and maintain insurance, in same amounts as specified in 11.1.2.1 above, covering the Owner's contingent liability for claims which may arise from operations under the Contract. The term "Owner", shall be deemed to include the Owner's employees, the Architect, and the Architect's employees and consultants."

11.3.1 ADD the following sentences:

"The form of policy for this coverage shall be Completed Value. If the Owner is damaged by the failure of the Contractor to maintain such insurance, then the Contractor shall bear all reasonable costs properly attributable thereto."

11.3.1.3 Delete in its entirety.

11.3.4 Delete in its entirety.

11.4.1 Delete in its entirety and substitute the following:

"11.4.1 Contractor shall bond covering faithful performance of the Contract and payment of obligations arising thereunder. Bonds must be issued by a Surety licensed to do work in Arkansas. Cost shall be included in the Contract Sum. The amount of bond shall be equal to 100 percent of the Contract Sum.

11.4.1.1 The Contractor shall deliver the required bonds to the Owner not less than three days following the date the Agreement is entered into, or if the work is to be commenced prior thereto in response to a letter of intent, the Contractor shall, prior to the commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished."

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

11.4.1.3 File a copy of the bond with Circuit Clerk in the county in which project is located.

12.2.2 Add the following to the subparagraph:

"12.2.2.1 Provide for and arrange a one year inspection of facilities before warranties expire, by Contractor, Architect/Engineer, and Owner. Inspection to occur before the end of the eleventh month from the date of substantial completion"

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 1000
SUMMARY**

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. This Section includes the following:
 - 1. Work covered by the Contract Documents.
 - 2. Type of Contract.
 - 3. Work phases.
 - 4. Work under other contracts.
 - 5. Products ordered in advance.
 - 6. Owner-furnished products.
 - 7. Use of premises.
 - 8. Owner's occupancy requirements.
 - 9. Work restrictions.
 - 10. Specification formats and conventions.
- B. Related Sections include the following:
 - 1. Division 1 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.03 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: Arkansas State Capitol - Secured Walkway.
 - 1. Project Location: 500 Woodlane St, Little Rock, AR 72201
- B. Owner: Secretary of State & Bureau of Legislative Affairs.
- C. Architect: WER, 901 W. Third, Little Rock, AR 72201
- D. The Work consists of the following:
 - 1. The Work includes installation of a secured walkway

1.04 TYPE OF CONTRACT

- A. Project will be constructed under a single prime contract.

1.05 WORK SEQUENCE

- A. The work shall be executed as required to cause the least amount of disruption to daily operations.
- B. The work shall be substantially complete on or before January 6th 2025.

1.06 USE OF PREMISES

- A. General: Contractor shall have limited use of premises for construction operations as indicated on Drawings by the Contract limits.
- B. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Owner Occupancy: Allow for Owner occupancy of Project site.
 - 2. Driveways and Entrances: Keep driveways, parking, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

- C. Use of Existing Building: Maintain existing building in a weathertight condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.

1.07 OWNER'S OCCUPANCY REQUIREMENTS

- A. Full Owner Occupancy: Owner will occupy site and building during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits, unless otherwise indicated.
 - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
 - 2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

1.08 WORK RESTRICTIONS

- A. On-Site Work Hours: Any work performed inside the existing building will be during normal business working hours of 7:00 a.m. to 5:00 p.m., Monday through Friday, except otherwise indicated.
 - 1. Contractor shall submit schedule and gain the Architect's written approval at least 72 hours before proceeding with any work during Government Unoccupied Hours.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than three days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Owner's written permission.

1.09 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 42-division format and CSI/CSC's "MasterFormat" numbering system.
 - 1. Section Identification: The Specifications use Section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.
 - 2. Division 1: Sections in Division 1 govern the execution of the Work of all Sections in the Specifications.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
 - 2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
 - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**SECTION 01 1400
WORK RESTRICTIONS**

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 CONTRACTOR USE OF PREMISES

- A. The Architect's Representative will conduct a pre-construction survey with the Contractor to review and document the existing conditions surrounding the project premises prior to the beginning of any construction activity.
- B. During the construction period, the Contractor shall have limited use of the premises for construction operations, including limited use of the site, limited by the Government's right to perform daily operations in the building and on the grounds.
- C. The Contractor shall limit use of the premises to the work in areas indicated, to allow for Government occupancy and public use.
 - 1. Confine operations at the site to areas indicated. Do not disturb portions of the site beyond the areas in which Work is indicated.
 - 2. Keep driveways and entrances serving the premises clear and available at all times to the Government, Government employees and visitors. Do not use these areas for parking or storage of materials.
 - 3. Schedule deliveries to minimize space and time requirements for storage of material and equipment on site.
 - 4. Maintain existing building in a safe and weather-tight condition throughout the construction period. Repair damage caused by construction operations. Take precautions to protect the building, its occupants and the public during the construction period.
 - 5. Keep public areas free from accumulation of waste material, rubbish, construction debris and construction materials.
 - 6. Space on the premises will be made available for the Contractor's storage and related activities, provided that its use will not interfere with operations of the Government. Arrange and gain approval for use of this space through the Architect.
 - 7. Use of the existing loading dock facilities will be shared with Government activities on a first-come-first-served, wait-your-turn basis.
 - 8. Existing materials and equipment that are removed as part of the construction operations, and that are not reused or are not designated to be salvaged as Government or other's property, shall become the property of the Contractor and shall be removed from the site. Storage or sale of excess salvageable materials and equipment is not permitted on site.
 - 9. Pollution producing equipment shall not be located near air intakes where airborne smoke or fumes could be drawn into the building.
 - 10. The Contractor and Contractor's employees shall make their own arrangements for vehicle parking off site, unless otherwise directed by the Architect's Representative.

1.03 GOVERNMENT OCCUPANCY

- A. The Government will occupy the existing building during the entire period of construction. Cooperate with the Government's representatives during construction operations to minimize conflicts and facilitate Government usage. Perform the Work in a manner that does not interfere with the Government's operations.

1.04 WORKING HOURS

- A. Government Occupied Hours: Government personnel are scheduled to occupy the building during the following hours on weekdays, Monday through Friday, except for established Government Holidays: 7:00 AM to 5:00 PM.

- B. Contractor's General Working Hours: The Contractor working hours shall be generally established to occur during Government Occupied Hours.
- C. Work accomplished during Government Unoccupied Hours shall be performed at no additional cost to the Government. Contractor shall submit a proposed schedule and gain the Architect's written approval at least 72 hours before proceeding with any work during Government Unoccupied Hours.

1.05 PART 2 PRODUCTS (NOT APPLICABLE)

1.06 PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

**SECTION 01 2000
PRICE AND PAYMENT PROCEDURES**

PART 1 GENERAL V.22

1.01 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Change procedures.
- D. Correlation of Contractor submittals based on changes.
- E. Procedures for preparation and submittal of application for final payment.

1.02 SCHEDULE OF VALUES

- A. Use Schedule of Values Form: AIA G-702 Application and Certificate for Payment.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.
- C. Forms filled out by hand will not be accepted.
- D. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.
- E. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification section. Identify site mobilization.
- F. Include in each line item, the amount of Allowances specified in this section. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.
- G. Revise schedule to list approved Change Orders, with each Application For Payment.

1.03 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Use Form AIA G702 and Form AIA G703, edition stipulated in the Agreement.
- C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- D. Forms filled out by hand will not be accepted.
- E. For each item, provide a column for listing each of the following:
 - 1. Item Number.
 - 2. Description of work.
 - 3. Scheduled Values.
 - 4. Previous Applications.
 - 5. Work in Place and Stored Materials under this Application.
 - 6. Authorized Change Orders.
 - 7. Total Completed and Stored to Date of Application.
 - 8. Percentage of Completion.
 - 9. Balance to Finish.
 - 10. Retainage.
- F. Execute certification by signature of authorized officer.
- G. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- H. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.
- I. Submit one electronic and three hard-copies of each Application for Payment.

1.04 MODIFICATION PROCEDURES

- A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.
- B. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
 - 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
 - 2. Promptly execute the change.
- C. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 15 days.
- D. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
 - 1. For change requested by Architect for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
- E. Substantiation of Costs: Provide full information required for evaluation.
 - 1. Provide the following data:
 - a. Quantities of products, labor, and equipment.
 - b. Taxes, insurance, and bonds.
 - c. Overhead and profit.
 - d. Justification for any change in Contract Time.
 - e. Credit for deletions from Contract, similarly documented.
- F. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- G. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Price.
- H. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- I. Promptly enter changes in Project Record Documents.

1.05 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
 - 1. All closeout procedures specified in Section 01 7000.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 2500
SUBSTITUTION PROCEDURES**

PART 1 GENERAL V.22

1.01 SECTION INCLUDES

- A. Procedural requirements for proposed substitutions.

1.02 RELATED REQUIREMENTS

- A. Section 00 6325 - Substitution Request Form: Required form for substitution requests made after award of contract (During construction).
- B. Section 01 6000 - Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling.

1.03 DEFINITIONS

- A. General Clarification: Where a definite material is specified it is not the intent to discriminate against any equal product from another manufacturer. It is the intent to set a definite standard. Open competition is expected, but in all cases, complete data must be submitted for comparison and test when requested by Architect. No substitution shall be made unless authorized in writing by the Architect. If the Contractor proposes to substitute an equal product, he shall make this fact known, in writing, to the Architect as soon as possible after the award of the contract.
- B. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
 - 1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
 - a. Unavailability.
 - b. Regulatory changes.
 - 2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
 - a. Substitution requests offering advantages solely to the Contractor will not be considered.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

- A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system including aesthetics of physical properties such as available colors, patterns and textures.
 - 2. Agrees to provide the same warranty for the substitution as for the specified product.
 - 3. Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
 - 4. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
 - 5. Waives claims for additional costs or time extension that may subsequently become apparent.
 - 6. Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.
- B. A Substitution Request for specified installer constitutes a representation that the submitter:
 - 1. Has acted in good faith to obtain services of specified installer, but was unable to come to commercial, or other terms.

- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
 - 1. Note explicitly any non-compliant characteristics.
- D. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
 - 1. Forms included in the Project Manual are adequate for this purpose, and must be used.
- E. Limit each request to a single proposed substitution item.
 - 1. Submit an electronic document, combining the request form with supporting data into single document.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

- A. Instructions to Bidders specifies time restrictions for submitting requests for substitutions during the bidding period, and the documents required.
 - 1. Submit substitution requests by completing the form in Section 006325; see this section for additional information and instructions. Use only this form; other forms of submission are unacceptable.
 - 2. Lighting Fixture Substitution- Lighting Fixtures not specifically listed in the Lighting Fixture Schedule by manufacturer indicated as approved to bid must be submitted 7 days prior to bid. Provide cut sheets labeled with the mark shown in the Lighting Fixture Schedule on E0.02. Provide lighting level calculations for review. Typical lighting levels for classrooms are acceptable. Architect will review for conformance with the Design Intent. Engineer will review for conformance with technical requirements.
 - 3. Plumbing Fixture Substitution- Plumbing Fixtures not specifically listed in the Plumbing Fixture Schedule by manufacturers indicated as approved to bid must be submitted 7 days prior to bid. Provide cut sheets labeled with the mark shown in the Plumbing Fixture Schedule.
 - 4. Mechanical Equipment Substitution- Mechanical Equipment not specifically listed in the Mechanical Equipment Schedules and specifically noted in the drawings by manufacturers indicated as approved to bid must be submitted 7 days prior to bid. Provide cut sheets labeled with the mark shown in the Mechanical Equipment Schedules. Architect will review for conformance with the Design Intent. Engineer will review for conformance with technical requirements.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

- A. Submittal Form (after award of contract):
 - 1. Submit substitution requests by completing the form in Section 00 6325; see this section for additional information and instructions. Use only this form; other forms of submission are unacceptable.
- B. Architect will consider requests for substitutions only within 30 days after date of Agreement.
- C. Substitutions will not be considered under one or more of the following circumstances:
 - 1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
 - 2. Without a separate written request.
 - 3. When acceptance will require revisions to Contract Documents.

3.04 RESOLUTION

- A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.
- B. Architect will notify Contractor in writing of decision to accept or reject request.
 - 1. Architect's decision following review of proposed substitution will be noted on the submitted form.

3.05 ACCEPTANCE

- A. Accepted substitutions change the work of the Project. They will be recorded into submittal and any required changes to the Construction Documents will be incorporated into the work by issuance of Change Order, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

3.06 CLOSEOUT ACTIVITIES

- A. See Section 01 7800 - Closeout Submittals, for closeout submittals.
- B. Include completed Substitution Request Forms as part of the Project record. Include both approved and rejected Requests.

END OF SECTION

**SECTION 01 3000
ADMINISTRATIVE REQUIREMENTS**

PART 1 GENERAL V.22

1.01 SECTION INCLUDES

- A. Electronic document submittals.
- B. Preconstruction meeting.
- C. Site mobilization meeting.
- D. Progress meetings.
- E. Construction progress schedule.
- F. Change Order requirements.
- G. Contractor Liability requirements.
- H. Coordination drawings.
- I. Submittals for review, information, and project closeout.
- J. Number of copies of submittals.
- K. Submittal procedures.

1.02 RELATED REQUIREMENTS

- A. Section 01 3216 - Construction Progress Schedule: Form, content, and administration of schedules.

1.03 PROJECT COORDINATION

- A. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for construction & delivery access, traffic, and parking facilities.
- B. During construction, coordinate use of site and facilities through the Project Coordinator.
- C. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- D. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities.
- E. Coordinate field engineering and layout work under instructions of the Project Coordinator.
- F. Make the following types of submittals to Architect:
 - 1. Requests for interpretation.
 - 2. Requests for substitution.
 - 3. Shop drawings, product data, and samples.
 - 4. Test and inspection reports.
 - 5. Manufacturer's instructions and field reports.
 - 6. Applications for payment and change order requests.
 - 7. Progress schedules.
 - 8. Coordination drawings.
 - 9. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 ELECTRONIC DOCUMENT SUBMITTALS

- A. Any documents transmitted for purposes of administration of the contract will be in electronic (PDF) format and transmitted via an Internet-based e-mail service.
 - 1. In addition to submittals for review, information, and closeout, this procedure will apply to requests for information (RFIs), progress documentation, contract modification documents

(e.g. supplementary instructions, proposal requests, change orders), applications for payment, field reports and meeting minutes, and any other document the Contractor or Architect wish to make part of the project electronic record.

2. Contractor and Architect will use conventional e-mail for this service, subject to the limitations of the service provider (file size).
 3. It is the Contractor's responsibility to submit documents in PDF format via file attachment to e-mail directed to WER Architect. Addressee will be determined at the pre-construction conference. Documents shall be reviewed and stamped by the contractor prior to submission. PDF documents without contractors stamp, signature and/or initials, & date will not be reviewed. Each scan or PDF copy, especially large format documents or drawings, shall be individually stamped, if transmitted as individual files. Assembled documents in a single file need only be stamped once.
 4. Subcontractors, suppliers, and Architect's consultants are required to use the e-mail transmission of review documents, and provide copies directed to the Architect and Contractor.
 5. Users of the electronic document submission process shall provide an email address and Internet access. PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, www.adobe.com, or Bluebeam PDF Revu, www.bluebeam.com), is encouraged, unless scan to PDF file capability is provided by the document generator / provider.
 6. Paper documents & transmittals of electronic submissions will not be reviewed; emailed PDF documents without transmittal letters / forms from the contractor will not be reviewed.
 7. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to physical samples or color selection charts.
- B. Cost: The cost of the electronic document submittal(s) is to be paid by Contractor; include the cost of the submittals in the contract sum.
- C. Project Closeout: Architect will determine which project electronic document files shall be archived for the Owner. The contractor shall provide these documents electronically and physical components as part of the close out document submission.

3.02 PRECONSTRUCTION MEETING

- A. Architect will schedule a meeting after Notice of Award.
- B. Attendance Required:
 1. Owner.
 2. Architect.
 3. Contractor.
- C. Agenda:
 1. Distribution of Contract Documents.
 2. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
 3. Designation of personnel representing the parties to Contract, the Owner and Architect.
 4. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 5. Scheduling.
- D. Record minutes and distribute copies within two days after meeting to participants, with electronic copies to Architect, Owner, participants, and those affected by decisions made.

3.03 SITE MOBILIZATION MEETING

- A. Architect will schedule a meeting at the Project site prior to Contractor occupancy.
- B. Attendance Required:
 1. Contractor.
 2. Owner.

3. Architect.
 4. Contractor's Superintendent.
 5. Major Subcontractors.
- C. Agenda:
1. Use of premises by Owner and Contractor.
 2. Owner's requirements .
 3. Construction facilities and controls provided by Owner.
 4. Temporary utilities provided by Owner.
 5. Security and housekeeping procedures.
 6. Schedules.
 7. Application for payment procedures.
 8. Procedures for testing.
 9. Procedures for maintaining record documents.
 10. Requirements for start-up of equipment.
 11. Inspection and acceptance of equipment put into service during construction period.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at maximum monthly intervals.
- B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, Architect, as appropriate to agenda topics for each meeting.
- D. Agenda:
1. Review minutes of previous meetings.
 2. Review of Work progress.
 3. Field observations, problems, and decisions.
 4. Identification of problems that impede, or will impede, planned progress.
 5. Review of submittals schedule and status of submittals.
 6. Maintenance of progress schedule.
 7. Corrective measures to regain projected schedules.
 8. Planned progress during succeeding work period.
 9. Maintenance of quality and work standards.
 10. Effect of proposed changes on progress schedule and coordination.
 11. Other business relating to Work.
- E. Record minutes and distribute copies within two days after meeting to participants, with electronic copies to Architect, Owner, participants, and those affected by decisions made.

3.05 CONSTRUCTION PROGRESS SCHEDULE - SEE SECTION 01 3216

- A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- D. Within 10 days after joint review, submit complete schedule.
- E. Submit updated schedule with each Application for Payment.

3.06 COORDINATION DRAWINGS

CAPTUN23.00

Capitol Secure Walkway
& Mechanical Room Addition

ADMINISTRATIVE REQUIREMENTS

01 3000 - 3

10/11/2023
Early Site Package

- A. Provide information required by Project Coordinator for preparation of coordination drawings.
- B. Review drawings prior to submission to Architect.

3.07 DIGITAL DOCUMENT FILES AND RELEASES

- A. BIM Models: Projects are created by Architect and Engineers using Building Information Modelling software and not all projects will have these files available for Contractor's use. The final model is a composite of multiple models that will require separate models from consultants. Contact Architect and Engineers for specific availability and cost.
- B. AutoCAD files: Do not exist for architectural plans. Architect has capability to generate AutoCAD files that resemble the sheets as seen in the Construction Documents as well as generate entire floor plans of the building. This service can be provided at a cost to the Contractor per sheet/floor plan desired. See end of section for Digital Release form.
- C. Portable Digital Format (PDF): PDF of issued drawings can be provided to Contractor at no cost. Contact Architect for availability.
- D. Other documents: Contractor will have to directly contact consultants for trade specific files, such as AutoCAD files for topographical layout, etc.

3.08 REQUESTS FOR CHANGE ORDERS

- A. In order to facilitate checking of quotations for extras or credits, all proposals, except for those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and subcontracts. Labor and materials shall be itemized in manner prescribed above. Where major cost items are subcontracts, they shall be itemized also.

3.09 CONTRACTOR LIABILITY REQUIREMENTS

- A. The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect Engineer and the Architect Engineer's consultants as additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations. The Architect / Engineer, Engineer, and their respective Consultants are responsible for their own Professional Liability coverage.

3.10 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
 - 1. Product data.
 - 2. Shop drawings.
 - 3. Samples for selection.
 - 4. Samples for verification.
 - 5. Delegated Design Deferred submittals.
- B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. Samples will be reviewed only for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - CLOSEOUT SUBMITTALS.

