

GRAND BAY NATIONAL ESTUARINE RESEARCH RESERVE NATURE PAVILION

6005 Bayou Heron Road, Moss Point, Mississippi



443 Main Street
Bay Saint Louis MS 39520
t.228 467 1149
www.unarch.com

Project Manual: 20 February 2017

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DOCUMENT 00005 – PROJECT DIRECTORY

OWNER:

MISSISSIPPI DEPARTMENT OF MARINE RESOURCES
1141 BAYVIEW AVENUE
BILOXI, MS 39530
CONTACT: MICHELLE WILLIAMS
228.374.5000

USING AGENCY:

GRAND BAY NATIONAL ESTUARINE RESEARCH RESERVE
6005 BAYOU HERON ROAD
MOSS POINT, MS 39562
AYESHA GRAY, DIRECTOR
228.475.7047

ARCHITECT:

UNABRIDGED ARCHITECTURE
443 MAIN STREET
BAY ST LOUIS, MS 39520
ALLISON ANDERSON FAIA, LEED-AP
228.467.1149

STRUCTURAL ENGINEER:

TOM HERRIN P.E.
BALDAUF-HERRIN AND ASSOCIATES
9603 WHITE ROCK TRAIL #207
DALLAS, TX 75238
214.341.7575

DOCUMENT 00007 – SEAL AND STAMP

The following specification sections of the Project Manual have been assembled by UNABRIDGED ARCHITECTURE and were prepared by me or under my responsible supervision.

02231	TREE PROTECTION AND TRIMMING
05521	PIPE AND TUBE RAILINGS
06100	ROUGH CARPENTRY
06150	WOOD DECKING
07460	SIDING
09910	PAINTING



Allison H. Anderson FAIA, LEED-AP

ADVERTISEMENT FOR BIDS

SECTION 00000

Sealed bids will be received at the office of the: Department of Marine Resources,
1141 Bayview Avenue, Biloxi, MS 39530, 5th floor Conference Room, until 2:00:00 p.m.
on **Tuesday, March 28, 2017.**

Project # [1450-17-R-IFBD-00010](#)

Outdoor Classrooms for Grand Bay NERR

Grand Bay National Estuarine Research Reserve
6005 Bayou Heron Road,
Moss Point, MS 39562

at which time they will be publicly opened and read. Contract Documents may be
obtained from:

unabridged Architecture PLLC, Allison and John Anderson Architects
443 Main Street, Bay St Louis, MS 39520
228.467.1149

The project includes foundation piers, wood frame decks and guardrails. The site is at the
edge of the marsh, and requires tree protection. There will be a Pre-Bid Conference at the site
on Wednesday, March 8, 2017 at 1:00 p.m.

Bid preparation will be in accordance with *Instructions to Bidders* bound in the Project
Manual. The Owner reserves the right to waive irregularities and to reject any or all bids.

NOTE: Telephones and desks will not be available for bidders use at the bid site.

Signed,
Jamie Miller
Executive Director, Mississippi Department of Marine Resources