3.11 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
 - 1. Design data.
 - 2. Certificates.
 - 3. Test reports.
 - 4. Inspection reports.
 - 5. Manufacturer's instructions.

6. Manufacturer's field reports.
 7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner. No action will be taken.

3.12 SUBMITTALS FOR PROJECT CLOSEOUT

- A. When the following are specified in individual sections, submit them at project closeout:
1. Project record documents.
 2. Operation and maintenance data.
 3. Warranties.
 4. Bonds.
 5. Other types as indicated.
- B. Submit for Owner's benefit during and after project completion.

3.13 NUMBER OF COPIES OF SUBMITTALS

- A. Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
- B. Documents for Information: Submit one electronic copy.
- C. Documents for Project Closeout: Make electronic reproductions of submittal files originally reviewed. Include electronic files of any submittals for information. All hard copies of Operational Manuals included with products and equipment should be collected and retained for close out documentation.
- D. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
1. After review, produce duplicates required for jobsite use & verification.
 2. Retained samples will not be returned to Contractor unless specifically so stated. Digital documentation of approved samples will be provided.

3.14 SUBMITTAL PROCEDURES

- A. Transmit each submittal with approved form and Contractors transmittal form. Transmittal shall be numbered sequentially and revised submittals should include original number and a sequential alphabetic suffix. Transmittal shall include list of each specification section or sections that are included in the submittal contents. Send transmitted submittal as one complete PDF; multiple files will not be reviewed and will need to be reassembled by Contractor.
- B. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number.
- C. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- D. Deliver physical submittals to Architect at business address. In some instances, larger physical samples can be coordinated to be delivered to the construction site, typically for use in a mock-up.
- E. Schedule submittals to expedite the Project, and coordinate submission of related items. Transmit higher priority submittals first and provide date for anticipated return of submittal.
- F. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor. When large quantities of submittals are transmitted in a short time frame, review time may take longer. Mark high priority submittals on transmittal to notify / assist in an expedited review.
- G. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work. Any proposed change or deviation from Contract Document plans or specifications must be clearly noted and easily identifiable on the submittal. Any change must be identified and specifically requesting

approval of proposed deviation by Architect or Engineer of Record. Failure to follow this requirement results in submitted deviation bearing the complete responsibility of the contractor.

- H. Comments made in submittals by Architect or Engineer that change contract costs need to be submitted to Architect as a Potential Change Order for Claims for review and approval by Owner prior to the change to project scope. Failure to follow this requirement, whether a cost savings or cost increase, results in the submitted cost change bearing the complete responsibility of the providing contractor.
- I. Provide space for Contractor and Architect review stamps. Submittals must be reviewed and stamped by Contractor, unstamped submittals will not be reviewed and will be returned.
- J. Submittals to be as complete, comprehensive and accurate as possible. Include all components requested to be reviewed in Submittal section 1.03 of the specifications. Do not split up a single specification section into multiple submittals (ie product data, samples, shop drawings, etc.). Avoid grouping unrelated specifications sections together in a submittal.
- K. Each submittal will only be reviewed two times; once for original review and then a second time for a potential revised submittal. Any further additional reviews must include General Contractor's explanation for their inability to conform with requirements. Additional reviews beyond aforementioned may have costs associated to complete additional reviews.
- L. When revised for resubmission, identify all changes made since previous submission. Cloud all changes and revised details / notes. Address all comments and/or questions posed in previous submission; lack of addressing all previous review comments are grounds for rejections of submittal. Include previous reviewed submittal pages after the last page of the new submittal information.
- M. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- N. Submittals not requested will not be recognized or processed.

3.15 AUTOCAD RELEASE FORM

- A. At your request, Witsell Evans Rasco, P.A. (WER) will provide electronic files for your convenience and use in the preparation of a bid or shop drawings related to Project: _____ subject to the following terms and conditions.
- B. WER's electronic files are compatible with AutoCad as a dwg. file. WER makes no representation as to the compatibility of these files with your hardware or your software beyond the specified release of the referenced specifications.
- C. Data contained on these electronic files is part of WER's instruments of service and shall not be used by you or anyone else receiving this data through or from you for any purpose other than as a convenience in the preparation of bids or shop drawings for the referenced project. Any other use or reuse by you or by others, will be at your sole risk and without liability or legal exposure to WER. You agree to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action of any nature against WER, its officers, directors, employees, agents or sub-consultants which may arise out of or in connection with your use of the electronic files.
- D. Furthermore, you shall, to the fullest extent permitted by law, indemnify and hold harmless WER from all claims, damages, losses and expenses, including attorney's fees arising out of or resulting from your use of these electronic files.
- E. **These electronic files are not contract documents.** Differences may exist between these electronic files and corresponding hard copy contract documents due to addenda, change orders or other revisions. WER makes no presentation regarding the accuracy or completeness of the electronic files you receive. In the event that a conflict arises between the signed contract documents prepared by WER and electronic files, the signed contract documents shall govern. You are responsible for determining if any conflict exists. By your use of these electronic files, you are not relieved of your duty to fully comply with the contract documents, including and without limitations, the need to check, confirm and coordinate all dimensions and details, take field measurements, verify field conditions and coordinate your work with that of other contractors for the project.
- F. Because of the potential that the information presented on the electronic files can be modified, unintentionally or otherwise, WER reserves the right to remove all indications of its ownership and/or involvement from each electronic display.
- G. WER will furnish you electronic files at a cost of **\$150.00** per building floor or sheet, for the following:
 - 1. _____
 - 2. _____
 - 3. _____
 A service fee of \$ (_____) shall be remitted to WER prior to delivery of the electronic files.
- H. Under no circumstances shall delivery of the electronic files for use by you be deemed a sale by WER and WER makes no warranties, either express or implied, of merchantability and fitness for any particular purpose. In no event shall WER be liable for any loss of profit or any consequential damages.

SIGNED:

WITSELL EVANS, RASCO PA CONTRACTOR NAME / TITLE

DATE: _____

ADDRESS / PHONE NUMBER

END OF SECTION

**SECTION 01 3216
CONSTRUCTION PROGRESS SCHEDULE**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preliminary schedule.
- B. Construction progress schedule, bar chart type.

1.02 RELATED SECTIONS

- A. Section 01 1000 - Summary: Work sequence.

1.03 REFERENCE STANDARDS

- A. AGC (CPSM) - Construction Planning and Scheduling Manual 2004.
- B. M-H (CPM) - CPM in Construction Management - Project Management with CPM 2015.

1.04 SUBMITTALS

- A. Within 10 days after date of Agreement, submit preliminary schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
 - 1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- D. Within 10 days after joint review, submit complete schedule.
- E. Submit updated schedule with each Application for Payment.
- F. Submit the number of opaque reproductions that Contractor requires, plus two copies that will be retained by Architect.

1.05 QUALITY ASSURANCE

- A. Scheduler: Contractor's personnel or specialist Consultant specializing in CPM scheduling with one years minimum experience in scheduling construction work of a complexity comparable to this Project, and having use of computer facilities capable of delivering a detailed graphic printout within 48 hours of request.

1.06 SCHEDULE FORMAT

- A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.
- B. Diagram Sheet Size: Maximum 22 x 17 inches or width required.
- C. Scale and Spacing: To allow for notations and revisions.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRELIMINARY SCHEDULE

- A. Prepare preliminary schedule in the form of a horizontal bar chart.

3.02 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify work of separate stages and other logically grouped activities.
- C. Include conferences and meetings in schedule.
- D. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.

- E. Coordinate content with schedule of values specified in Section 01 2000 - Price and Payment Procedures.
- F. Provide legend for symbols and abbreviations used.

3.03 BAR CHARTS

- A. Include a separate bar for each major portion of Work or operation.
- B. Identify the first work day of each week.

3.04 REVIEW AND EVALUATION OF SCHEDULE

- A. Participate in joint review and evaluation of schedule with Architect at each submittal.
- B. Evaluate project status to determine work behind schedule and work ahead of schedule.
- C. After review, revise as necessary as result of review, and resubmit within 10 days.

3.05 UPDATING SCHEDULE

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
- C. Annotate diagrams to graphically depict current status of Work.
- D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- E. Indicate changes required to maintain Date of Substantial Completion.
- F. Submit reports required to support recommended changes.
- G. Provide narrative report to define problem areas, anticipated delays, and impact on the schedule. Report corrective action taken or proposed and its effect.

3.06 DISTRIBUTION OF SCHEDULE

- A. Distribute copies of updated schedules to Contractor's project site file, to subcontractors, suppliers, Architect, Owner, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

END OF SECTION

**SECTION 01 3300
SUBMITTAL PROCEDURES**

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.03 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Architect's responsive action.
- B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.04 SUBMITTAL PROCEDURES

- A. General: Electronic copies of CAD Drawings of the Contract Drawings will not be provided by Architect for Contractor's use in preparing submittals.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Schedule" for list of submittals and time requirements for scheduled performance of related construction activities.
- D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on The Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 - 1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 - 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 - 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
 - 4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
 - 5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Consultants, allow 15 days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.
- E. Identification: Place a permanent label or title block on each submittal for identification.
 - 1. Indicate name of firm or entity that prepared each submittal on label or title block.
 - 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 - 3. Include the following information on label for processing and recording action taken:
 - a. Project name.

- b. Date.
 - c. Name and address of Architect.
 - d. Name and address of Contractor.
 - e. Name and address of subcontractor.
 - f. Name and address of supplier.
 - g. Name of manufacturer.
 - h. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06100.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06100.01.A).
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Location(s) where product is to be installed, as appropriate.
 - l. Other necessary identification.
- F. Deviations: Highlight, or otherwise specifically identify deviations from the Contract Documents on submittals.
- G. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
- 1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.
 - 2. Additional copies submitted for maintenance manuals will be marked with action taken and will be returned.
- H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.
- 1. Transmittal Form: Use AIA Document G810.
 - 2. Transmittal Form: Provide locations on form for the following information:
 - a. Project name.
 - b. Date.
 - c. Destination (To:).
 - d. Source (From:).
 - e. Names of subcontractor, manufacturer, and supplier.
 - f. Category and type of submittal.
 - g. Submittal purpose and description.
 - h. Specification Section number and title.
 - i. Drawing number and detail references, as appropriate.
 - j. Transmittal number.
 - k. Submittal and transmittal distribution record.
 - l. Remarks.
 - m. Signature of transmitter.
 - 3. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.
- I. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
- 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked "Approved by Architect."

- J. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- K. Use for Construction: Use only final submittals with mark indicating "Approved by Architect" taken by Architect.

PART 2 PRODUCTS

2.01 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
 - 1. Submit electronic submittals directly to extranet specifically established for Project.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Standard color charts.
 - e. Manufacturer's catalog cuts.
 - f. Wiring diagrams showing factory-installed wiring.
 - g. Printed performance curves.
 - h. Operational range diagrams.
 - i. Mill reports.
 - j. Standard product operation and maintenance manuals.
 - k. Compliance with specified referenced standards.
 - l. Testing by recognized testing agency.
 - m. Application of testing agency labels and seals.
 - n. Notation of coordination requirements.
 - 4. Submit Product Data before or concurrent with Samples.
 - 5. Number of Copies: Submit three copies of Product Data, unless otherwise indicated. Architect will return one copy. Mark up and retain one returned copy as a Project Record Document.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
 - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
 - f. Shopwork manufacturing instructions.
 - g. Templates and patterns.
 - h. Schedules.
 - i. Design calculations.
 - j. Compliance with specified standards.
 - k. Notation of coordination requirements.
 - l. Notation of dimensions established by field measurement.
 - m. Relationship to adjoining construction clearly indicated.

- n. Seal and signature of professional engineer if specified.
 - o. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
 - 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
 - 3. Number of Copies: Submit two opaque (bond) copies of each submittal. Architect will return one copy.
 - 4. Number of Copies: Submit three opaque copies of each submittal, unless copies are required for operation and maintenance manuals. Submit five copies where copies are required for operation and maintenance manuals. Architect will retain two copies; remainder will be returned.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
- 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 - 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of appropriate Specification Section.
 - 3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 - 4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 - 5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
- 1. Type of product. Include unique identifier for each product.

2. Number and name of room or space.
 3. Location within room or space.
 4. Number of Copies: Submit three copies of product schedule or list, unless otherwise indicated. Architect will return two copies.
 - a. Mark up and retain one returned copy as a Project Record Document.
- F. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Schedule" for Construction Manager's action.
- G. Submittals Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Schedule."
- H. Application for Payment: Comply with requirements specified in Division 1 Section "Payment Procedures."
- I. Schedule of Values: Comply with requirements specified in Division 1 Section "Payment Procedures."
- J. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
1. Name, address, and telephone number of entity performing subcontract or supplying products.
 2. Number and title of related Specification Section(s) covered by subcontract.
 3. Drawing number and detail references, as appropriate, covered by subcontract.
 4. Number of Copies: Submit three copies of subcontractor list, unless otherwise indicated. Architect will return two copies.
 - a. Mark up and retain one returned copy as a Project Record Document.

2.02 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect will not return copies.
 2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 3. Test and Inspection Reports: Comply with requirements specified in Division 1 Section "Quality Requirements."
- B. Coordination Drawings: Comply with requirements specified in Division 1 Section "Project Management and Coordination."
- C. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Schedule."
- D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- E. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- F. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- G. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- H. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

- I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- J. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- K. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - 1. Name of evaluation organization.
 - 2. Date of evaluation.
 - 3. Time period when report is in effect.
 - 4. Product and manufacturers' names.
 - 5. Description of product.
 - 6. Test procedures and results.
 - 7. Limitations of use.
- L. Schedule of Tests and Inspections: Comply with requirements specified in Division 1 Section "Quality Requirements."
- M. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- N. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- O. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- P. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 1 Section "Operation and Maintenance Data."
- Q. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- R. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
 - 1. Preparation of substrates.
 - 2. Required substrate tolerances.
 - 3. Sequence of installation or erection.
 - 4. Required installation tolerances.
 - 5. Required adjustments.
 - 6. Recommendations for cleaning and protection.
- S. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:

1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- T. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- U. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to Architect.
1. Architect will not review submittals that include MSDSs and will return them for resubmittal.

PART 3 EXECUTION

3.01 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.02 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
- C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION

**SECTION 01 4000
QUALITY REQUIREMENTS**

PART 1 GENERAL

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS

- A. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.
- B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Accepted mock-ups shall be a comparison standard for the remaining Work.
- D. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.

3.03 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

3.04 TESTING AND INSPECTION

- A. See individual specification sections for testing required.
- B. Testing Agency Duties:
- C. Limits on Testing/Inspection Agency Authority:
- D. Contractor Responsibilities:
 - 1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
 - 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
 - 3. Provide incidental labor and facilities:
 - a. To provide access to Work to be tested/inspected.

- b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
- c. To facilitate tests/inspections.
- d. To provide storage and curing of test samples.
- 4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
- 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- 6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- E. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.
- F. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.05 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not complying with specified requirements.
- B. If, in the opinion of Architect, it is not practical to remove and replace the work, Architect will direct an appropriate remedy or adjust payment.

END OF SECTION

**SECTION 01 4216
DEFINITIONS**

PART 1 GENERAL

1.01 SUMMARY

- A. Other definitions are included in individual specification sections.

1.02 DEFINITIONS

- A. Furnish: To supply, deliver, unload, and inspect for damage.
- B. Install: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, start up, and make ready for use.
- C. Product: Material, machinery, components, equipment, fixtures, and systems forming the work result. Not materials or equipment used for preparation, fabrication, conveying, or erection and not incorporated into the work result. Products may be new, never before used, or re-used materials or equipment.
- D. Provide: To furnish and install.
- E. Supply: Same as Furnish.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary utilities.
- B. Temporary telecommunications services.
- C. Temporary sanitary facilities.
- D. Temporary Controls: Barriers, enclosures, and fencing.
- E. Security requirements.
- F. Vehicular access and parking.
- G. Waste removal facilities and services.
- H. Field offices.

1.02 TEMPORARY UTILITIES

- A. Owner will provide the following:
 - 1. Electrical power, consisting of connection to existing facilities.
 - 2. Water supply, consisting of connection to existing facilities. Coordinate with owner.
- B. Provide and pay for distribution of all electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes.
- C. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.03 TELECOMMUNICATIONS SERVICES

- A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.
- B. Telecommunications services shall include:
 - 1. Windows-based personal computer dedicated to project telecommunications, with necessary software and laser printer.
 - 2. Telephone Land Lines: One line, minimum; one handset per line.
 - 3. Internet Connections: Minimum of one; DSL modem or faster.
 - 4. Facsimile Service: Minimum of one dedicated fax machine/printer, with dedicated phone line.
 - 5. Facsimile Service: Fax-to-email software on personal computer.

1.04 TEMPORARY SANITARY FACILITIES

- A. Use of existing facilities located at the 2nd floor is permitted.
- B. Maintain daily in clean and sanitary condition.

1.05 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing buildings adjacent to the site, if required.
- C. Provide protection for plants designated to remain. Replace damaged plants.
- D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.
- E. Traffic Controls: As required by the City of Little Rock for construction access.

1.06 FENCING

- A. Construction: Commercial grade chain link fence.
- B. Provide 6 foot high fence around construction site; equip with vehicular and pedestrian gates with locks.

1.07 EXTERIOR ENCLOSURES

- A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.08 INTERIOR ENCLOSURES

- A. Provide temporary partitions and ceilings as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.
- B. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces:

1.09 SECURITY

- A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

1.10 VEHICULAR ACCESS AND PARKING

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Coordinate access and haul routes with governing authorities and Owner.
- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Provide means of removing mud from vehicle wheels before entering streets.
- E. Designated existing on-site roads may be used for construction traffic.
- F. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, additional off-site parking may be required. Co-ordinate with UALR.

1.11 WASTE REMOVAL

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- B. Provide containers with lids. Remove trash from site periodically.
- C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
- D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.12 FIELD OFFICES

- A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture, drawing rack, and drawing display table.
- B. Construction meeting location to be confirmed with Architect prior to starting work.

1.13 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing facilities used during construction to original condition.

D. Restore new permanent facilities used during construction to specified condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 5930
SECURITY REGULATIONS**

PART 1 GENERAL

1.01 GENERAL SECURITY REQUIREMENTS

- A. Bidding Clearances: Bidders will be required to comply with security regulations imposed by the occupying agency including any necessary clearances. Access to the project site will be limited to specific times established by the Government.
- B. Construction Clearances: After award of the Contract, all Contractor employees shall be required to furnish information for security clearances and shall comply with security regulations as imposed by the occupying agency.
- C. Notification: Notify the Architect, or his designated representative, not less than 48 hours prior to performing work in a security area. Include the following:
 - 1. Companies: Name of each company performing the work.
 - 2. Personnel: Name, social security number and date of birth of each individual who is to work.
 - 3. Time: The exact time, date, and hours of work.
 - 4. Areas: Specific areas of the building in which work is to be performed.

1.02 GENERAL SECURITY REGULATIONS

- A. Nonpublicity: It is a specific condition of this Contract that the Contractor, or any subcontractors performing work on this project, shall not use or allow to be used any aspect of this project for publicity or advertising brochures.
- B. Agency Security Regulations: All persons employed within the boundaries of the property or restricted-access areas therein, and all persons permitted to enter such property and areas shall comply with the security regulations that have been established for this Contract.
 - 1. The Contractor agrees on behalf of himself and all subcontractors that the following security regulations will be observed by Contractor and subcontractor personnel on the property. The Contractor shall make it a specific provision of his subcontracts that these regulations be accepted.
 - 2. At the commencement of the work under this Contract, the following security facilities and procedures will apply:
 - a. The Contractor shall provide information about all Contractor and subcontractor personnel and others who require continuing access to the site, before access is required and when access ceases.
 - b. Within 10 calendar days after the award of the Contract, the Contractor shall submit a list on the Contractor's letterhead stationery of all employees, subcontractors and their employees, and others who will perform work or otherwise require access to the site. Personnel shall be listed in alphabetical order by company. The list shall include the full name, social security number and date of birth for each individual.
 - c. Name of any employee added later to the original list shall be submitted with the same information on the Contractor's letterhead stationery at least 8 calendar days in advance of the date of access by the employee.
 - d. The Contractor shall notify the Government in writing when personnel are no longer employed by the Contractor or a subcontractor. Individual's name, social security number and date of birth, and company who employed the individual, shall be included.
 - 3. At the commencement of the work under this contract, the following security procedures shall apply to the Contractor and all subcontractors.
 - a. Do not enter the building without building passes or park without parking permits. Vehicle authorization requests shall be required for any vehicle entering the site, and shall be submitted 24 hours before the date and time of access. Access shall be restricted to picking up and dropping off materials and supplies, and, with a permit issued by the Government, to parking in designated areas.

- b. Comply with the security regulations of the existing building.
 - c. In the case of any questions as to the eligibility of an individual to obtain a pass, notify the Architect, who will obtain a determination whether the individual can obtain a pass.
 - d. Cameras are not permitted without written permission from the Occupant Agency and the Architect or his designated representative. If approved, permission will be granted in writing and will provide additional guidelines. In any case, all film will be turned over to the Architect or his designated representative. The Contractor shall be responsible for the costs of developing film.
 - e. Personnel may be subject to inspection of their personal effects when entering and leaving the facility. In addition, unscheduled inspections of personnel may be made while on site.
 - f. If any work is canceled, notify the Architect or his designated representative.
4. The Occupant Agency reserves the right to close down the job site and order Contractor personnel off the premises in the event of a national emergency or a shut-down, for as long as security problems persist. The Contractor may only return to the site with verbal approval from the Occupant Agency and the Architect or his authorized representative.
 5. The Government reserves the right to exclude or remove from the site or building any employee of the Contractor or a subcontractor whom the Government deems incompetent, careless, insubordinate or otherwise objectionable, or whose continued employment on the work is deemed by the Government to be contrary to the public interests. The Government further reserves the right to complete processing of the security documentation for personnel assigned to work within restricted access areas prior to access to such areas by the personnel.
 6. No interviews shall be conducted within the secured area. The Contractor and subcontractors will be required to maintain a field office, outside the limits established by the security area, for all public contacts. Applicants for employment and other persons not entitled to access to the secured area shall be required to contact the Contractor or subcontractor at these offices.
 7. For overtime work, the Contractor shall give the Architect or his designated representative at least 3 calendar days notice. This notice is required so that security escorts may be provided and is separate and distinct from any notices required for utility shutdown or other outages. Also, the Contractor shall notify the Government if personnel will not report to the job site on a particular day so that the security escort can be released for other duties.
 8. A detailed weekly schedule shall be submitted once a week by the close of business on the last day of the previous week's work. The schedule shall include the following:
 - a. Specific location of work for each trade.
 - b. Description of work for each trade.
 - c. Number of persons who will be on site for each location and trade.
 - d. Specific impacts required, such as equipment or utility shutdowns.
 - e. Hours of operation.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

**SECTION 01 5950
SAFETY AND HEALTH**

PART 1 GENERAL

1.01 SUMMARY

- A. References: In addition to publications referenced in the Construction Contract Clauses, the following Code of Federal Regulations (CFR) publications designate and define hazardous materials and conditions, and establish procedures for handling these materials and conditions.
 - 1. 29 CFR, Part 1910: Occupational Safety and Health Administration (OSHA) General Industry and Health Standards.
 - 2. 29 CFR, Part 1926: OSHA Construction Industry Standards.
 - 3. 40 CFR, Part 61: National Emission Standards for Hazardous Air Pollutants.
 - 4. 40 CFR, Part 261: Environmental Protection Agency (EPA) Characteristics of Hazardous Waste.
 - 5. 40 CFR, Part 761, EPA Polychlorinated Biphenyls (PCBs), Manufacturing, Processing, Distribution in Commerce and Use Prohibitions.
 - 6. 40 CFR, Part 763: EPA Asbestos.
- B. Hazardous Materials: Some hazardous and toxic materials and substances are included in 29 CFR Part 1910, subparts H and Z, and in 29 CFR Part 1926. Commonly encountered hazardous materials include but are not limited to asbestos, PCBs, explosives and radioactive material.
 - 1. Asbestos may be found in spray-on fireproofing, insulation, boiler lagging, pipe coverings floor tile, and other materials.
 - 2. PCBs may be contained in transformers, capacitors, voltage regulators, oil switches, mechanical insulation and other materials.
- C. Acquisition of Publications: Referenced CFR publications may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

1.02 SAFETY MEETING

- A. Prior to commencing construction, representatives of the Contractor, including the principal on-site project representative and one or more safety representatives, shall meet with designated representatives of the Architect for the purpose of reviewing the Contract's safety and health requirements.
- B. The Contractor's safety and health program shall be reviewed, and implementation of safety and health provisions pertinent to the Work shall be discussed.

1.03 COMPLIANCE WITH REGULATIONS

- A. The Work, including contact with or handling of hazardous materials, disturbance or dismantling of structures containing hazardous materials, and disposal of hazardous materials, shall comply with the applicable requirements of 29 CFR Parts 1910 and 1926, and 40 CFR Parts 61, 261, 761 and 763.
 - 1. Work involving disturbance or dismantling of asbestos or asbestos containing materials, demolition of structures containing asbestos and removal of asbestos, shall comply with 40 CFR Part 61, Subparts A and M, and 40 CFR Part 763, as applicable
 - 2. Work shall additionally comply with applicable state and local safety and health regulations.
 - 3. In case of a conflict between applicable regulations, the more stringent requirements shall apply.
- B. Contractor Responsibility: The Contractor shall assume full responsibility and liability for compliance with all applicable codes, standards and regulations pertaining to the health and safety of personnel during execution of the Work, and shall hold the Government harmless for any action on the Contractor's part, or that of the Contractor's employees or subcontractors, that results in illness, injury or death.

1. The Contractor shall have written safety and health programs in compliance with 29 CFR Parts 1910 and 1926.

1.04 SUBMITTALS

- A. Safety and Health Programs: The Contractor shall submit, for approval, copies of the project safety and health programs, as applicable to the work scope, or required as a result of the safety meeting, including but not necessarily limited to the following:
 1. Occupational Noise Exposure.
 2. Fall Protection.
 3. Personnel Protective Equipment.
 4. Control of Hazardous Energy.
 5. Electrical Safety Related Work Practices.
 6. Lead.
 7. Asbestos.
 8. Respirator Protection.
 9. Confined spaces.
- B. Contractor's Safety Plan: In addition to specific safety and health programs applicable to the project, Contractor shall submit firm's general safety plan listing emergency procedures and contact persons with home addresses and telephone numbers.
- C. Permits: If hazardous materials are disposed of off-site, submit copies of shipping manifests and permits from applicable federal, state or local authorities and disposal facilities, and submit certificates that the material has been disposed of in accordance with regulations.
- D. Accident Reporting: Submit a copy of each accident report that the Contractor or Subcontractors submits to their insurance carriers, within seven calendar days after the date of the accident.

PART 2 PRODUCTS

2.01 PERSONNEL PROTECTIVE EQUIPMENT

- A. Special facilities, devices, equipment and similar items used by the Contractor in execution of the Work shall comply with 29 CFR Part 1910, Subpart I and other applicable regulations.

2.02 HAZARDOUS MATERIALS

- A. The Contractor shall bring to the attention of the Architect, or the Architect's authorized representative, any material encountered during execution of the Work that the Contractor suspects is hazardous and not already identified to be abated.
- B. The Architect shall determine whether the Contractor shall perform tests to determine if the material is hazardous.
- C. If the Architect directs the Contractor to perform tests and the material is found to be hazardous, or if the material is found to be hazardous without Contractor testing, a change to the Contract price may be provided, subject to the applicable provisions of the Contract.

PART 3 EXECUTION

3.01 EMERGENCY SUSPENSION OF WORK

- A. When the Contractor is notified by the Architect, or the Architect's authorized representative, of non-compliance with the safety or health provisions of the Contract, the Contractor shall immediately, unless otherwise instructed, correct the unsafe or unhealthy condition.
 1. If the Contractor fails to comply promptly, all or part of the Work will be stopped by notice from the Architect or the Architect's authorized representative.
 2. When, in the opinion of and by notice given by the Architect or the Architect's authorized representative, satisfactory corrective action has been taken by the Contractor, work shall resume.
 3. The Contractor shall not be allowed any extension of time or compensation for damages in connection with a work stoppage for an unsafe or unhealthy condition.

3.02 PROTECTION OF PERSONNEL

- A. The Contract shall take all necessary precautions to prevent injury to the public, occupants, or damage to property of others. The public and occupants includes all persons not employed by the Contractor or a subcontractor.
- B. Wherever practical, the work area shall be fenced, barricaded or otherwise blocked off from the public or occupants to prevent unauthorized entry into the work area.
 - 1. Provide traffic barricades and traffic control signage where construction activities occur in vehicular areas.
 - 2. Corridors, aisles, stairways, doors and exitways shall not be obstructed or used in a manner to encroach upon routes of ingress or egress utilized by the public or occupants, or to present an unsafe or unhealthy condition to the public or occupants.
 - 3. Store, position and use equipment, tools, materials, scraps and trash in a manner that does not present a hazard to the public or occupants by accidental shiftings, ignition or other hazardous activity.
 - 4. Store and transport refuse and debris in a manner to prevent unsafe and unhealthy conditions for the public and occupants. Cover refuse containers, and remove refuse on a frequent regular basis acceptable to the Architect. Use tarpaulins or other means to prevent loose transported materials from dropping from trucks.

3.03 ENVIRONMENTAL PROTECTION

- A. Dispose of solid, liquid and gaseous contaminants in accordance with local codes, laws, ordinances and regulations.
- B. Comply with applicable federal, state and local noise control laws, ordinances and regulations, including but not limited to 29 CFR 1910.95 and 29 CFR 1926.52.

END OF SECTION

**SECTION 01 6000
PRODUCT REQUIREMENTS**

PART 1 GENERAL V.20

1.01 SECTION INCLUDES

- A. General product requirements.
- B. Re-use of existing products.
- C. Transportation, handling, storage and protection.
- D. Product option requirements.
- E. Substitution limitations.
- F. Procedures for Owner-supplied products.
- G. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 REFERENCE STANDARDS

- A. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.03 SUBMITTALS

- A. Proposed Products List: Submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
 - 1. Submit within 15 days after date of Agreement.
 - 2. For products specified only by reference standards, list applicable reference standards.
- B. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- C. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- D. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.
- B. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.
- C. Reused Products: Reused products include materials and equipment previously used in this or other construction, salvaged and refurbished as specified.

2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by Contract Documents.
- B. Use of products having any of the following characteristics is not permitted:
 - 1. Made of wood from newly cut old growth timber.
- C. Where other criteria are met, Contractor shall give preference to products that:
 - 1. If used on interior, have lower emissions, as defined in Section 01 6116.
 - 2. If wet-applied, have lower VOC content, as defined in Section 01 6116.
 - 3. Are extracted, harvested, and/or manufactured closer to the location of the project.

4. Have longer documented life span under normal use.
5. Result in less construction waste. See Section 01 7419
6. Are made of recycled materials.
7. Are Cradle-to-Cradle Certified.
8. Have a published GreenScreen Chemical Hazard Analysis.

D. Provide interchangeable components of the same manufacture for components being replaced.

2.03 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.04 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

- A. See Section 01 2500 - Substitution Procedures.

3.02 OWNER-SUPPLIED PRODUCTS

- A. Owner's Responsibilities:
 1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
 2. Arrange and pay for product delivery to site.
 3. On delivery, inspect products jointly with Contractor.
 4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
 5. Arrange for manufacturers' warranties, inspections, and service.
- B. Contractor's Responsibilities:
 1. Review Owner reviewed shop drawings, product data, and samples. Notify Owner and the Architect immediately if supplied product affects installed final work.
 2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
 3. Handle, store, install and finish products.
 4. Repair or replace items damaged after receipt.

3.03 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.

- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.04 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 01 7419.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Provide off-site storage and protection when site does not permit on-site storage or protection.
- G. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- H. Comply with manufacturer's warranty conditions, if any.
- I. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- J. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- K. Prevent contact with material that may cause corrosion, discoloration, or staining.
- L. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- M. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

**SECTION 01 7000
EXECUTION REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Pre-installation meetings.
- C. Surveying for laying out the work.
- D. Cleaning and protection.
- E. Demonstration and instruction of Owner personnel.
- F. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- G. General requirements for maintenance service.

1.02 RELATED REQUIREMENTS

- A. Section 01 1000 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.
- B. Section 01 4000 - Quality Requirements: Testing and inspection procedures.
- C. Section 01 5000 - Temporary Facilities and Controls: Temporary exterior enclosures.

1.03 REFERENCE STANDARDS

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations 2022, with Errata (2021).

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate Contractor.

1.05 QUALIFICATIONS

- A. For field engineering, employ a professional engineer of the discipline required for specific service on Project, licensed in the State in which the Project is located.

1.06 PROJECT CONDITIONS

- A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- B. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
- C. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
- D. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.
- E. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.07 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.
- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After tenant occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of tenant's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

- A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Architect four days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of examination, preparation and installation procedures.
 - 2. Review coordination with related work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Contractor shall locate and protect survey control and reference points.
- D. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- E. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- F. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
- G. Utilize recognized engineering survey practices.
- H. Establish a minimum of two permanent bench marks on site, referenced to established control points. Record locations, with horizontal and vertical data, on project record documents.
- I. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, ground floor elevations.
- J. Periodically verify layouts by same means.
- K. Maintain a complete and accurate log of control and survey work as it progresses.

3.05 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.06 CUTTING AND PATCHING

3.07 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.08 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.09 SYSTEM STARTUP

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Architect and owner seven days prior to start-up of each item.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- D. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify that wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
- G. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.10 DEMONSTRATION AND INSTRUCTION

- A. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- C. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of owner personnel.

3.11 ADJUSTING

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

3.12 FINAL CLEANING

- A. Use cleaning materials that are nonhazardous.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

- D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- E. Clean filters of operating equipment.
- F. Clean debris from roofs, gutters, downspouts, and drainage systems.
- G. Clean site; sweep paved areas, rake clean landscaped surfaces.
- H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.13 MAINTENANCE

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

**SECTION 01 7310
CUTTING AND PATCHING**

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.
- B. Related Sections include the following:
 - 1. Division 1 Section "Selective Demolition" for demolition of selected portions of the building.
 - 2. Divisions 2 through 16 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.03 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.04 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 - 3. Products: List products to be used and firms or entities that will perform the Work.
 - 4. Dates: Indicate when cutting and patching will be performed.
 - 5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
 - 6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
 - 7. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.05 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.

- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.06 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 PRODUCTS

2.01 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

3.03 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete & Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 6. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION

**SECTION 01 7350
FIRE PREVENTION PRECAUTIONS FOR HOT WORK**

PART 1 GENERAL

1.01 SUMMARY

- A. This section applies to safeguards to be observed in performing hot work, including welding, soldering, brazing and other operations where open flames or implements utilizing heat are used.

1.02 SAFETY PRECAUTIONS

- A. The Contractor shall ensure that operations involving the use of open-flame, electrical arc equipment or flammable substances are not conducted until a permit for welding, cutting, and burning has been completed, signed and issued by the GSA Property Manager.
- B. Prior to commencing operations, a positive determination shall be made that it is impractical to conduct the hot work in a shop area or outside of the building. Coordinate suitable locations for hot equipment operations agreeable to the Architect's Representative.

1.03 NOTIFICATION

- A. The Contractor shall notify the Architect's Representative of the area of operations for each day and of all subsequent changes that occur.
- B. The Contractor shall notify the GSA Property Manager of all locations where hot work has been performed not less than 30 minutes or more than 90 minutes after work is completed or stopped for the day.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.01 INSPECTION

- A. Before starting operations, the Contractor shall furnish trained personnel to provide fire watches for locations where hot work is to be performed. One fire watcher may observe several locations in a relatively small contiguous area if approved by the Architect's Representative.
 - 1. Contractor shall furnish suitable type, fully-charged, operable portable fire extinguisher to each fire watcher.
 - 2. The Contractor shall provide fire watchers who know how to operate the fire extinguisher, how to turn on a fire alarm and how to summon the fire department.
- B. Before starting operations, take suitable precautions to minimize the hazard of a fire communicating to the opposite side of walls, floors, ceilings and roofs from the operations.

3.02 SAFETY MEASURES

- A. Hot work shall not be done in or near rooms or areas where flammable liquids or explosive vapors are present or thought to be present. A combustible gas indicator (explosimeter) test shall be conducted to assure that each area is safe. The Contractor is responsible for arranging and paying for each test.
- B. Insofar as possible, the Contractor shall remove and keep the area free from all combustibles, including rubbish, paper and waste within a radius of 25 feet from hot operations.
 - 1. If combustible material cannot be removed, the Contractor shall furnish fireproof blankets to cover such materials. At the direction of the Building Manager or Architect's Representative, floors, walls, and ceilings of combustible material shall be wetted thoroughly with water before, during, and after operations sufficiently to afford adequate protection.
 - 2. Where possible, the Contractor shall furnish and use baffles of metal or gypsum board to prevent the spraying of sparks, hot slag and other hot particles into surrounding combustible material.
- C. The Contractor shall prevent the spread of sparks and particles of hot metal through open windows, doors, and holes and cracks in floors, walls, ceilings and roofs.

- D. Cylinders of gas used in hot work shall be placed a safe distance from the work. The Contractor shall provide hoses and equipment free of deterioration, malfunction and leaks. Suitable supports shall be provided to prevent accidental overturning of cylinders. All cylinder control valves shall be shut off while in use with the gas pressure regulator set at 15 psi or less.
- E. When hot work operations are completed or ended for the day, each location of the day's work shall be inspected by the Contractor 30 to 60 minutes after completion of operations to detect for hidden or smoldering fires and to ensure that proper housekeeping is maintained. Contractor shall cleanup the area of work at the end of each shift or workday.
- F. Where sprinkler protection exists, the sprinkler system shall be maintained without interruption while operations are being performed. If operations are performed close to automatic sprinkler heads, gypsum board sheets or damp cloth guards may be used to shield the individual heads temporarily. The heads shall be inspected by the Contractor immediately after hot work operations cease, to ensure all materials have been removed from the heads and that the heads have not been damaged.
- G. Suitable type, fully-charged, operable portable fire extinguisher shall be available at all times during hot work operations.
- H. If any of the above safeguards are not employed, or are violated, the Architect's Representative may, by written notice, stop the work until compliance is obtained. Such stoppage shall not relieve the Contractor from performing his work within the Contract period for the Contract price.

END OF SECTION

**SECTION 01 7800
CLOSEOUT SUBMITTALS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Warranties and bonds.

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01 7000 - Execution Requirements: Contract closeout procedures.
- C. Individual Product Sections: Specific requirements for operation and maintenance data.
- D. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
 - 1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
 - 2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
 - 3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
 - 4. Submit two sets of revised final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 - 1. Changes made by Addenda and modifications.

- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 3. Field changes of dimension and detail.
 - 4. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

- A. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- B. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- C. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For Each Item of Equipment and Each System:
 - 1. Description of unit or system, and component parts.
 - 2. Identify function, normal operating characteristics, and limiting conditions.
 - 3. Include performance curves, with engineering data and tests.
 - 4. Complete nomenclature and model number of replaceable parts.
- B. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- C. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- D. Provide servicing and lubrication schedule, and list of lubricants required.
- E. Include manufacturer's printed operation and maintenance instructions.
- F. Include sequence of operation by controls manufacturer.
- G. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- H. Additional Requirements: As specified in individual product specification sections.