Dates of Publication: February 24, 2017
 March 3, 2017

**INSTRUCTIONS TO BIDDERS
SECTION 00100**

PART 1 - GENERAL

- 1.01 **QUESTIONS:** Questions should be directed to the Professional. Should a Bidder find discrepancies in, or omissions from, the Drawings or Project Manual, or be in doubt as to their meaning, the Bidder should immediately notify the Professional. The Professional will send written instruction(s) or interpretation(s) to all known holders of the documents. Neither the Owner, nor the Professional, will be responsible for any oral instruction or interpretation.
- 1.02 **BIDDER'S QUALIFICATIONS:**
- A. **Certificate of Responsibility:** The Mississippi State Board of Contractors is responsible for issuing Certificates of Responsibility to Contractors. To be awarded a Contract for public work, Sections 31-3-15 and 31-3-21 of the **Mississippi Code 1972, Annotated** requires a Contractor to have a current Certificate of Responsibility at bid time and during the entire length of the job. The Certificate of Responsibility number issued becomes a significant item in all public bidding.
 - B. **Bid Under \$50,000:** If a Bidder submits a bid not exceeding \$50,000, no Certificate of Responsibility number is required; however, a notation stating the *bid does not exceed \$50,000* must appear on the face of the envelope, or a Certificate of Responsibility number.
 - C. **Bid Over \$50,000:** Each Bidder submitting a bid in excess of \$50,000 must show its Certificate of Responsibility number on the bid and on the face of the envelope containing the bid.
 - D. **Joint Venture Bid:** When multiple Contractors submit a joint venture bid in excess of \$50,000, a *joint venture* Certificate of Responsibility number must be shown on the bid and on the face of the envelope containing the bid. If the Multiple-Contractor joint venture has no *joint venture* Certificate of Responsibility number, each of the Contractors participating in the bid must indicate their individual Certificate of Responsibility numbers on the bid and on the face of the envelope.
- 1.03 **NON-RESIDENT BIDDER:** When a non-resident Bidder (a Contractor whose principal place of business is outside the State of Mississippi) submits a bid for a Mississippi public works project, one of the following is required and shall be submitted with the Proposal Form:
- A. **Copy of Law:** If the non-resident Bidder's state has a resident Bidder preference law, a copy of that CURRENT law shall be submitted with the Proposal Form.
 - B. **Statement:** If the state has no such law then a statement indicating *the State of (Name of State) has no resident Contractor preference law* shall be submitted with the Proposal Form.
- 1.04 **DISQUALIFICATION OF BIDDER:** A Bidder may be disqualified for any of the following reasons: (see 600.53)
- A. Failure to comply with the bid requirements.
 - B. Bidder is in arrears on existing Contracts with the Owner or another state agency.
 - C. Bidder is, or anticipates being, in litigation or arbitration with the Owner or another state agency.
 - D. Bidder has defaulted on a previous Contract.
- 1.05 **CONDITIONS OF WORK:** Each Bidder must fully inform himself of all conditions relating to the construction of the Project and employment of labor thereon. Failure to do so will not relieve a successful Bidder of obligations to furnish all material and labor necessary to carry out the provisions of the Contract. Insofar as possible, the Bidder must employ methods, or means, which will not cause interruption of, or interference with, the work of any other Bidder, or Contractor.
- 1.06 **EXAMINATION OF SITE:** All Bidders, including the general Contractor and Subcontractors, shall visit the building site, compare the Drawings and Project Manual with any work in place and be informed of all conditions. Failure to visit the site will in no way relieve the successful Bidder from furnishing any materials or performing any work required to complete work in accordance with Drawings and Project Manual without additional cost to the Owner.
- 1.07 **LAWS AND REGULATIONS:** The Bidder's attention is directed to the fact that all applicable Mississippi state laws, rules and regulations of all authorities having jurisdiction over construction of the Project apply to the Contract.

1.08 **OBLIGATION OF BIDDER:** At the bid opening, each Bidder will be presumed to have inspected the site, read and become thoroughly familiar with the Drawings and the Project Manual, including all addenda.

1.09 **BID DOCUMENT DEPOSIT AND RETURN:** The deposit amount, if any, shall be established as the estimated actual cost of copying and reproduction plus shipping via USPS standard Ground Transportation, is shall be indicated in the Advertisement for Bids. Bidders may request shipping via express carrier or expedited delivery at their own additional cost. Upon returning the documents to the Professional within ten (10) working days of the bid date and in good condition, all document holders will be refunded the full deposit amount. Further, any document holder who is awarded the contract, related subcontracts and/or vendor agreements may elect to retain their documents and request refund of the full deposit amount upon execution of the construction contract and approval of general contractor, however; such documents shall be counted toward the total number of copies furnished free of charge to the general contractor. No partial sets of documents will be issued. Selected trade organizations, plan rooms and web-based distribution networks will be issued one (1) set of documents without charge. (modified August 2016)

PART 2 - PROPOSAL FORM

2.01 **METHOD OF BIDDING:** Lump sum, single bids received on a general contract will include general, mechanical and electrical construction and all work shown on Drawings or specified in the Project Manual.

2.02 **PROPOSAL FORMS:** The Bidder shall make all proposals on forms provided and shall fill all applicable blank spaces without interlineations or alteration and must not contain recapitulation of the work to be done. No oral or telegraphic proposals will be considered.