3.05 OPERATION AND MAINTENANCE MANUALS

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.
- B. Prepare data in the form of an instructional manual.
- C. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- D. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.
- E. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, in three parts as follows:
 - 1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect, Contractor, Subcontractors, and major equipment suppliers.

2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
 - a. Significant design criteria.
 - b. List of equipment.
 - c. Parts list for each component.
 - d. Operating instructions.
 - e. Maintenance instructions for equipment and systems.
 - f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
3. Part 3: Project documents and certificates, including the following:
 - a. Shop drawings and product data.

3.06 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.

END OF SECTION

**SECTION 31 1100
CLEARING AND GRUBBING**

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Clearing and grubbing site and street right-of-way.
- B. Disposing of removed material

1.02 RELATED WORK

- A. Section 31 2000 – Earth Moving.

1.03 SUBMITTALS

- A. See Related Work

PART 2 PRODUCTS

- A. No Products included

PART 3 EXECUTION

3.01 SITE PREPARATION & PROTECTION

- A. Protection of Existing Improvements.
 - 1. Provide protections necessary to prevent damage to existing improvements indicated to remain in place.
 - 2. Protect improvements on adjoining properties.
 - 3. Restore damaged improvements to their original condition, as acceptable to Architect/Engineer or other parties having jurisdiction.
- B. Protection of Existing Trees and Vegetation:
 - 1. Protect existing trees and other vegetation, indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bank, smothering of trees by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line. Provide temporary guards to protect trees and vegetation to be left standing.
 - 2. Water trees and other vegetation to remain within limits of contract work as required to maintain their health during course of construction operations.
 - 3. Repair or replace trees and vegetation indicated to remain which are damaged by construction operations, in manner acceptable to the Architect/Engineer. Employ qualified tree surgeon/arborist to repair damage to trees and shrubs.

3.02 SITE CLEARING

- A. General: clear construction areas of trees, vegetation, improvements, debris, or other obstructions interfering with installation of new construction. Remove such items elsewhere on site or premises as specifically indicated. Tree removals include the removal of root balls and roots.
- B. Removal of Improvements: Remove above-grade and below-grade improvements necessary to permit construction, and other work as indicated.
- C. Abandonment or removal of certain underground pipe or conduits may be shown on mechanical or electrical drawings, and is included under work of this section. Removal of all other abandoned underground piping or conduit interfering with construction is included under this section.

3.03 DISPOSAL OF WASTE MATERIALS

- A. Burning is not permitted on Owner's property.

- B. Remove cleared waste materials from Owner's property and dispose of at an off site location secured by the contractor.

END OF SECTION

**SECTION 31 2000
EARTH MOVING**

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Stripping and stockpiling surface layer of topsoil and organic matter in building and traffic areas and in all cut and fill areas.
- B. Removing and disposing of material unsuitable for use in controlled fill.
- C. Excavating site to required subgrade for controlled fill and grading site to required slopes.
- D. Placing and compacting excavated material and borrow material to required density and at required subgrade and slope for structures, pavement areas, and other controlled fills.

1.02 RELATED WORK

- A. Section 31 2216 – Fine Grading.
- B. Section 33 0516 – Manholes and Structure.

1.03 REFERENCE STANDARDS

- A. ASTM D422 – Particle Size Analysis of Soils.
- B. ASTM D4318 – Test for Liquid Limit of Soils.
- C. ASTM D4318 – Test for Plastic Limit of Soils.
- D. ASTM D2216 – Method of Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil Aggregate Mixtures.
- E. ASTM D3017 – Moisture Content on Soil Aggregates in Place by Nuclear Methods (Shallow Depth).
- F. ASTM D698 – Standard Test Method for Moisture Density, Relations of Soils, and Soil Aggregate Mixtures Using 5.5 lb Rammer and 12" Drop.
- G. ASTM D1557 – Standard Test Methods for Moisture Density Relations of Soils and Soil Aggregate Using 10 lb. Rammer and 18" Drop.
- H. ASTM D2922 – Density of Soil and Soil Aggregates in Place by Nuclear Method (Shallow Depth).

1.04 SUBMITTALS

- A. See Related Work

1.05 SITE CONDITIONS

- A. Establish positive surface drainage during and following clearing and grading activities using proper ditching and sloping methods.
- B. Provide erosion control measures to prevent mud and slit from flowing onto adjacent property.
- C. Erect sheeting, shoring, and bracing as necessary for protection of persons, utilities improvements, and excavations.

PART 2 PRODUCTS

2.01 SUITABLE MATERIALS FOR CONTROLLED FILL

- A. On site excavated soils:
 - 1. Unified Soils Classification Systems Soils.
 - a. Class SC
 - b. Class GC

- c. Class CL
 - 2. Soils having Liquid Limit of less than 45, Plasticity Index (PI) of 20 or less.
 - 3. Other soils approved by the Engineer.
- B. Borrow Material:
 - 1. Soils meeting the requirements of sub-paragraph A.1 of this Article.
- C. Material meeting the requirements of selected material as described in Section 210 of the Arkansas State Highway Department's Standards Specifications for Highway Construction, Edition of 2003.

2.02 UNSUITABLE MATERIAL FOR CONTROLLED FILL

- A. All areas: Organic top soils, soils containing roots, vegetable matter, or trash, and silts (ML) and clays (CH), and cobbles and fractured rock more than 3 inches in greatest dimension.

PART 3 EXECUTION

3.01 SUBSURFACE INVESTIGATION

- A. The Contractor is responsible for having a thorough knowledge of all Drawings, Specifications, General and Supplementary Conditions, existing site conditions, and other Contract Documents. Failure to acquaint himself with this knowledge does not relieve him of the responsibility for performing his work in a manner acceptable to the Owner. No additional compensation will be allowed because of conditions that occur due to failure by the Contractor to familiarize himself and all workers with this knowledge.
- B. Protection of Existing Trees and Vegetation:
 - 1. Protect existing trees and other vegetation, indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bank, smothering of trees by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line. Provide temporary guards to protect trees and vegetation to be left standing.
 - 2. Water trees and other vegetation to remain within limits of contract work as required to maintain their health during course of construction operations.
 - 3. Repair or replace trees and vegetation indicated to remain which are damaged by construction operations, in manner acceptable to the Architect/Engineer. Employ qualified tree surgeon to repair damage to trees and shrubs.

3.02 PREPARATION

- A. Complete clearing work, removing visible unsuitable materials from site.
- B. Protect benchmarks, site corner pins and existing street paving from damage by equipment.
- C. Stake the work:
- D. Before starting the excavation, establish location and extent of underground utilities occurring in work area.
- E. Notify utility companies of lines which are in the way of excavation.
- F. Protect existing utility lines to remain which pass through the work area.
- G. Protect utility services uncovered by excavation.
- H. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.

- I. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shut-off of services if lines are active.

3.03 EXCAVATION PROCEDURES

A. Excavation General:

1. Strip topsoil in cut and fill areas to whatever depths encountered in a manner to prevent intermingling with underlying subsoil or other objectionable material. Remove and dispose of heavy growth of grass and surface debris from areas prior to stripping topsoil.
 - a. Where trees are indicated to be left standing, stop topsoil stripping a sufficient distance to prevent damage to main root system.
2. Stockpile topsoil in storage piles in areas shown, or where directed. Construct storage piles to freely drain surface water. Cover storage piles if required to prevent wind-blown dust.
3. Remove soft or spongy material at the exposed sub-grade of cut and fill areas and replace with approved material and compact.
4. Use all suitable excavated material, as far as practicable, in the formation of controlled fills and fill slopes.
5. Keep all excavations dry by pumping or draining water from the Work.
6. In cut areas where fill is not required proof roll the areas with a loaded tandem axle dump truck or similar equipment to aid in identifying soft areas. Remove soft soils and replace with controlled fill. Scarify exposed sub-grade soils to a depth of at least 8 inches, adjust the soil mixture, and recompact to the same density as required for each layer of controlled fill.
7. Grade excavated slopes to a neat, smooth condition with no loose material or scars left on the surface.
8. Dispose of debris, excess topsoil, excess fill material and unsuitable material at an off site location secured by the contractor.

3.04 CONTROLLED FILL

- A. After excavation and before fill placement, proof roll fill areas with a loaded tandem axle dump truck or similar equipment to aid in identifying soft areas. Remove soft areas and replace with controlled fill.
- B. Scarify cleared surface in fill areas to a depth of at least 8 inches, adjust the soil mixture, and recompact to the same density as required for each layer of controlled fill.
- C. Place fill material in lifts no greater than 8-inch loose-lift uniform thickness and compact to 95% MAX Dry Density as determined by the Modified Proctor Test, ASTM D1557.
 1. Aerate material when too wet by manipulation with suitable equipment before compacting.
 2. Add water when soil is too dry and mix with the material before compacting.
- D. Complete excavation and controlled fill elevations to match finish grade, less the depth of topsoil specified for sodded and seeded areas in the landscape plan.

3.05 FIELD QUALITY CONTROL

- A. Field density tests will be performed per ASTM D6938.
- B. Frequency of Tests:
 1. Tests shall be made every day fill is being placed and representative lifts tested.
 2. At least one test per 2,500 sq. ft. under buildings and structural areas.
 3. At least one test per 5,000 sq. ft. under paved areas.
 4. At least one test per 10,000 sq. ft. in general areas.
 5. Contractor to notify engineer when fill work is in progress.

6. Test locations will be selected at random by engineer with an effort made to select areas of questionable compaction.
7. Retesting required because of nonconformance to specified requirements shall be performed by the same agency on instruction from the engineer.
8. Retesting required because of nonconformance to specified requirements shall be paid for by the contractor. Payment for retesting or re-inspection will be charged to the contractor by deducting testing charges from the contact sum/price.

END OF SECTION

**SECTION 31 2100
SITE PREPARATION**

PART 1 GENERAL

1.01 SUMMARY

- A. This Section includes the following:
 - 1. Utilities.
 - 2. Existing Improvements.
 - 3. Protection of Existing Trees.
 - 4. Clearing and Grubbing
 - 5. Disposal of Waste Materials
 - 6. Maintenance of Traffic

1.02 RELATED SECTIONS

- A. ALL SECTIONS

1.03 GENERAL

- A. The Contractor shall clear a construction right-of-way as narrow as possible and avoid unnecessary removal or damage to the trees, shrubs, and other landscaping.
- B. The Contractor shall not remove or disturb any vegetation except that required for the execution of the work, or as shown in the plans. The Contractor shall limit all his operations to the areas of the permanent and temporary easements; therefore, any/all damage to vegetation done by the Contractor outside these areas shall be repaired at his own expense and to the satisfaction of the Owner and the affected property owner.
- C. Where the presence of livestock, pets or other conditions exist that require continuous confinement, the Contractor shall construct temporary fencing adequate to contain such livestock, etc.
- D. The area of construction shall be kept clean and well maintained with special emphasis given to the area of lawns and maintained grass areas. Construction debris, paper, trash, and other items shall be picked up at the end of each day's construction work. Restoration work shall be done each day as the applicable sewer main work is completed to the extent that driveways, access roads, etc. are usable. Whether temporary or permanent, the daily restoration work shall be approved by the Owner.

1.04 PROJECT CONDITIONS:

- A. Authority for performing removal and alteration work on property adjoining permanent or temporary construction easements, or properties to which the Owner has no legal rights, will be obtained by Contractor prior to beginning work.

1.05 EXISTING SERVICES

- A. Indicated locations are approximate; determine exact locations before beginning work.
- B. Arrange and pay for disconnecting, removing, capping, and plugging utility services. Notify affected utility companies in advance and obtain approval before starting this Work.
- C. Place markers to indicate location of disconnected services. Identify service lines and capping locations on Project Record Documents.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.01 GENERAL

- A. Before beginning clearing and grubbing operations, call the Arkansas One-Call system at 1-800-482-8998 and/or the utility owner (if not a member of the One-Call service). Allow at least two working days advance notification.

3.02 MAINTENANCE OF TRAFFIC

- A. This item shall include the erection of signs, barricades, temporary markings, and the maintenance of, or noninterference with traffic in accordance with an approved Plan submitted by the Contractor. This item shall also include the temporary relocation of traffic and street signs, the maintenance of the temporarily relocated signs through the construction of the project, and the permanent relocation of any sign relocated due to construction signage after the construction is complete.

SUBMITTALS

- a. The Contractor shall submit for approval a traffic maintenance plan to the Owners Representative prior to any work. This plan must contain the methods proposed by the Contractor to maintain safety for both construction personnel and the traveling public.
- b. Once approved, the Contractor shall supply the Fire Chief and the Police Chief one (1) copy each for their files. Two (2) copies shall be supplied to the Owners Representative.

PRODUCTS & MATERIALS

- a. All materials must be in accordance with the latest version of the MUTCD.

EXECUTION

- a. The Contractor shall implement and maintain all maintenance of traffic devices as shown in his approved Plan. The Contractor shall submit his own Plan to the Owner and Engineer for review and approval.
- b. The Contractor shall initiate and maintain all necessary labor and materials necessary to construct the project in a manner which will guarantee public safety with a minimum of inconvenience. Additional work shall be performed by the Contractor during construction as directed by the Owner or Engineer if necessary to insure the above standards.
- c. The Contractor shall designate a traffic control supervisor to furnish continuous surveillance over traffic control operations. This supervisor shall be available at night and weekends to respond to calls involving traffic control. The name of the traffic control supervisor shall be provided at the preconstruction conference and to local police.
- d. The Contractor's personnel who are used to maintain traffic flow, such as flagmen or any other person who verbally communicates with or gives directions to the motorized public, shall speak English fluently.
- e. If the Owner or the Engineer determines that provisions for safe traffic control are not being provided or maintained, the work will be suspended. In cases of serious or willful disregard for safety of the public or construction workers, the Owner will place the traffic control devices in proper condition and deduct the costs from monies due the Contractor.

3.03 UTILITIES

- A. The location and/or elevation of existing utilities as shown on the Drawings is based on documents provided by others. The information is not to be relied on as being exact or complete. Call the Arkansas One-Call system at 1-800-482-8998 and/or the utility owner (if not

- a member of the One-Call service), at least two working days before any excavation to request exact field location of utilities.
- B. Protect utilities encountered during excavation.
 - C. All existing water or sewer services are to remain active until the new lines are put into service. If an existing service line interferes with the installation of a new water or sewer line such that the planned grade and alignment of the new line cannot be met, as determined by the Owner, the Contractor shall provide a temporary service line for the continuation of service. At the beginning of this project, in advance of any construction, the Contractor shall coordinate with the Owner and the Engineer to establish routes of temporary service lines. Connection of the temporary service lines to existing lines shall also be coordinated such that shutdown time of the existing service will be minimal.
 - D. All temporary service lines, fittings, and appurtenances shall be constructed of materials approved by the Owner and shall be of sufficient length and location to permit installation of the new service line. Temporary lines may be routed through existing driveway culverts if approved by the Owner. All temporary service lines shall be maintained in safe and operational condition until the new service line enters service. All other aspects of materials and construction of temporary service lines, including cutting, plugging and blocking the existing lines, shall conform to the plans and specifications pertaining to the permanent service lines for this project.
 - E. After the new service line enters service, all piping materials and valves, fittings, etc. used for temporary service lines shall be removed and shall remain the property of the Contractor. All open trenches shall be properly backfilled and compacted as approved by the Engineer.
 - F. If utilities are damaged or utility service is interrupted by work under this section, the utility owner has the first right to repair. If public health or safety is at risk, Contractor shall take appropriate, prudent action to repair damage and service interruption. Costs of utility protection and repair shall be borne by the Contractor.
 - G. If existing utilities are found to interfere with the permanent facility being constructed, notify the Engineer for instructions.
 - H. Do not proceed with permanent relocation of utilities without written instructions from the Engineer.

3.04 PROTECTION OF EXISTING TREES

- A. Trees, shrubs, or other items located in or adjacent to maintained yards shall not be removed or damaged by the Contractor without specific authorization from the Owner for each item. The Contractor shall remove from the area and properly dispose of all trees, stumps, limbs, piles of excess excavation, or any other items removed so as to allow construction.
- B. Protect trees designated to remain.
- C. Erect suitable barrier around trees, as approved by Engineer.
- D. Do not allow heavy pedestrian or any vehicular traffic over root zone of trees to be saved.
- E. Do not place construction materials or stockpiles within the tree drip line.
- F. Water trees and other vegetation indicated to remain, or as directed by Engineer, as required to maintain their health during course of construction operations.
- G. Provide protection for roots over 1-1/2 inch in diameter that are cut during construction operations. Coat cut faces with emulsified asphalt or other acceptable coating formulated to use on damaged plant tissues. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.
- H. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations in a manner acceptable to the Engineer. Employ a licensed arborist to repair damage to trees and shrubs.
- I. Replace trees that cannot be repaired and restored to full-growth status, as determined by Owner's Landscape Administrator.

3.05 CLEARING AND GRUBBING

- A. After tree protection barricades are installed, remove all trees, shrubs, grass, or other vegetation, improvements, and obstructions that interfere with new construction unless otherwise indicated on the drawings.
- B. Completely remove stump, roots, and other debris protruding through ground surface.
- C. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.
- D. Use only hand methods for grubbing inside drip line of trees indicated to remain.
- E. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.
- F. Place fill material in horizontal layers not exceeding 6 inches loose depth, and thoroughly compact each layer to a density equal to adjacent original ground.
- G. Removal of Improvements: Remove existing above-grade and below-grade improvements as indicated and as necessary to facilitate new construction.

3.06 DISPOSAL OF WASTE MATERIALS

- A. Burning of material shall only be done when allowed by local authorities.
- B. When allowed, the burning shall be done in accordance with all applicable local, state, and federal regulations.
- C. When perishable material is burned, it shall be under the constant care of a competent watcher.
- D. Burning shall be accomplished at such times and in such manner that the surrounding vegetation, adjacent property, or anything designated to remain on the project site will not be jeopardized.
- E. Contractor shall cease all burning operations when Federal, State, or local government agencies declare that meteorological conditions are unsuitable for burning. Contractor may resume burning operations when conditions are again suitable for burning.
- F. Unless allowed otherwise by regulatory authorities, materials to be burned shall be placed in an incineration pit and an acceptable forced air device shall be used to minimize the emission of smoke, fly ash, or other pollutants. This device shall be constructed so that the forced air is directed over the fire by the use of plenums or ducts. Open fans or mulch blowers are not acceptable and will not be allowed for burning operations.
- G. Contractor shall comply with all Federal, State, County, and local laws, regulations, or ordinances applicable to the disposal of clearing and grubbing material. Under no circumstances will the airborne emission of live sparks or burning debris be allowed from the burning operations.
- H. Materials and debris that cannot be burned shall be removed from the construction limits and disposed of offsite in an approved repository. Any extra costs incurred by Contractor in obtaining disposal sites, hauling, and final cleanup will be at Contractor's expense.

END OF SECTION

SECTION 31 2216
FINE GRADING

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Stripping and stockpiling surface layer of topsoil and organic matter in all cut and fill areas.
- B. Excavating and grading open drainage ditches.
- C. Placing and compacting excavated material or borrow material to required density and at required subgrade and slope for roadway embankment and other compacted fills.
- D. Removing and disposing of excess excavated material.

1.02 RELATED WORK

- A. Section 31 2000 – Earth Moving.
- B. Section 33 0516 – Manholes and Structure.

1.03 SUBMITTALS

- A. See Related Work

1.04 SITE CONDITIONS

- A. Establish positive surface drainage during and following stripping, embankment construction, and roadway grading by proper ditching or slopping.
- B. Provide measures to prevent mud and silt from flowing onto adjacent property.
- C. Erect sheeting, shoring, and branching as necessary for protection of persons, improvements, and excavations.

PART 2 PRODUCTS

2.01 SUITABLE MATERIAL FOR COMPACTED EMBANKMENT

- A. On site excavated soils:
 - 1. Unified Soils Classification Systems Soils.
 - a. Class SC
 - b. Class GC
 - c. Class CL
 - 2. Soils having Liquid Limit of less than 45, Plasticity Index (PI) of 20 or less.
 - 3. Other soils approved by the Engineer.
- B. Borrow Material:
 - 1. Soils meeting the requirements of sub-paragraph A.1 of this Article.
- C. Material meeting the requirements of selected material as described in Section 210 of the Arkansas State Highway Department's Standards Specifications for Highway Construction, Edition of 2014.

2.02 UNSUITABLE MATERIAL FOR COMPACTED EMBANKMENT

- A. All areas: Organic topsoil's, soils containing roots, vegetable matter, or trash, and cobbles and fractured rock more than 3 inches in greatest dimension.

PART 3 EXECUTION

3.01 PREPARATION

- A. Remove visible unsuitable materials from the site before beginning stripping and site grading operation.
- B. Notify Architect/Engineer when work is ready to be staked.

- C. Notify the geotechnical engineer representing the Owner's selected testing laboratory at least 48 hours before planned time to begin placing embankment material.

3.02 EXCAVATION PROCEDURES

A. Excavation, General:

1. Strip topsoil in cut and fill areas to whatever depths encountered in a manner to prevent intermingling with underlying subsoil or other objectionable material. Remove and dispose of heavy growth of grass and surface debris from areas prior to stripping topsoil.
2. Where trees are indicated to be left standing, stop topsoil stripping a sufficient distance to prevent damage to main root system.
3. Stockpile topsoil in storage piles in areas shown, or where directed. Construct storage piles to freely drain surface water. Cover storage piles if required to prevent wind-blown dust.
4. Remove soft or spongy material at the exposed sub-grade of cut and fill areas and replace with approved material and compact.
5. Use all suitable excavated material, as far as practicable, in the formation of controlled fills and fill slopes.
6. Keep all excavations dry by pumping or draining water from the work site.
7. Grade excavated slopes to a neat, smooth condition with no loose material or scars left on the surface.
8. Protect existing asphalt paving and structures designed to remain from drainage by excavation and grading operations.
9. Dispose of debris, excess topsoil, excess fill material and unsuitable material at an off-site location secured by the contractor.

B. Excavation, roadway:

1. Excavate and grade to within ± 0.1 foot of required subgrade elevations.
2. Grade back slopes to the slope shown on the Drawings.
3. Remove soft or spongy material at the exposed subgrade of cut and fill areas and replace with select material and compact to the same density as required for compacted fill. Identify soft areas by proof rolling with a loaded tandem axle dump truck or similar equipment.
4. DO not allow subsoil in roadbed area to become saturated. Maintain positive surface drainage during and following excavation, grading, and filling operations.
5. Where compacted fill is required, scarify stripped surface to a depth of at least 8 inches, adjust the soil moisture, and recompact to the same density as required for each layer of compacted fill.

3.03 COMPACTED EMBANKMENT

- A. Start embankment full width of bottom of embankment cross-section and construct to specified grade over full width in uniform layers.
- B. Place fill material in lifts no greater than 8 inch loose-lift uniform thickness and compact to a minimum of 95% of maximum dry density at or near optimum moisture content as determined by the Modified Compaction Procedures, ASTM D1557.
 1. Add Water when soil is too dry and mix the material before compacting.
 2. Aerate material when too wet by manipulation with suitable equipment before compacting.
- C. Do not place next lift until the in-place density and moisture content of the preceding lift has been verified.
- D. Geotechnical engineer will inspect and test soil for suitability for use in embankment and for need to perform additional "Proctors" as soil composition changes during progress of excavation. Do not compact layer of soil that geotechnical engineer has determined to be a

“change in soil composition” until it has been determined to be suitable and a “Proctor” has been run.

- E. Coordinate with the geotechnical engineer and provide the necessary assistance to perform the tests. Initial soil testing costs shall be paid for as outlined in the testing specification of the front-end documents. Should the tests be unsatisfactory, the Contractor shall be responsible for obtaining and paying for additional tests, which will be performed by an independent laboratory approved by Owner and Engineer.
- F. Maintain stability of compacted embankment. Replace or repair portions which have eroded due to elements or to Contractor negligence.
- G. Grade for slopes and other embankment areas not to be paved, to neat, smooth conditions with no loose material or scars left on surface. Fill and grade slopes to within three inches of finish grade elevations to allow for topsoil, sod and other landscaping.

3.04 PROTECTION

- A. As soon as embankment is completed, proceed with riprap work and notify architect/Engineer that slopes are ready for erosion protection by landscaping contractor.

END OF SECTION

**SECTION 31 2316
EXCAVATION**

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Excavating rock encountered during trenching for utility lines and excavating for manholes by mechanical methods. Blasting is not allowed.
- B. Disposing of excavated rock material.

1.02 RELATED WORK

- A. Section 33 1100 – Water Utility Distribution Piping.
- B. Section 33 3100 – Sanitary Utility Sewerage Piping.
- C. Section 33 3900 - Sanitary Utility Sewerage Structures.
- D. Section 33 0516 – Manholes and Structures.

1.03 SUBMITTALS

- A. See Related Work

PART 2 PRODUCTS

2.01 MATERIALS

- A. Definition of rock: All solid rock formation that, in the opinion of the Engineer, cannot be excavated by using power shovels or other power excavators which are of recognized manufacture and design, of adequate size and operated by qualified operators without continuous and systematic blasting, barring or wedging. It shall include boulders or pieces of detached rock exceeding one cubic yard in volume and solid rock formations which are interspersed with strata of clay or other material provided however that the solid rock constitutes at least 75% of the total volume of the particular formation. The conventional heavy-duty excavating equipment may be defined as a Caterpillar D-6 bulldozer with single tooth ripper, a Caterpillar 325 track excavator equipped with a single tooth ripper and rock teeth, or equipment of similar power and capability. Rock excavation volumes should be determined based on in-place measurements via cross sectioning. If excavation is to be unclassified, the contractor must be responsible for assessing rock excavation requirements.

PART 3 EXECUTION

3.01 INSPECTION

- A. Verify site conditions and note irregularities affecting work of this section.
- B. Beginning work of this section means acceptance of existing condition.

3.02 ROCK EXCAVATION – GENERAL

- A. Excavate rock encountered in excavating for manholes and trenching for water and sewer lines.
- B. De-watering: Provide temporary adequate de-watering equipment to keep excavations free of standing water during rock excavation.

3.03 ROCK EXCAVATION – MECHANICAL METHOD

- A. Excavate for and remove rock by the mechanical method.
- B. Cut away rock at excavation bottom to form level bearing.
- C. Remove shaled layers to provide sound and unshattered base for subgrade levels.
- D. Remove Excavated Material from Site.

END OF SECTION

SECTION 31 2500
EROSION AND SEDIMENTATION CONTROLS

PART 1 GENERAL

1.01 WORK INCLUDED

- A. This work shall consist of temporary erosion control measures needed to control erosion and water pollution, through the use of berms, sediments basins, sediments dams, silt fences, silt dikes, and temporary seeding.
- B. Temporary erosion control measures shall be performed promptly when problems occur or when potential problems are anticipated in certain areas in order to minimize soil erosion. The temporary erosion control measures shall be properly maintained until permanent erosion control features are functioning properly.
- C. The Contractor shall comply with all Federal, State, and Local laws and regulations controlling pollutions of the environments. The Contractor shall take necessary precautions to prevent pollution of streams, lakes, ponds and reservoirs with fuel, oils, bitumens, chemicals, soil sedimentation or other harmful materials and to prevent pollution of the atmosphere from particulate gaseous matter.

1.02 RELATED WORK

- A. Section 31 1100 –Clearing and Grubbing
- B. Section 31 2000 – Earth Moving

1.03 SUBMITTALS

- A. See Related work.

1.04 QUALITY ASSURANCE

- A. Prior to start of the construction, the Contractor shall submit, to the Owner and Engineer, his schedule for temporary and permanent erosion control work based on the Engineer's erosion control base plan, as is applicable for clearing & grubbing, grading and trenching. The location of the project, type of soil, topography and proximity to watercourses shall be considered when imposing such limitations.

PART 2 PRODUCTS

2.01 FILTER FABRIC

- A. The filter fabric for silt fence shall be as indicated on the drawings.

PART 3 EXECUTION

3.01 PERMITTING

- A. The Contractor shall file the Notice of intent to discharge storm water associated with the planned construction activity in accordance with the State of Arkansas NPSES General Permit ARR10A000 48 hours before starting construction. The Contractor shall develop a Storm Water Pollution Prevention Plan (SWPPP) document for submittal to ADEQ.
- B. The Contractor shall be responsible for preparing all required permit applications and payment of all permitting fees as may be necessary for this project.

3.02 EROSION CONTROL

- A. The Contractor shall schedule and conduct his operations in such a manner as to insure good erosion control practices so as to minimize soil erosion and prevent the contamination of and depositing of sediment in adjacent streams or other water courses, lakes, ponds, and other areas of water impoundment. Temporary erosion control measures which will contribute to the control of erosion and sedimentation shall be carried out in conjunction with clearing & grubbing, grading, and trenching operations.
- B. Permanent erosion control devices or measures shall consist of culvert pipe, terraces, gutters, bituminous curb, sectional drains, permanent slope drains, and the establishment

of permanent vegetation (seeding), and when included in the contract they shall be incorporated in the construction with the least delay. Trenched areas shall be seeded as the excavation proceeds to the extent considered necessary by the Engineer as desirable or practicable.

- C. The Contractor shall also conform to the following practices and controls:
1. When the material is trenched, erosion of the slopes shall be controlled both during and after completion of the work, that erosion will be minimized, and sediment will not enter streams, wetlands or other bodies of water. Haul roads shall be located and constructed in a manner that will keep sediment from entering streams.
 2. Pollutants such as fuels, lubricants, bitumens, raw sewage and other harmful materials shall not be discharged into or near rivers, streams or impoundments or into natural or manmade channels leading thereto. Wash water or waste from concrete mixing operation shall not be allowed to enter live streams.
 3. All applicable regulations of agencies and statutes relating to the prevention and abatement of pollution shall be complied within the performance of the contract.
 4. Dust Control:
 - a. Implement dust control methods to control dust creation and movement on construction sites and roads and to prevent airborne sediment from reaching receiving streams or storm water conveyance systems, to reduce on-site and off-site damage, to prevent health hazards, and improve traffic safety.
 - b. Control blowing dust by using one or more of the following methods:
 1. Mulches bound with chemical binders.
 2. Temporary vegetative cover.
 3. Spray-on adhesives on mineral soils when not used by traffic.
 4. Tillage to roughen surface and bring clods to surface.
 5. Irrigation by water sprinkling.
 6. Barriers using solid board fences, snow fences, burlap fences, crate walls, bales of hay, or similar material.
 - c. Implement dust control methods immediately when dust is observed blowing on Site.
- D. All temporary erosion and sediment control structures shall be constructed in accordance with the Storm Water Pollution Prevention Plan. All temporary structures shall be maintained in proper operating condition during the construction period. The temporary structures shall be removed, and the site cleaned up only after the end of the construction activity and the seeding and fertilizing operation has been completed and the grass has been established.
- E. The contractor shall follow the general guidelines for placement of erosion and sediment control as indicated on the Erosion Control Plan as part of his SWPPP. The Contractor shall add any required additional erosion and/or sediment control devices as necessary to control erosion and sediment on the project site. The contractor shall use the Engineer's erosion control plan to comply with the SWPPP and it shall include as a minimum the following items:
1. Time scheduling for the various phases of the work designed to limit the time between the clearing and the temporary seeding and fertilizing to a reasonable period of time.
 2. Temporary erosion control measures shall be included in the plan in accordance with the temporary erosion control details as included on the Erosion Control Plan.

3. A time schedule shall be included in the plan detailing when each erosion control structure shown on the plans is to be constructed. Each structure should be constructed as soon as practical after access to the site has been achieved and prior to major grading operations.
4. Temporary erosion control structures shall be maintained to function satisfactorily and all sediment and debris removed and disposed of in a manner acceptable to the Engineer.

3.03 INSPECTION

- A. The Contractor shall appoint a qualified person(s) to conduct regularly scheduled inspections during his contract. Inspections shall be conducted, with a minimum frequency of every seven (7) calendar days or within 24 hours following the end of at least a 0.5-inch (1/2 inch) rainfall event, whichever is earliest. During the inspection, the following areas (as a minimum) will be inspected:
 1. Disturbed Areas – All areas of disturbed soil i.e., bare soil with no ground cover shall be inspected for signs of washing and erosion.
 2. Material Storage Area – All central storage areas where materials/chemicals are stored for signs of spill, leaks and possible contamination.
 3. Erosion and Sediment Control Measures – Inspect all erosion and sediment control measures for signs of wear, damage, remaining capacity level, usefulness, etc.
 4. Discharge Locations – Immediately following, and possibly during a significant rainfall event, inspect all discharge locations to ascertain the effectiveness of the control measures.
 5. Entrance/Exit Locations – Inspect all exit points from the site for evidence of vehicle tracking.
- B. The inspector shall complete an inspection form for each inspection performed. As a minimum, the inspection form shall contain the following information:
 1. Name and location of project.
 2. Name and title of the inspector.
 3. Date and time of the inspection.
 4. Condition of each of the above locations.

3.04 MAINTENANCE OF ROADWAYS

- A. The existing paved roadways adjacent to the permitted entrance locations shall be maintained in a clean and passable condition by the Contractor. When required or as requested by the Owner or the Engineer, the Contractor shall broom or wash the existing paved roadways to remove excess mud or dirt at the intersection and for a reasonable length of the existing roadway beyond the intersection. The work shall not be paid for directly but shall be considered incidental to the other items of work and the cost included as a part of the work.

3.05 PAYMENT

- A. Payment for the work in this section shall be included as part of the lump sum contract.

END OF SECTION

SECTION 31 4000
SHEETING AND SHORED EXCAVATIONS

PART 1 GENERAL

1.01 SUMMARY

- A. Work under this Section consists of furnishing, placing, maintaining and subsequently removing, to the extent required, a positive system of temporary supports for cut and cover, open cut, and trench excavations, including bracing, dewatering, and associated items to support the sides and ends of the excavations. The support system shall prevent lateral and vertical ground movements which will cause damage to buildings, structures, pavements, utilities, and any other adjacent improvements.
- B. The excavations for the structures shall be made vertical and shored according to this Section. The Contractor shall construct sheeting and shoring to construct all structures and protect all existing structures, improvements, aboveground utilities, and below-ground utilities.
- C. Contractor shall make his own assessment of existing conditions including adjacent property, the possible effects of his proposed temporary works and construction methods, and shall select and design such support systems, methods, and details as will assure safety to the public, adjacent property, and the completed Work.
- D. The positive system of support may consist of soldier piles and lagging, sheet piling, or other methods as may be approved by Engineer; secured in place by means of bracing members which may include wales, struts, tieback anchors, or similar members. A trench box is not considered a positive means of support and will not be permitted.
- E. Utility modification or relocation shall be performed by Contractor at no additional cost to Owner or Engineer, if existing utilities interfere with Contractor's proposed method of support.
- F. Related Work Specified Elsewhere:
 - EarthworkSection 31 2000
 - Trench Excavation and BackfillSection 31 2316

1.02 QUALITY ASSURANCE

- A. Reference Standards and Specifications:
 - 1. American Society for Testing and Materials (ASTM):
 - ASTM A36/A36M - Carbon Structural Steel.
 - ASTM A328/A328M - Steel Sheet Piling.
 - 2. American Welding Society (AWS): D1.1 - Structural Welding Code, Steel.
 - 3. American Institute of Steel Construction (AISC): Manual of Steel Construction.

1.03 SUBMITTALS AND CONSTRUCTION RECORDS

- A. Submittals:
 - 1. Submit as specified in Section 1330.
 - 2. Preliminary Shoring Report:
 - a. A Preliminary Shoring Report outlining the entire scope of the Contract shoring to the specified requirements shall be prepared by or under supervision of Contractor's shoring engineer. The Preliminary Shoring Report shall be submitted for Owner and Engineer review in accordance with Section 1330 prior to the commencement of any shoring work.
 - 3. Working Drawings:

- a. Working drawings, by a licensed professional engineer, shall be submitted for Owner and Engineer review in accordance with Section 1330 prior to the commencement of work on each individual item of shoring.
 - b. The following shall be included on the working drawings:
 - 1. Details, arrangement, and method of assembly of the proposed system.
 - 2. The method of bracing and preloading.
 - 3. The full excavation depth.
 - 4. Loads for various stages of bracing removal during concrete placement and backfilling.
 - 5. The anticipated lateral earth pressure, hydrostatic pressure, utility, rail, traffic, and equipment loads.
 - 6. The maximum design load to be carried by the various members of the support system and a tabulation of the required preloads.
 - 7. The depth to which the support system will be installed.
 - 8. The proposed sequence of strut and shore removal as applicable and as related to concrete placement and backfilling operations.
 - 9. Proposed monitoring plan, including location of monitoring points, inclinometers, and seismographs.
 - c. Complete design calculations and the maximum theoretical deflections of the support members shall be included.
 - d. Existing utility facilities shall be included and, after checking their locations by field investigations, the working drawings shall be revised to show the actual locations of facilities, location of excavation supports, interference with the proposed Work, and how Contractor proposes to overcome these interferences.
 - e. Documents provided with evidence of an Arizona State registered Professional Engineer's seal, signature, and date.
 - f. Welder certificates signed by Contractor certifying that welders comply with requirements under "Quality Assurance" Article.
 - g. Qualifications of vibration monitoring firm.
- B. Construction Records:
- 1. The summary of monitoring data prepared by Contractor's shoring engineer shall be submitted for Owner and Engineer review on a weekly basis.
 - 2. Results of pre-excavation survey prior to any excavation.

1.04 QUALIFICATIONS

- A. Contractor and his subcontracted shoring engineer shall furnish evidence of having successfully completed one project that meets the following criteria:
 - 1. Equal or larger total linear footage of sheeting or shoring for one project of similar scope and conditions.
 - 2. Complete within the specified contract time.

1.05 DEWATERING

- A. Dewatering plan shall be based on the criteria specified in Section

1.06 PROTECTION

- A. Shoring and Shoring: Provide shoring, sheeting, and bracing as indicated or required. Meet the following requirements:

1. Prevent undermining of pavements and slabs. Remove and replace all undermined pavements, either concrete or asphalt, at Contractor's expense.
2. Excavations shall be accomplished with vertical banks wherever possible. All excavations shall remain within the property lines of the pump station as shown on the Drawings.
3. Except as otherwise specified herein, shoring and sheeting materials may be extracted and reused at Contractor's option; however, Contractor shall remove and replace any existing structure or utility damaged during shoring and sheeting. Where shoring and sheeting materials must be left in place in the completed Work to prevent settlements or damage to adjacent structures or as directed, backfill the excavation to 1 meter (3 feet) below the finished grade and remove the remaining exposed portion of the shoring before completing the backfill. If H-piles and wood lagging are used for shoring, remove wood lagging to within 1 meter (3 feet) of finished grade in incremental steps of approximately 150 mm (6 inches) as the backfill is constructed. The location of all shoring and sheeting left in place shall be documented on drawings and given to Engineer and Owner.