2.03 **TIME OF COMPLETION:** The Bidder shall agree to commence work on, or before, a date specified in a written *Notice to Proceed* and fully complete the Project within the calendar days indicated on the Proposal Form.

2.04 **BASE BID AND ALTERNATES:**

A. On the Proposal Form, the Bidder shall write out the Base Bid amount in words and include the numerical amount. The written word shall govern.

B. The Proposal Form shall contain a brief description of each alternate modifying the scope. The Bidder shall write out the amount in words and include the numerical amount for each alternate. The written word shall govern. Refer to Section 01030 entitled *Alternates* for additional information.

2.05 **SUBSTITUTIONS:** No substitutions, qualifications or redefining of the Specification requirements are allowed to be marked on the Proposal Form, unless specifically required by the Bid Documents. Refer to Section 01630 entitled *Substitutions and Product Options* which covers procedures after the award of Contract. (unchanged but modified 01630 August 2016)

2.06 **ADDENDA:** Any addenda to the Drawings or Project Manual issued before or during the time of bidding shall be included in the proposal and become a part of the Contract. The Proposal Form will have ample space to indicate the receipt of addenda. When completing the Proposal Form, the Bidder shall list the Addendum number in spaces provided. (see proposal form) (modified August 2016)

2.07 **BIDDER IDENTIFICATION:**

A. **Signature:** The Proposal Form shall be signed by any individual authorized to enter into a binding agreement for the Business making the bid proposal.

B. **Name of Business:** The name appearing on the Proposal Form should be the complete spelling of bidder's name - exact as recorded at the Secretary of State [<http://www.sos.state.ms.us/busserv/corp/soskb/csearch.asp>] which should be the same as you applied for at the Mississippi State Board of Contractors [<http://www.msdoc.us/Search2.CFM>] (see 2.07, 3.01, 5.01, proposal form)

C. **Legal Address:** The address appearing on the Proposal Form should be the same address exact as recorded at the Secretary of State [<http://www.sos.state.ms.us/busserv/corp/soskb/csearch.asp>] which should be the same as you applied for at the Mississippi State Board of Contractors [<http://www.msdoc.us/Search2.CFM>]

D. **Certificate of Responsibility Number(s):** The Certificate of Responsibility Number(s) appearing on the Proposal Form should be the same number appearing in the current Mississippi State Board of Contractors Roster.

2.08 **BID SECURITY:** The Bid Security shall be in the form of a Bid Bond, or a Certified Check: (modified Dec 2013) (see also 4.07

herein)

A. **Bid Bond:** The Bidder may submit a Bid Bond by a Surety licensed in Mississippi in the amount of five percent (5%) of the base bid. The Bid Bond shall be duly executed by the Bidder, a Mississippi Licensed Agent for said Surety approved by the Mississippi Insurance Department OR signed by the Surety AND countersigned by a Mississippi Licensed Agent for said Surety approved by the Mississippi Insurance Department. http://www.mid.state.ms.us/licapp/search_main.aspx (No standard form is required for the Bid Bond.)

B. **Certified Check:** The Bidder may submit a certified check made out to the Owner in the amount of five percent (5%) of the base bid. All checks received from Bidders will be returned upon request, unless a Bidder is one (1) of the three (3) apparent low Bidders. The three (3) apparent low Bidder's checks will be held for forty-five (45) days, unless a Contract is awarded and executed in less time.

2.09 **POWER OF ATTORNEY:** Each bid security must be accompanied by an appropriate Power of Attorney. No Power of Attorney is necessary with a certified check.

PART 3 - SUBMITTING THE PROPOSAL FORM

3.01 **SUBMITTAL:** A bid must be delivered to the address indicated on the Advertisement for Bids prior to the time and date stated. Only one original of Bid Proposal shall be submitted which should be sealed in an opaque envelope marked, mailed or hand-delivered as follows: (beginning 1/1/09 and for a reasonable time period, a duplicate copy will not disqualify your bid, but the second copy, without comparison, will be destroyed in the bid opening, not read aloud nor used thereafter, in order to prevent inadvertent differences in the duplicate forms): (also see 600.42)

(In upper left hand corner)

Name of Firm (complete spelling of bidder's name and address – exact as recorded at the Secretary of State which should be the same as you applied for at the Mississippi State Board of Contractors – see 2.07, 3.01, 5.01)

(Bid shall be addressed and delivered to)
Owner

(In lower left hand corner)

Bid for Project # _____

Title _____

Using Agency _____

Certificate of Responsibility # _____ (for over \$50,000.00)

Under \$50,000.00 (add statement)

If the Bid is mailed, the bid envelope shall be placed inside a second envelope to prevent inadvertent premature opening of the Proposal.