1.07 QUALITY ASSURANCE

A. Design Criteria:

1. The design and construction of the support system, and the adequacy thereof, shall be the responsibility of Contractor. Contractor's shoring engineer shall be a professional engineer, legally authorized to practice in the jurisdiction where the Project is located, experienced in the design of earth support systems, and required to visit the Site prior to development of any sheeting and shoring system designs in order to become familiar with existing Site conditions.
2. During installation and removal of the any shoring, Contractor's shoring engineer shall visit the Site to observe the Work and to verify the compatibility of the Work with design assumptions. Contractor's shoring engineer shall prepare a status report with each visit to the Site. This report shall be submitted to Engineer within three days of each Site visit. This status report shall contain certification that the Work is in concurrence with design assumptions. If deficiencies are observed, these must be noted and the corrective action outlined in the report. In the event that deficiencies are noted in Contractor's shoring engineer's report, Contractor's shoring engineer shall return to the Site within three days after the corrective action has begun to verify that the deficiencies are adequately being corrected. A corrective action status report shall be prepared by the Contractor's shoring engineer. The above outlined procedures shall be repeated until the corrective action status report confirms that all deficiencies have adequately been corrected.
3. Design the excavation support in accordance with the design criteria specified herein and in the Contract Documents. The criteria are intended for guidance and are the minimum acceptable.
4. Where applicable, the design and construction of the support system shall conform to the requirements of the AISC Manual of Steel Construction, unless otherwise stated.
5. Design the excavation support system and components to support lateral earth pressures, unrelieved hydrostatic pressures, utility loads, rail loads, traffic and construction loads, and building and other surcharge loads to allow the safe and expeditious construction of the permanent structures without movement or settlement of the ground, and to prevent damage to or movement of adjacent buildings, structures, utilities, and other improvements. The minimum lateral design earth pressure in all cases shall be determined by the Contractor's Shoring Engineer. All of the other above loadings shall be determined by Contractor's shoring engineer and added to the minimum design criteria. The design shall account for staged removal of bracing to suit the sequence of concrete placement for permanent structures and of backfill.

6. Design members to support the maximum loads that can occur during construction. For the purpose of this Section, the design load is the maximum load the support member will have to carry in actual practice, and the proof load is a specified test load greater than the design load.
7. Employ wales, struts, rakers, and tieback anchors for horizontal support for excavation faces retained by soldier piles and lagging, sheet piling, or other methods as may be approved by Engineer. Provide struts with intermediate vertical and horizontal supports if necessary to prevent buckling. Bracing members shall be structural steel. Tiebacks shall be high strength tendons or rods.
8. Take into account stresses due to temperature variations in the design of the struts. Make provisions to protect struts against deformations and stress variations induced by temperature fluctuations.
9. The splicing of an element of the support system will not be permitted.
10. Analyze elements supporting vertical loads and lateral pressures for combined axial load and bending.
11. Lateral loads due to soil and surcharges shall not be transmitted to the permanent structures, or portions thereof, until the concrete has reached sufficient strength to resist said loads, and then, not until the section to be loaded has been checked for strength and deflection and the method of load transmittal accepted by Engineer. The removal of struts shall not increase the design loading on the permanent structures.
12. In a bracing system where wales are not used and a direct strut to soldier pile connection is used, consider an additional provision for bending stress due to the eccentricity of lateral loading of 10% of the depth of the member in each direction in the design of the strut member.
13. Design compression member connections for their compressive loads and for a tensile and shearing load equal to 10% of the design compressive load unless tensile or shearing loads are greater.
14. Driven soldier piles may be assumed as fully braced against buckling in the plane of lagging. In the plane perpendicular to the lagging, the column length shall be taken as the distance between braced points.
15. Backfill soldier piles installed in predrilled holes with lean concrete and allow to set up prior to the start of excavation.
16. Vertical members of flexible wall systems may be designed under the assumption that they are hinged at the bottom of the pile supported excavation and at all bracing levels except the topmost level.
17. In order to satisfy a hinge condition at the bottom of excavation in soil, the vertical wall members shall have at least the minimum penetration necessary to develop the passive resistance of ground material in which piles are embedded, or cantilever action shall be assumed about the lowest installed brace.
18. The calculated deflection of any element of the support system shall not exceed 13 mm (1/2-inch) during excavation or brace removal.
19. Apply active pressure above the pile subgrade elevation to the full panel width between soldier pile centers and to the width of the soldier pile or encasement below pile subgrade. Passive pressure for calculation of embedment required shall be taken as acting on 1.5 times diameter for soldier piles circular in plan and 2.0 times width for soldier piles rectangular in plan.
20. To account for the concentration of soil pressures at struts and tieback locations, the bending moments taken from pressure diagrams (hydrostatic and surcharge pressures

excluded) may be reduced by 20 percent when calculating flexure requirements for vertical members and wales of flexible wall systems.

21. Where the loading conditions on opposite sides of an excavation are not equal, analyze the stability of the temporary retaining structure and design structural members so as to take this condition into account.
22. In design of vertical members and wales of flexible wall systems, basic allowable unit stresses may be increased 20%. Design bracing members and connections using basic allowable unit stresses.
23. For calculation of brace loads, vertical wall members may be assumed as several independent simple beams supported at brace levels and their continuity effects ignored. The sum of reactions at each support is used as the design brace load. The full loading on cantilevered portions shall be considered as acting directly upon the supporting brace level. An assumed strut shall be considered to exist at the bottom of the excavation when the minimum pile penetration below subgrade, or deeper, is satisfied. Where wales are a part of the support system, they shall be designed according to the principles of statics.

B. Tieback Analysis and Design:

1. Investigate loading and use the most critical case for design.
2. Make a check of the overall stability (sliding, rotational, etc.) of the zone forming the anchoring mass of earth. The width of resisting surface shall be taken not greater than the distance from the support wall back to the vertical plane passing through the end of the shortest anchor. For a rotational analysis using the slip circle method the design shall yield a factor of safety of at least 1.5, based on loading and the physical properties tabulated.
3. For purposes of determining the effective length of anchors, take the failure plane of the soil mass behind the wall at a minimum angle of 45 degrees measured from the vertical. Anchors shall be considered as receiving resistance from only the soil mass acting beyond the indicated failure plane. Consideration shall be given to increased extent of the failure zone due to high surcharge loads.
4. For loading combinations found, determine the allowable value of adhesion between the soil and the anchor for design of effective embedded length of each individual anchor in various strata. The effective length thus found shall be increased by at least 10% to make allowance for unforeseen field variables.
5. The angle between the direction of the anchor and the horizontal line perpendicular to the support of excavation wall shall be chosen by the Contractor within a range of 0 degrees to 30 degrees. Account shall be taken of the effects of resulting vertical components and associated structural implications arising there from, particularly regarding toe penetration requirements.
6. Install anchors in predrilled holes and pressure grout to ensure firm contact with the surrounding soil.
7. For drilled-in anchors, the total anchor load shall be developed in bond between steel and grout acting within effective length of the anchorage.
8. The final working stress shall not exceed 60% of the ultimate tensile strength of the steel nor 70% of its yield strength loads where high-strength tie rod steel is used.
9. For tieback anchors of high strength steel, a pretest load of at least 140% of working load shall be applied. The load shall then be relaxed to not less than 100% of the working load. Final pretest stress in the steel is not to exceed 80% of the ultimate strength nor the manufacturer's recommendations as shown in his catalog or otherwise stated by him in writing.
10. Spacing of the tiebacks shall ensure no overlap of resisting soil stress bulbs in assuming full value of anchorage for each tieback. In the event of overlap, then a reduction factor

shall be used for ties effected. In any one plane the anchors shall have a minimum clear distance between them of 1.5 meters (5 feet). Tiebacks having overlapping soil stress bulbs shall be pretested simultaneously.

11. Use good engineering practice, a knowledge of the local or regional subsurface conditions, available geotechnical or subsurface information, and studies performed by the Contractor to investigate the subsurface conditions at the Site in the analysis and design of tieback systems.
12. The value of overburden pressure, if used for adhesion calculations, shall not include surcharge loads.
13. Tiebacks shall not be placed closer than 3 meters (10 feet) to foundation structures of existing buildings.

C. Monitoring:

1. Pre-excavation Survey:

- a. Contractor shall document all existing damage to adjacent facilities and submit the information to the Owner prior to performing any excavation. Documentation shall include a written description, diagrams, measurements, and photographs as appropriate.
- b. Establish lines of monitoring points, perpendicular to the excavation face, for at least two sides of each excavation where monitoring is required. Space the lines of monitoring points no more than 6 meters (20 feet) apart, and a minimum of three lines shall be established for each excavation side to be monitored. Each monitoring line shall consist of a minimum of four monitoring points spaced no more than 3 meters (10 feet) apart. Locate the first monitoring point in each line at the top of the braced excavation. The monitoring lines shall extend from the excavation face to a distance equivalent to twice the total excavation depth. The base of each monitoring point monument shall extend to a depth of at least 1.5 meters (5 feet) below the ground surface. Establish surface monitoring points prior to beginning an excavation.
- c. Each survey reading shall consist of measuring the vertical and horizontal location of each monitoring point. Make the initial set of readings prior to the start of the excavation. Make each additional set of readings at each 1.5-meter (5foot) increment of vertical excavation depth, immediately before and immediately after internal bracing or tiebacks are installed. After the excavation has been completed, take readings at 7-day intervals thereafter and until movements have been determined by Contractor's shoring engineer to have ceased. If portions of the bracing system are removed at any time, make readings immediately prior to removal and immediately after removal.
- d. Contractor's shoring engineer shall reduce and review the monitoring data and submit a summary of the data to Engineer on a weekly basis. As a minimum, this summary shall include graphical plots of the monitoring data and Contractor's shoring engineer's interpretation thereof.

D. Work Site Conditions:

1. Provision for Contingencies:

- a. Monitor the performance of the components of the support system for both vertical and horizontal movement at regular intervals not to exceed three days.
- b. Provide a contingency plan or alternative procedure for implementation if unfavorable performance is evident.
- c. Keep the materials and equipment necessary to implement the contingency plan on hand.

2. Employ caution in the areas of utility facilities, which shall be exposed by hand or other excavation methods acceptable to Owner.
- E. Welding Standards:
1. Comply with applicable provisions of AWS D1.1.
 2. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved, and if pertinent, has undergone recertification.

PART 2 MATERIALS

2.01 STRUCTURAL STEEL: STEEL H-PILES, WF SHAPES, BRACING MEMBERS, FABRICATED CONNECTIONS, AND ALL OTHER ACCESSORIES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36.

2.02 STRUCTURAL STEEL SHEET PILES

- A. Steel sheet piling shall conform to the requirements of ASTM A328.
- B. Steel sheet piling and interlocks shall not have excessive kinks, camber, or twists that would prevent the pile from free sliding.

2.03 Reinforcing Steel: Shall conform to the requirements of Section 3200.

2.04 Field Welding: Shall be performed by certified welders and be in accordance with AWS D1.1.

2.05 Tiebacks: Shall be high strength steel tendons or rods encased in concrete grout. Use of helical screw anchors is strictly prohibited.

2.06 CONCRETE

- A. Lean grout shall be a mixture of Type V cement, sand, and fly ash in the proportions of one bag cement, 5 cubic feet fly ash, and sufficient aggregate and mix water to yield 27 cubic feet and shall be placed in such a manner as to present a firm, stable mass capable of retaining shape and position during excavation operations, yet allow relative ease in chipping out for placement of lagging.
- B. All other concrete shall conform to the requirements of Section 03300.

2.07 Timber Lagging: Shall be of a structural grade providing a minimum allowable working stress of 7.6 MPa (1,100 psi) where a system of timber lagging is to be used to support earth excavation.

2.08 Other Materials: Shall be of the size, shape and properties best fitted for their intended use.

2.09 Materials: Whether new or used, shall be sound and free of defects that might impair strength or function.

PART 3 EXECUTION

3.01 SOLDIER PILES INSTALLATION

- A. In the initial positioning of soldier piles at the ground surface, make allowances for installation deviations, and the probable inward movements of the support wall during excavation. Intrusion of wall members into the neat lines of the structures will not be permitted. Where sheeting systems are located contiguous to the neat lines of the structure, provide a reasonable percentage of the depth of excavation to subgrade for initial installation offset.
- B. Install soldier piles by preboring or other preexcavating methods to tip elevation shown on the approved working drawings.
- C. Case or fill the prebored holes with drill mud, as required, to prevent caving of the sides of the hole prior to placement of the soldier pile and encasement.
- D. Pile Embedment:
 - 1. Carry the bottom of the support system to a depth below the main excavation to provide sufficient lateral support to limit the maximum pile deflection to 13 mm (0.5-inch).
- E. After seating the soldier piles, encase the piles with lean grout, completely encasing the pile.
- F. Design of soldier piles shall conform to the criteria specified in PART 1 - QUALITY ASSURANCE, this Section.
- G. Vertical Support System with Tiebacks:
 - 1. Install piles or other vertical support system members incorporated in a system using tieback anchors so that vertical support members are capable of resisting vertical

components of tieback loads without significant settlement during excavation and construction.

2. Install the vertical support members so that settlements will not be caused by construction. In general, install the members to be end bearing in a stratum below the maximum depth of excavation and capable of carrying the total vertical loads without assistance of skin friction in the depth of the excavation.

3.02 LAGGING AND SHEETING INSTALLATION:

- A. Use timber lagging or contact sheeting, steel sheeting, or precast reinforced concrete members secured in place for sheeting of excavations.
- B. Install sheeting and lagging with no gap between the boards. Carefully perform excavation for the installation of sheeting and lagging to minimize or eliminate the formation of voids behind the lagging. As installation progresses, backfill voids between the excavation face and the lagging or sheeting with sand or soil compacted in place. Pack gaps in lagging with materials such as hay or burlap to allow drainage of groundwater without substantial loss of soil.
- C. If unstable material is encountered, take measures to retain the material in place or to otherwise prevent soil displacement.
- D. Sheeting and lagging placement shall follow the excavation. The maximum height of the unsheeted or unlagged face of excavation shall be determined by the job conditions, but in no case shall it exceed at anytime 1.2 meters (4 feet) in predominately clayey soils or 1 meter (3 feet) in sandy soils. If water flows from the face of the excavation, or soil in the face moves toward the excavated area, the maximum height of the unlagged face shall not exceed 375 mm (15 inches), or as directed by Resident Project Representative.
- E. Sheet piling not cut to length shall be cut off after driving at elevations as indicated, if applicable.
- F. Drive sheet piling by recognized methods of good practice in soil conditions present using a hammer with sufficient energy to penetrate overburden material without damaging the sheet piling or adjacent existing facilities. Avoid splicing of sheet piling when possible. Z-pile sections shall be driven with ball edge "ahead."
- G. Provide protection to sheet pile ends, as required, to ease driving, assure penetration and prevent tearing or splitting in hard driving conditions.
- H. In running sand or silt, provide a positive means of securing the lagging to the soldier piles to avoid shifting or falling off of the lagging. Also provide a positive means of securing the material behind the lagging or sheeting.
- I. A sufficient quantity of material shall be on hand at all times (for sheeting, shoring, bracing and other purposes) for the safe execution of the work and for use in case of accident or other emergency.
- J. Place wales, when used, on the inside face of the support wall. Make provisions to wedge, pack, shim, or otherwise assure tight bearing between wales and soldier piles, with ample bearing area to assure transfer of the load.
- K. Remove lean grout only to the extent that is required for installation of the lagging.

3.03 INTERNAL BRACING SUPPORT SYSTEMS INSTALLATION

- A. The internal bracing support system includes lagging and sheeting, soldier piles, wales, struts, and shores.
- B. Brace as soon as possible after reaching prescribed excavation levels.
- C. Provide struts with intermediate bracing if necessary, to enable them to carry the maximum design load without distortion or buckling.
- D. Provide diagonal bracing where needed to maintain the stability of the system.

- E. Include web stiffeners, plates, or angles to prevent rotation, crippling, or buckling of connections and points of bearing between structural steel members. Allow for eccentricities due to field fabrication and assembly.
- F. Install bracing support members and maintain in tight contact with each other and with the surface being supported. Install support system instrumentation if directed by Owner or Engineer.
- G. Coordinate excavation work with installation of bracing and preloading.
- H. Design primary support members to support the maximum loads occurring during the excavation or removal stages, and as required by design criteria specified under PART 1 - QUALITY ASSURANCE, this Section, and on the Contract Drawings.
- I. Preloading:
 - 1. Primary bracing members including struts, shores, and similar members shall be preloaded at installation. The amount of the preload shall be determined by Contractor's shoring engineer. Tiebacks shall be preloaded as specified for those installations.
 - 2. Use procedures that produce uniform loading of the bracing member without appreciable eccentricities, or overstressing and distortion of the members of the wall system.
 - 3. Make provisions for permanently fixing the required load in the member using steel shims or wedges welded into place.
 - 4. Wooden wedges shall not be used to preload a bracing member.
 - 5. The preloading system shall include a means to determine within 5% the amount of preload induced into the bracing members.
- J. Excavation shall not go deeper than 1 meter (3 feet) below the point of support about to be placed. Install the support and preload immediately after installation of bracing and prior to continuing excavation.

3.04 TIEBACK SUPPORT SYSTEMS INSTALLATION

- A. If Contractor elects to use a support system which includes tieback anchors, he shall submit full details of his proposed system to the Engineer for review prior to commencement of the work. The submittal shall be in accordance with instructions specified under PART 1 - SUBMITTALS, this Section. Design shall be in accordance with tieback criteria specified under PART 1 -QUALITY ASSURANCE, this Section.
- B. Install tieback systems in accordance with the working drawings. Install the anchorage in soil no closer than a plane extending upward at an angle of 45 degrees to the horizontal from the limit of the lowest depth of excavation.
- C. Stress all the tiebacks to proof loads equal to 120% of the maximum design load. Maintain the proof load for 30 minutes prior to reducing it to the design load. Anchors which lose more than 5% of the proof load during the 30-minute period will not be acceptable.
- D. During proof testing, load in increments of 4.5 metric tons (5 tons) at one-minute intervals providing means to measure the load application within an accuracy of plus or minus 5%. Record axial movement corresponding to incremental applications of load to an accuracy of 0.25 mm (0.01-inch).
- E. After reducing the tieback load to the design load, encase tiebacks in grout. Maintain the design load until the tiebacks are fixed in place.
- F. Use a method of fixation which will limit the load loss to no more than 5% of the design load in the transfer of the loads from the jacks to the support system.
- G. Provide and maintain convenient access and appropriate means so that these observations may be made.

- H. Grease and wrap drilled-in anchors or otherwise treat to ensure the absence of bond on the portion of the tieback between the face of wall and the anchorage.
- I. Performance Tests on Tiebacks:
 - 1. Conduct performance tests on at least three selected tiebacks prior to installing any of the remaining tiebacks, which will all be proof loaded. Test tiebacks at each level of support in the excavation. A minimum of 10% of the tiebacks installed shall be performance tested. All performance tests shall be measured with a load cell accurate to within 1% of the design load.
 - 2. Performance tests for tiebacks in cohesionless soils shall consist of the following cyclic loadings: 0 tons to 0.25 DL (Design Load); 0.25 DL to 2 tons; 2 tons to 0.50 DL; 0.50 DL to 2 tons; 2 tons to 0.75 DL; 0.75 DL to 2 tons; 2 tons to 1.0 DL; 1.0 DL to 2 tons; 2 tons to 1.2 DL; 1.2 DL to 2 tons; 2 tons to 1.33 DL. The load shall then be reduced to 100% of the design load and locked off. Record axial movement corresponding to incremental applications of 25% of the design load for each individual cycle of loading to an accuracy of 0.025 mm (0.001-inch).
 - 3. Performance tests for tiebacks in cohesive soils shall consist of the following cyclic loadings: 0 tons to 0.25 DL (Design Load); 0.25 DL to 1.8 m tons (2 tons); 1.8 m tons (2 tons) to 0.50 DL; 0.50 DL to 1.8 m tons (2 tons); 1.8 m tons (2 tons) to 0.75 DL; 0.75 DL to 1.8 m tons (2 tons); 1.8 m tons (2 tons) to 1.0 DL; 1.0 DL to 1.8 m tons (2 tons); 1.8 m tons (2 tons) to 1.2 DL; 1.2 DL to 1.8 m tons (2 tons); 1.8 m tons (2 tons) to 1.33 DL. The load shall then be reduced to 100% of the design load and maintained continuously for a minimum of 10 hours. Measure axial movements to an accuracy of 0.025 mm (0.001 inch) and record on 5-minute intervals for the first 100 minutes and 10-minute intervals thereafter.
 - 4. The data from all performance tests shall be interpreted by Contractor's shoring engineer. This interpretation will constitute an evaluation of anchor allowable load-carrying capacities and shall be used by Contractor's shoring engineer to set a criteria for allowable movement of the proof tests.

3.05 TRENCH EXCAVATION

- A. Perform sheeting, shoring, and bracing for trench excavation for utility facilities and other purposes in accordance with the safety requirements of the General Conditions.
- B. Provide sheeting, shoring, and bracing for trench excavation in the subgrade of the excavation to prevent movement of the main excavation support system.

PART 4 MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

- A. No measurement will be made for this item.

4.02 PAYMENT

- A. Sheeting and Shored Excavations
 - 1. Payment for Sheeting and Shored Excavations is included in the lump sum price for the appropriate precast concrete structure(s) included in this project.

END OF SECTION

**SECTION 32 1200
FLEXIBLE PAVEMENT**

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Prepare subgrade to receive base course.
- B. Provide compacted base course.
- C. Prime base course and place asphaltic concrete hot mix (ACHM) binder course.
- D. Tack base course and place ACHM surface course.

1.02 RELATED WORK

- A. Section 31 2000 – Earth Moving.
- B. Section 32 1613 – Concrete Curb and Gutter
- C. Section 33 4000 – Storm Drainage Utilities

1.03 SUBMITTALS

- A. See Related Work

1.04 REFERENCES

- A. Arkansas Department of Transportation (ARDOT).
 - 1. Standard Specifications for Highway Construction, Edition of 2014, hereafter referred to as “ARDOT Standard Specifications”.

PART 2 PRODUCTS

2.01 BASE COURSE MATERIALS

- A. Crushed Stone: Class 7, meeting the requirements of Section 303 of the ARDOT Standard Specifications, or approved equal.
- B. Prime Coat: Medium curing liquid asphalt, MC-30, or approved equal, meeting the requirements of Section 401 of the ARDOT Standard Specifications.
- C. Tack Coat: Shall be applied as specified and meeting the requirements of Section 401 of the ARDOT Standard Specifications.

2.02 ASPHALT PAVEMENT MATERIALS

- A. ACHM Surface Course:
 - 1. PG 64-22 mix as described in Sections 407 and 409 of the ARDOT Standard Specifications.
 - 2. The surface course shall be composed of a mixture of mineral aggregate and asphalt cement in the proportions by weight for the type mixture designated.
- B. ACHM Binder Course:
 - 1. PG 64-22 mix as described in Section 407 and 409 of the ARDOT Standard Specifications.
 - 2. The binder course shall be composed of mixture of mineral aggregate and asphalt cement in the proportions by weight for the type mixture designated.

PART 3 EXECUTION

3.01 SUBGRADE PREPARATION

- A. Ensure grading of the subgrade to the required elevation.
- B. Scarify to a depth of six inches the subgrade where the base course is to be placed.
- C. Water and thoroughly mix subgrade until optimum moisture content is obtained when deficiency of moisture content exists. When excess of moisture exists, rework and aerate subgrade until optimum moisture content is obtained.

- D. Re-compact the subgrade to a minimum of 95% of the maximum dry density at or near the optimum moisture content as determined by ASTM D1557.
- E. Before final rolling, shape the entire area to the required cross section, adding additional subsoil as required and compact the subgrade surface to the required density.

3.02 PLACEMENT OF BASE COURSE

- A. Place the crushed stone base material over the prepared subgrade in accordance with the construction methods described in Section 303 of the ARDOT Standard Specifications.
- B. Add water during compaction to bring the base course materials to optimum moisture content. When excess moisture exists, rework the base course materials until optimum moisture content is obtained.
- C. Compact the base course to 100% of the maximum dry density as determined by ASTM D 1557.

3.03 PLACE PRIME AND TACK COAT

- A. Apply the bituminous prime coat to the compacted base at the rate of 0.3 to 0.4 gallons per square yard. Apply the bituminous tack coat to the prepared base at the rate of 0.03 gallon to 0.10 gallon per square yard as designated by the Engineer.
- B. Clean the base course surface and place the prime and tack coats in accordance with the requirements of Section 401 of the ARDOT Standard Specifications.

3.04 PLACING ACHM SURFACE COURSE

- A. Construction Methods: Section 410, ARDOT Standard Specifications.
- B. Temperature range mix.
 - 1. When discharged from mixer: 285 degrees F to 325 degrees F.
 - 2. When placed on base course: 275 degrees F. to 325 degrees F.
- C. Temperature of air: Do not place ACHM when air temperature in the shade is below 40 degrees F.
- D. Place asphalt pavement to compacted depth shown on Drawing.
- E. Compact to required density, with approved rolling equipment. Start compaction as soon as pavement will bear equipment without checking or undue displacement.
- F. Required density: 92% - 96% of maximum theoretical density.
- G. Carry out compaction in three operations in pass sequence. Ensure each pass of roller overlaps previous passes to ensure smooth surface free of roller marks. Keep roller wheels sufficiently moist so as not to pick up material.
- H. Perform hand tamping in areas not accessible to rolling equipment.
- I. Ensure joints made during paving operations and at connection to existing pavement are straight, clean, vertical and free of broken or loose material. Construct joints to ensure a continuous bond between the courses and to obtain the required density. Provide all joints with the same texture as other sections of the course and meet the requirements for smoothness and grade.
- J. Ensure surface of completed asphalt pavement is true to lines, profiles and elevations indicated, and is free from depressions exceeding ¼ inch when measured with a 10 foot straightedge.
- K. Do not allow vehicular traffic on newly paved areas until surface has cooled to atmospheric temperature.

3.05 FIELD QUALITY CONTROL

- A. Testing laboratory will make in-place tests of density and moisture content of the subgrade and the base course in accordance with ASTM D 6938.
- B. Testing laboratory will make density tests of compacted asphalt paving in accordance with ASTM D 2950.

END OF SECTION

**SECTION 32 1313
CONCRETE PAVING**

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Prepare subgrade to receive base course materials for traffic bearing drive.
- B. Place and compact base course materials for drive.
- C. Concrete drive complete with reinforcement.

1.02 RELATED WORK

- A. Section 32 1373 – Concrete Paving Joint Sealants
- B. Section 31 2000 - Earth Moving
- C. Section 32 1376 - Sidewalks
- D. Section 32 1613 - Concrete Curb & Gutters

1.03 SUBMITTAL

- A. See Related Work

1.04 REFERENCES

- A. ASTM C150- Portland Cement.
- B. ASTM C94 – Ready Mixed Concrete.
- C. ASTM A185 – Welded Steel Wire Fabric for Concrete Reinforcement.
- D. ASTM A615 – Deformed and Plain Billet – Steel Bar for Concrete Reinforcement.
- E. ASTM D1751 – Preformed Expansion Joint Filler for concrete Paving and Structural construction.

1.05 INSPECTION AND TESTING

- A. Inspection and testing of concrete will be performed by a firm approved by the owner and paid for by the Contractor, in accordance with Section 01 4529.
- B. Three (3) concrete test cylinders will be taken during cold weather concreting, and be cured on job site under same conditions as concrete it represents.
- C. One (1) slump test will be taken for each set of test cylinders taken.

PART 2 PRODUCTS

2.01 FILL MATERIALS

- A. Gravel Base: Angular crushed natural stone: free shale, clay and friable materials and debris.

2.02 CONCRETE MATERIALS

- A. Portland Cement: ASTM C150; Normal –Type I. Materials for concrete paving shall conform to the requirements for Sections 32 0523–Concrete Work.
- B. Fine and Coarse Aggregates: ASTM C33.
- C. Water Clean and free from injurious amounts of oil, alkali, organic matter, or other deleterious material.

2.03 REINFORCEMENT

- A. Reinforcing Steel: (60) yield strength; plain and deformed billet steel bars: ASTM A615; plain finish.
- B. Welded Steel Wire Fabric: Plain type, ASTM, 6" x 6: W2.9x W2.9 size.
- C. Tie Wire: Minimum 16 gage annealed type, or patented system acceptable to Architect/Engineer.

2.04 FORMWORK AND ACCESSORIES

- A. Formwork: Matched, tight fitting and adequately stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of concrete.
- B. Joint Filler: Minimum ½-inch thick asphaltic impregnated fiberboard ASTM D1751.
- C. Concrete Curing Compound: Chlorinated rubber type: clear color; ASTM C309.

2.05 CONCRETE MIX

- A. Mix and proportion to produce minimum 3500 psi concrete at 28 days with maximum slump of 3 inches and 4 to 6 percent air entrainment.
- B. Use accelerating admixtures in cold weather only when acceptable to Architect/Engineer. Use of admixtures shall not relax cold weather placement requirements. Do not use calcium chloride.
- C. Use set-retarding admixtures during hot weather only when acceptable to Architect/Engineer.

PART 3 EXECUTION

3.01 PREPARATION OF SUBGRADE

- A. Ensure rough grading has brought subgrade to required elevations.
- B. Fill soft spots and hollows with additional fill.

3.02 PLACEMENT OF GRAVEL FILL AND SAND CUSHION

- A. Place and level gravel fill over prepared subgrade to a compacted depth indicated on drawings true to lines and levels.
- B. During concrete placement, keep base sufficiently moist to prevent excessive absorption of water from freshly placed concrete.

3.03 FORMING

- A. Form vertical surfaces to full depth and securely position to required lines and levels. Ensure form ties are not placed so as to pass through concrete.
- B. Arrange and assemble formwork to permit easy dismantling and stripping, and to prevent damage to concrete during formwork removal.

3.04 PLACING REINFORCEMENT

- A. Reinforce concrete drives: Allow for minimum 1 -1/2 inch concrete cover.
- B. Do not extend wire mesh reinforcing through expansion and contraction joints. Provide dowelled joints through expansion and contraction joints, with one end of dowels fitted with capping sleeve to allow free movement.

3.05 GENERAL

- A. Notify Architect/Engineer for inspection at least 24 hours before the planned time to pour concrete.
- B. Inspection:
 - 1. Ensure that excavation and formwork are completed and within the allowed tolerances.
 - 2. Ensure that ice and excess water are removed, no frost is present, and that ground is not frozen.
 - 3. Check that reinforcement is secured in place.
 - 4. Verify that insulation, anchors, and other embedded items are secured in position.
- C. Install concrete work in accordance with ACI 301-99 except as amended by this section.

3.06 FORMING EXPANSION AND CONTRACTION JOINTS

- A. Install control expansion joints in accordance with ACI 301-99 Section 5

- B. Place expansion and contraction joints shown on plans. Where joints are not illustrated, provide control joints for every 100 SF of surface area and expansion joints for every 400 SF of surface area. Where possible, make joints coincide with joints in adjacent concrete.
- C. Fit joints with filler of required profiles, set drives perpendicular to longitudinal axis of drives. Recess ¼ inch below finished concrete surface.

3.07 PLACING CONCRETE

- A. Place concrete, screed and wood float surfaces to a smooth and uniform finish, free of open texturing and exposed aggregate.
- B. Avoid working mortar to surface.
- C. Make ¼-inch wide dummy joints as indicated on Drawings.
- D. Round all edges, including edges of dummy and expansion and contraction joints, with ¼-inch radius edging tool.
- E. Where paved surfaces are adjacent to walks, make concrete curbs and gutters integral with walks. Make expansion and contraction joints of curbs coincide with walk joints. Provide dummy joint at line between walks and curbs.
- F. All drives, sidewalks, ramps, and stairs are to have a broom finish applied to the surfaces, unless otherwise noted.
- G. Ensure finished surfaces do not vary from true lines, levels or grade by more than 1/8 inch in 10 feet when measured with straightedge.
- H. Apply curing compound on finished surfaces immediately after placement. Apply in accordance with manufacturer's recommendations.
- I. All expansion joints must be sealed with an approved joint sealant.

END OF SECTION

**SECTION 32 1376
SIDEWALKS**

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Providing concrete sidewalk where shown on Drawings.
- B. Providing concrete handicap ramps where shown on Drawings.

1.02 RELATED WORK

- A. Section 31 2000 – Earth Moving.
- B. Section 32 0523 – Cement and Concrete for Exterior Improvements.
- C. Section 32 1373 – Concrete Paving Joint Sealants.

1.03 SUBMITTALS

- A. See Related Work

1.04 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM D 1751, Specifications for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).

PART 2 PRODUCTS

2.01 CONCRETE

- A. General: Materials for use in sidewalk construction shall conform to the requirements for Section 32 0523, and shall be 3500 psi concrete.

2.02 WORK INCLUDED

- A. The joint filler for all expansion joints shall be manufactured according to ASTM D 1751 and shall be elastic waterproof pre-molded compound that will not become soft and push out in hot weather, nor hard and brittle and chip out in cold weather. The strips shall be ½” in thickness except where shown otherwise on the Drawings; their width shall at least equal the full thickness of the slab; and their length shall at least equal the width of the slab at the joint.

2.03 FORMS

- A. Forms shall be steel or 2” nominal thickness lumber true to proper dimensions, smooth, sufficiently braced to resist springing out of shape, and accurately set to proper lines and grades. Used forms shall be free of dirt and mortar. Cross forms shall be ¼” steel of the full width and depth of the concrete work and left in place until the wearing surface has been floated and has obtained its initial set.

2.04 CURING COMPOUND

- A. Liquid membrane forming curing compound conforming to AASHTO M 148, Type 2, white pigmented (all-resin base).

2.05 SURFACE TREATMENT

- A. Scofield Repello FPS surface treatment for water and stain repellency to concrete surfaces.

PART 3 EXECUTION

3.01 GRADING AND SUBGRADING

- A. Prepare subgrade for walks by excavating or filling to a depth below the top of an intended pavement equal to the thickness of the finished walk and in exact conformity to the grade approved by the Engineer. Remove vegetative matter or material that will not compact properly and replace with suitable material. Place all fill required to bring the subgrade to the proper level in thin layers not exceeding 4 inches deep, and thoroughly ram, tamp or roll until it has been made compact and solid. Bring subgrade to true grade in a uniformly firm condition before

placing the concrete. Do not place concrete on the subgrade until the Engineer has inspected and approved both grade and condition of subgrade.

3.02 GENERAL

- A. Notify Architect/Engineer for inspection at least 24 hours before the planned time to pour concrete.
- B. Inspection:
 - 1. Ensure that excavation and formwork are completed and within the allowed tolerances.
 - 2. Ensure that ice and excess water are removed, no frost is present, and that ground is not frozen.
 - 3. Check that reinforcement is secured in place.
 - 4. Verify that insulation, anchors, and other embedded items are secured in position.
- C. Install concrete work in accordance with ACI 301-99 except as amended by this section.

3.03 SETTING FORMS

- A. Stake forms and hold to the established lines and grades. Provide minimum 1/8" per foot fall away from structures or as shown on the drawings.

3.04 TREATMENT

- A. Wet wood and coat metal forms with oil, soft soap, or whitewash before depositing any material against them. Remove all mortar and dirt from forms that have been previously used.

3.05 MARKINGS

- A. Cut surface of concrete walks into flags by marking with an edging tool having a radius of 1/4". Make flags not longer than 6 feet on any side nor longer than the width of the sidewalk. Round the slabs on all surface edges, including the cross markings between flags, to a radius of 1/4".

3.06 JOINTS

- A. Provide an expansion joint 1/2" in thickness, extending full depth of the concrete and with filler as herein specified, at intervals of not more than 15 feet, or as shown on plans. Provide a similar joint 1/2" in thickness in each walkway at intersection of walkways. Also provide an expansion joint 1/2" in thickness at each intersection of sidewalk and street curb and at such other points as may be designated by the Engineer. Separate sidewalk from abutting structures by 1/2" expansion joints. Place expansion joints 1/2" in thickness extending full depth of the concrete in a square outline around each object in sidewalks, such as fire hydrants, utility poles light standards, etc.
- B. All expansion joints must be sealed with an approved joint sealant.

3.07 PLACING CONCRETE

- A. Place concrete only on a moist subgrade and not adjacent to or around utility structures until such structures have been set to the proper grade.
- B. Transport from the mixer and place by such a means as will not cause segregation of materials or loss of ingredients. Deposit successive batches in one layer by a continuous operation, completing individual sections to the required depth and width. Do not use concrete that has taken its initial set. Fill forms and bring the concrete to the established grade by means of a strike board or straight edge. Thoroughly tamp concrete until mortar is flushed to the surface sufficiently to finish and mark the surface.
- C. Spade and/or vibrate the concrete so that it will flow together and completely fill all void spaces especially along forms (including cross forms of joints) to prevent honeycombing and shall be struck off and tamped in an approved manner, until dense surface is obtained, free from porous or rough spots and at the required sections and grade.
- D. Use method of placing the various sections so as to produce a straight clean-out joint between them, in order to make each section an independent unit. Do not use any concrete in excess of that needed to complete a section at the stopping of work.

- E. Do not pour concrete when temperature is below 35 degrees Fahrenheit, and do not place concrete on frozen subgrade. Take all necessary precautions to prevent damage to concrete in excess of that needed to complete a section at the stopping of work.
- F. At all times during construction period, maintain proper drainage, by natural flow or pumping as required, so that water will drain away from excavated areas. Do not allow water to stand in any excavations, or elsewhere, to be covered by concrete. Provide and maintain in proper working order all necessary pumping and other equipment required to maintain drainage.

3.08 FINISH

- A. After the concrete has been brought to the established grade by means of a strike board and tamped to bring the mortar to surface, float to a true even surface and finish with steel trowel. After the trowel finish has taken its initial set, brush surface lightly at right angles to center line of sidewalk with a soft bristle brush.
- B. Do not apply heat to the concrete surface to hasten its hardening.

3.09 CURING AND PROTECTION:

- A. As soon as the concrete has hardened sufficiently to prevent damage, apply specified liquid membrane-forming curing compound in accordance with manufacturer's written instructions.
- B. Protect the freshly finished concrete from hot sun and drying winds until the curing compound is applied. Do not allow the concrete surface to be damaged or pitted by raindrops. Provide and use, when necessary, sufficient tarpaulins to completely cover all sections that have been placed within the proceeding twelve hours. Erect and maintain suitable barriers to protect the concrete. Repair any section damaged from traffic or other causes occurring prior to its official acceptance. Before the sidewalk is opened to traffic, remove and dispose of the covering.
- C. Apply surface treatment to all concrete surfaces per manufacturer's requirements.

3.10 FREEZING TEMPERATURE

- A. If at any time during the progress of the work, the temperature is predicted to drop below 35 degrees Fahrenheit within 24 hours after placement, heat the water and aggregates and take precautions to protect the work from freezing for at least five days.

END OF SECTION

**SECTION 32 1613
CONCRETE CURB AND GUTTER**

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Construct cast-in-place combination curb and gutter.

1.02 RELATED WORK

- A. Section 31 2000 – Earth Moving.
- B. Section 32 1376 – Sidewalks.
- C. Section 32 0523 – Cement & Concrete for exterior improvements.
- D. Section 32 1373- Concrete Paving Joint Sealants.

1.03 SUBMITTALS

- A. See Related Work

1.04 QUALITY ASSURANCE

- A. Perform cast-in-place concrete in accordance with ACI 301 and Section 32 0523.
 - 1. Standard Specifications for Highway construction, Edition of 2014, hereafter referred to as “AHTD Standard Specifications”.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Ready Mixed concrete: ASTM C94 and Articles 2.01 through 2.06 of Section 32 0523.
- B. Curing Compound: ASTM C309.
- C. Pre-formed expansion joint fillers: ASTM D1751-18.
 - 1. Thickness: ½ inch.

PART 3 EXECUTION

3.01 SUBGRADE PREPARATION

- A. Grade subgrade and compact in same manner and to same density as specified in Section 31 2000 controlled fill.

3.02 GENERAL

- A. Notify Architect/Engineer for inspection at least 24 hours before the planned time to pour concrete.
- B. Inspection:
 - 1. Ensure that excavation and formwork are completed and within the allowed tolerances.
 - 2. Ensure that ice and excess water are removed, no frost is present, and that ground is not frozen.
 - 3. Check that reinforcement is secured in place.
 - 4. Verify that insulation, anchors, and other embedded items are secured in position.
- C. Install concrete work in accordance with ACI 301-20 except as amended by this section.

3.03 INSTALLATION

- A. Cast-in-place Concrete: Refer to Section 32 0523
 - 1. See standard Detail Drawings for Curb and Gutter, and for Handicap Ramp.
 - 2. Prepare subgrade in accordance with Section 31 2000.
 - 3. Set forms to line and grade.
 - 4. Install forms over full length of curb.

5. Form contraction joints at maximum 10 feet spacing using steel templates, division plates or sawcuts.
 6. Remove templates or plates as soon as concrete has hardened sufficiently to retain its shape.
 7. Install preformed expansion joint fillers at maximum 40 feet spacing, at curb returns, and behind curb at abutment to sidewalks and other structures.
 8. Place top of expansion joint material $\frac{1}{4}$ inch below curb surface.
 9. Place concrete in position without separation of concrete materials.
 10. Consolidate concrete with mechanical vibrators.
 11. Round face of curbs at top with finishing tool of correct radius.
 12. Finish exposed surfaces with wood float followed by light brushing with broom.
 13. Apply curing material and cure for seven days.
- B. Repair of surface defects: Comply with requirements of Section 32 0523.
- C. Field Quality Control: Comply with requirements of Section 32 0523.
- D. Protection of Completed Work: Comply with requirements of Section 32 0523.

END OF SECTION

**SECTION 32 1700
PAVEMENT MARKING AND CONTROL DEVICES**

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Section 01 3300 Submittals.
- B. Section 32 1313 Concrete Paving.

1.02 SUMMARY

- A. This Section includes the following:
 - 1. Pavement marking paint.
 - 2. Wheel stop bumpers.

1.03 SUBMITTAL

- A. Product Data: Submit manufacturer's printed product sheets for each product indicated.
- B. Provide manufacturer's standard color selection chart for each color as shown on the drawings.
- C. Submit written conformation from the paint manufacturer that the selected paint products are compatible with the approved asphalt mix design.

1.04 REFERENCES

- A. Installer Qualifications: An experienced installer who has specialized in installing stripping material layouts to the extent of those indicted for this Project and whose work has resulted in stripping installations with a record of successful in service performance.
- B. Source Limitations: Obtain each type of paint through on source from a single manufacturer.
- C. Preconstruction Compatibility and Adhesion Testing: Submit to paint manufacturer, a copy of the approved asphalt overlay mix design for verification that the selected paints will adhere to the substrate without excessive bleed through, cracking, fading.
- D. Apply marking paint in dry weather when pavement and atmospheric temperature fifty (50) degrees F. or above and are anticipated to remain above fifty (50) degrees F. for four (4) hours after completing application.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, curing time, and ,mixing instructions for multi-component materials.
- B. Store and handle materials to comply with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes. represents.

PART 2 PRODUCTS

2.01 STRIPING AND TRAFFIC CONTROL MARKING PAINTS

- A. Parking Lots: Provide contractor grade acrylic, striping paint for new asphalt overlay and seal coat substrates in colors as shown on the drawings.
- B. Approved Manufacturers:
 - 1. Sherwin-Williams
 - 2. Engineer Approved

2.02 WHEEL STOP BUMPERS

- A. Wheel stop bumpers shall be of type and size as shown on the drawings.

- B. Provide manufacturer's recommended galvanized steel mounting spikes. Spikes shall be a minimum of 18" in length and 0.75" diameter.
- C. Approved Manufacturers
 - 1. Engineer Approved

PART 3 EXECUTION

3.01 EXAMINATION

- A. Inspect existing pavement surfaces for conditions and defects that will adversely affect the quality of work, and which cannot be put into an acceptable condition through normal preparatory work as specified.
- B. Do not install marking over unsound pavements. If these conditions exist, notify Engineer.
- C. Verify that the new asphalt paving is complete and acceptable and the minimum approved cure time has elapsed prior to applying paint.

3.02 PREPARATION

- A. Provide qualified technician to supervise equipment and application of markings.
- B. Thoroughly clean surfaces free of dirt, sand, gravel, oil and other foreign matter.
- C. Layout markings using guidelines, templates and forms. Stencils and templates shall be professional made to industry standards. Use of "free-hand" painting of arrows, symbols or wording shall not be allowed.
- D. Layout spacing of parking stalls shall be approved by the Engineer prior to applying paint.
- E. Protect adjacent curbs, walks, fences and other items from receiving paint overspray.

3.03 APPLICATION

- A. Use commercial air spray striping machine or a commercial airless machine capable of applying an even coating at the manufacturer's recommended thickness in an even width across the strip. Ensure equipment nozzles are clean and properly aligned to produce a uniform line with a sharp edge.
- B. Apply marking paint at a rate of one (1) gallon per three to four hundred (300-400) lineal feet of four (4) inch wide strip and a minimum of 15-mils thick or as recommended by the paint manufacturer.
- C. Apply stripes straight, even and parallel in accordance with the drawings and approved layout.
- D. Apply stripes and other markings in widths and colors as shown on the drawings.

3.04 PROTECTION

- A. Barricade marked areas during installation and until the marking paint has dried and is ready for traffic.

3.05 WHEEL STOPS

- A. Install wheel stops where shown on the drawings.
- B. Install stops as shown in the plan details.
- C. Wheel stops shall be installed perpendicular to the length of the parking stall.

END OF SECTION

**SECTION 32 1723
PAVEMENT MARKINGS**

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Providing pavement markings as shown on Drawings.

1.02 REFERENCE STANDARDS

- A. Federal Specifications (FS):
 - 1. TT-P-115E Paint, Traffic, Highway, White and Yellow.
 - 2. TT-P-1952B Paint, Traffic, and Airfield Marking, Water Emulsion Base.
- B. Federal Standard (Fed. Std.)
 - 1. No 141B Paint, Varnish, Lacquer, and related materials.
- C. Arkansas Department of Transportation (ArDOT)
 - 1. Standard Specifications for Highway Construction, 2014 Edition

1.03 SUBMITTALS

- A. Submit a test report showing either that the proposed batch meets all specified requirements or that a previous batch manufactured using the same formulation as that used in manufacturing the proposed batch for the following properties required in the material specification: weight per gallon, viscosity, fineness of grind, drying time, and gradation. Testing procedures and reports shall be as specified in paragraph 5 of Method 1031.2 of Fed. Std.141.

1.04 DELIVERY, HANDLING AND STORAGE

- A. Deliver material in sealed containers that plainly show the designated name, formula or specification number, batch number, color, date of manufacture, manufacturer's name, formulation number and directions, all of which shall be plainly labeled at time of use.
- B. Furnish paint in containers not larger than five gallons.
- C. Store paint on project site. Store emulsion paints to prevent freezing.

1.05 SITE CONDITIONS

- A. Unless other wise recommended by the paint manufacturer apply pavement markings material only when the ambient temperature is between 40 and 95 degrees F.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Parking:
 - 1. Manufactured according to FS TT-P-115E, FS TT-P-1952B or ArDOT Standards Specification Section 718,719, or 720.
 - 2. Symbol Color: White.
 - 3. Handicapped Access Aisles on Asphalt Paving: Color, White
 - 4. Handicapped Access Aisles on Concrete Paving: Color, ADA Blue
 - 5. Paint shall be homogeneous, easily stirred to smooth consistency, and shall show no hard settlement or other objectionable characteristics during a storage period of six months.
 - 6. Note: Verify colors with owner prior to painting.
- B. Roadway:
 - 1. Manufactured according to ArDOT Standard Specifications Section 719 or 720.
 - 2. Color:
 - a. Separating traffic traveling in opposite directions: Yellow

- b. Left edge of roadways: Yellow
- c. Separating two-way left turn lanes and reversible lanes from other lanes: Yellow
- d. All other applications: White
- e. Pre-molded striping and symbols as shown and called for on plans.

PART 3 EXECUTION

3.01 SURFACE PREPARATION

- A. Allow new pavement surfaces to cure for a period of not less than 30 days before application of markings materials.
- B. Thoroughly clean all surfaces to be marked before application of paint. Remove dust, dirt, and other granular surface deposits by sweeping, blowing with compressed air, rinsing with water or a combination of these methods as required.
- C. Completely remove rubber deposits, surface laitance, existing paint markings, and other coatings adhering to the pavement with scrapers, wire brushes, sandblasting, approved chemicals, or mechanical abrasion as directed.
- D. Where oil or grease are present on old pavements to be marked, scrub affected areas with several applications of trisodium phosphate solution or other approved detergent or degreaser, and rinse thoroughly after each application. After cleaning, seal, seal oil-soaked areas with cut shellac to prevent bleeding through the new paint.

3.02 EQUIPMENT

- A. General: Use only approved machines, tools, and equipment. Maintain equipment in satisfactory operating condition. Hand-operated push type machines of a type commonly used for application of paint to pavement surfaces will be acceptable for marking small street and parking areas. Use applicator machine equipped with the necessary paint tanks and spraying nozzles. Equipment shall be capable of applying paint uniformly at coverage specified. Provide sandblasting equipment as required for cleaning surfaces to be painted. Use hand-operated spray guns for use in areas where push-type machines cannot be used.
- B. Sandblasting Equipment: Sandblasting equipment shall include an air compressor, hoses, and nozzles of proper size and capacity as required for cleaning surfaces to be painted. The compressor shall be capable of furnishing not less than 150 c.f.m of air at a pressure of not less than 90 psi at the nozzle for each nozzle used.
- C. During concrete placement, keep base sufficiently moist to prevent excessive absorption of water from freshly placed concrete.

3.03 APPLICATION

- A. Rate of Application: Apply two (2) coats of paint at manufacturer's recommended rate with total maximum of 320 lineal feet per gallon per coat with 4" wide stripe. Apply with mechanical equipment to produce uniform straight edges. At sidewalk curbs, use a straightedge to ensure a uniform, clean, and straight stripe.
- B. Paint: Apply paint in stripes of specified width to clean, dry surfaces, unless otherwise approved, only when air and pavement temperature is above 40 F and less than 95 F. Maintain paint temperature within these limits. Apply paint pneumatically with approved equipment at rate of coverage specified herein. Provide guide lines and templates as necessary to control paint application. Take special precautions in marking numbers, letters, and symbols. Sharply outline all edges of markings. Maintain the maximum drying time requirements of the paint specifications to prevent undue softening of bitument, and pickup, displacement, or discoloration by tires of traffic. If there is a deficiency in drying of the markings, discontinue painting operations until cause of the slow drying is determined and corrected.

3.04 PROTECTION

- A. Prevent damage to newly painted surfaces by either placing small markers along newly painted lines or controlling traffic to keep vehicles away from area of newly painted lines.

END OF SECTION

SECTION 33 4000

STORM DRAINAGE UTILITIES

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Pipe culverts.
- B. Concrete curb inlet structures and junction boxes.
- C. Connection to existing concrete drainage structures.
- D. Pipe material noted on plans may not be substituted by any other material.

1.02 RELATED WORK

- A. Section 31 2000 – Earth Moving
- B. Section 32 0523 – Cement and Concrete for Exterior Improvements.
- C. Section 32 1613 – Concrete Curb and Gutters.
- D. Section 33 0516 – Manhole and Structures.

1.03 SUBMITTALS

- A. See Related Work

PART 2 PRODUCTS

2.01 PIPE CULVERTS

- A. Reinforced Concrete Pipe (RCP): ASTM C76-78, Class III.
 - 1. Material: Concrete and reinforcing steel.
 - 2. Shape: Circular.
 - 3. Sizes: As shown on Drawings.
- B. Joint Material:
 - 1. Cold-applied preformed plastic gasket type sealant conforming to Federal Specification SS-5-00210.
 - 2. Primer: As specified by the manufacturer.
- C. Polymer Coated Corrugated smooth interior Steel Pipe (CMP): AASHTO M36 and AASHTO M218:
 - 1. Material: Steel (polymeric pre-coated galvanized type B 10mil both sides).
 - 2. Type: Corrugated w / 3/4" x 3/4" x 7 1/2 " external ribs in accordance w/ ASTM A760.
 - 3. Sizes: As shown on Drawings.
- D. Corrugated Polyethylene Pipe (CPEP): AASHTO M 294 or ASTM F 2648 for LEED Projects.
 - 1. Material: Virgin Polyethylene compounds, uniformly pigmented, with no cracks or creases. The pipe shall have a minimum pipe stiffness at five percent deflection as follows when tested in accordance with M 294 or F 2648:

<u>Diameter (in)</u>	<u>Pipe Stiffness (psi)</u>
12	45
15	42
18	40
24	34
30	28
36	22
 - 2. Type: "S" – Full circular cross-section with an outer corrugated wall and a smooth inner wall.
 - 3. Sizes: As shown on drawings.

- E. Couplings for CPEP
 - 1. Couplings shall be corrugated to match the pipe corrugations and shall provide sufficient longitudinal strength to preserve pipe alignment and prevent separation at the joints. Couplings shall be bell and spigot, split collar, or screw-on collar.

2.02 PIPE AND VALVES FOR FUEL CONTAINMENT

- A. Pipe used for fuel containment when shown on plan:
 - 1. Ductile Iron Pipe.
- B. Valves for fuel containment when shown on plan:
 - 1. See Section 33 1219
 - a. shall contain "Buna N" NBR (nitrile butyl rubber)

2.03 CURB INLET STRUCTURE AND JUNCTION BOX

- A. Concrete and reinforcing steel:
 - 1. Refer to Standard Detail.
 - 2. Refer to Section 32 0523 and ACI 301.
- B. Manhole rings and covers: ASTM A48, Class 30A, Type II Traffic safe.
 - 1. Material: Cast Iron, solid cover.
 - 2. Size 24-inch diameter with ring depth equal to concrete thickness.

2.04 BEDDING AND BACKFILL MATERIALS

- A. Select Backfill Materials: soil excavated from trench or sub-soil from site that is free of rocks larger than 1-1 ½ inches in greatest dimension, and free from frozen soil, large clumps of soil, muddy soil, organic matter and foreign materials.
- B. Class I Bedding Material: Angular, graded stone, ¼ inch to 1½ inch size.

PART 3 EXECUTION

3.01 CONCRETE PIPE CULVERT INSTALLATION

- A. Excavate and backfill the trench in accordance with the provision of Section 33 05 16
- B. Grade the bottom of the trench to provide a firm bedding surface of uniform density along the entire length of the pipe.
- C. Shape the bottom of the trench to conform to the bottom one quarter of the outside diameter of the circular pipe.
- D. Lay the pipe beginning at the downstream end with the groove end of the pipe placed facing upstream.
- E. Join pipe using specified cold applied preformed plastic joint sealant. Clean the pipe joint surface and prime, if recommended by the manufacture, brush on and allow to dry. Remove protective wrapping from one side of the rope. Lay rope strip side up on the surface of the pipe joint and press the strip firmly to surface of pipe joint end-to-end continuing around the entire circumference of the joint. Remove the remaining protective wrapping and force pipe into connection until material fills the joint space.
- F. To insure an even and well-filled joint, accomplish the final joining of the pipe by either pushing or pulling by mechanical means each joint of the pipe as it is laid.
- G. In cold weather, either warm the joint material in a hot water bath, or by other approved methods, to the extent required to keep the material pliable for placement without breaking or cracking, or use butyl rubber type joint sealant.
- H. In areas not under pavement of structure "Slice-in" the bedding material under the haunches of the pipe with and then hand tamp or mechanical tamp the backfill up to the horizontal centerline of the pipe.
- I. Under pavement and structures, compact the backfill on the sides of the pipe to the required densities specified in Section 31 2000 using mechanical tamps with the top 12 inches of subgrade compacted to 95% of the soils Modified Proctor maximum dry density at or near the optimum moisture content.

3.02 CORRUGATED POLYETHYLENE PIPE CULVERT INSTALLATION

- A. Excavate subsoil to depth and grade line as required for proper installation of the culvert pipe. Keep trench as narrow as possible but sufficiently wide to permit tamping under the haunches and installation of connecting band when sections are joined. Keep sidewalls as vertical as possible, at least to an elevation above the top of the pipe.
- B. Grade bottom of trench to provide a firm bedding surface of uniform density along the entire length of the pipe. Remove rock or soft, unstable material encountered at the excavated grade line to a minimum depth of 6 inches and replace with Class I bedding material.
- C. Shape bottom of trench to conform to bottom one quarter of the outside diameter of the circular pipe and up to the widest part of arch pipe, allowing a uniform blanket of loose material to cover the shaped bedding to a depth sufficient to allow the corrugations to be filled with the material.
- D. Place corrugated metal pipe on bedding with longitudinal laps or seems, if any, at the sides. To assemble sections of pipe, place corrugated connecting band around or under the first pipe, then lay the second pipe section with the corrugations matching and the adjacent ends butting together. Keep dirt and gravel out of joint so that corrugations fit snugly. Fasten bolts on band tightly and uniformly.
- E. Place backfill material in 4 inch layer haunches alternately on both sides of pipe, using Class I bedding material. Slice-in with a shovel under the haunches to eliminate voids. Using select backfill material, place material in 6 inch lifts alternately on each side of pipe up to widest part at arch pipe, and using hand tamps or mechanical tampers, compact each lift to a minimum of 90% of optimum density for the material as determined by Modified Proctor procedures, ASTM D-1557. If Class I bedding material is used, place the material in such manner as to eliminate voids and consolidate and interlock the material to form a stable side support for the pipe.
- F. In locations not in traffic areas, hand place select backfill to a level 12 inches above the top of the pipe in such manner as to minimize voids, unless otherwise noted on the plans. Backfill up to surrounding ground surface or finished subgrade with subsoil containing no rocks or boulders large than 6 inches in greatest dimension within 12 inches of the subgrade. Leave top of backfill slightly mounded to allow for settlement.
- G. Under traffic areas, backfill trench from horizontal centerline of pipe up to top of subgrade using either select backfill material or Class I bedding material. If select backfill material is used, place material in 6 inch lifts and compact with mechanical tamps. Compact each layer to within 24 inches of subgrade to 90% of optimum density for the material as determined by Modified Proctor procedures, ASTM D-1557. Compact the remaining 24 inches to subgrade to 95% of optimum density using the same procedures. If Class I bedding material is used, place the material in such manner as to minimize voids and interlock the material to form a stable fill that will support the pavement structure and subsequent traffic loads.
- H. Patch cut edges and surface-damaged areas with specified patching material to restore protection to metal surface originally provided by polymer coating.

3.03 CONCRETE STRUCTURES INSTALLATION

- A. Forming concrete, placing reinforcing steel and placing and curing concrete: Refer to Section 32 05 23 and ACI 301.
- B. Excavation and Backfill: Refer to Section 33 0516.

3.04 EXISTING STRUCTURE MODIFICATION

- A. Remove top and throat of existing curb inlet.
- B. Remove loose and damaged concrete material.
- C. Dispose of removed material including cast iron ring and cover.
- D. Cut and tie reinforcing steel to new steel as detailed on Drawings.

- E. Form new top and provide new cast iron ring and cover.
- F. Place steel as detailed on Drawings and place concrete to modify structure into a junction box.
- G. Patch inside face of wall to achieve smooth surface.

END OF SECTION