3.02 **MODIFICATION TO BID:** A bidder may modify the bid prior to the scheduled closing time indicated in the Advertisement for Bids in the following manner:

A. **Notification on Envelope:** A modification may be written on the outside of the sealed envelope containing the bid.

B. **Facsimile:** A facsimile (fax) will not be acceptable.

3.03 **WITHDRAWAL OF BID:** Any bid may be withdrawn prior to the scheduled time for opening of bids. However, bids may not be withdrawn until forty-five (45) days after bid opening.

PART 4 - BID OPENING AND AWARD OF CONTRACT

4.01 **OPENING OF BIDS:** Bids will be publicly opened shortly after the time stated in the Advertisement for Bids. Bidder representatives are invited; however, attendance is not mandatory.

Closure of agency preventing the opening of bids at the advertised date and time due to Force Majeure Event reasons will result in bids being publicly opened . . . on the next business day that the agency shall be open and at the previously advertised time . . . (added Jan 2015)

- 4.02 **IRREGULARITIES:** The omission of any information requested on the Proposal Form may be considered as an informality, or irregularity, by the awarding public body when in their opinion the omitted information does not alter the amounts contained in the submitted bid proposal, or place other Bidders at a disadvantage.
- 4.03 **PROTEST:** Any protest must be delivered in writing to the Owner within twenty-four (24) hours after the bid opening.
- 4.04 **ERRORS:** Any claim of error and request for release from bid must be delivered in writing to the Owner within twenty-four (24) hours after the bid opening. The Bidder shall provide sufficient documentation with the written request clearly proving an error was made.
- 4.05 **AWARD OF CONTRACT:** The Owner reserves the right to reject any, or all bids. A Contract will be awarded on the basis of the low base bid, or low combination of base bid and those alternates selected by the Owner in any order determined to be in the best interest of the Using Agency and which produces a total within available funds.
- 4.06 **FAILURE TO ENTER INTO A CONTRACT:** The Bidder shall forfeit the Bid Security to the Owner as liquidated damages for failure, or refusal, to execute and deliver the Contract, Bond and Certificate of Insurance within ten (10) working days after notice of the acceptance of the bid/receipt of Contracts from the Professional. (*"working" days added 11/3/10 (modified Jan 2015)*)
- 4.07 **SECURITY FOR FAITHFUL PERFORMANCE:** (modified Dec 2013) (see also 2.08)
Simultaneously, with delivery of the executed Contract, the Contractor will furnish a Surety Bond, or Bonds, as security for faithful performance, the payment of all persons performing labor on the project, and furnishing materials in connection with this Contract. The Surety on such Bond, or Bonds, will be a duly authorized surety company satisfactory to the Owner and meeting all of the following requirements:
- A. Licensed at the time of award by the State of Mississippi's Commissioner of Insurance for the purpose of providing surety. . http://www.mid.state.ms.us/licapp/search_main.aspx
 - B. Listed at the time of award in the Department of the Treasury's **Federal Register** as a company holding certificates of authority as acceptable sureties on Federal Bonds, commonly referred to as the Treasury List.
 - C. All Bonds shall be executed on the form provided in the Project Manual under Section 00600 entitled *Contract Bond*.
 - D. The Contract Bond shall be duly executed by the Bidder, a Surety licensed in Mississippi signed by a Mississippi Licensed Agent for said Surety approved by the Mississippi Insurance Department OR signed by the Surety AND countersigned by a Mississippi Licensed Agent for said Surety approved by the Mississippi Insurance Department with the name and address typed, or lettered legibly. (with embossed seal). http://www.mid.state.ms.us/licapp/search_main.aspx
 - E. All Bonds must be accompanied by an appropriate Power of Attorney dated same as Contract Bond.

PART 5 - BIDDER'S CHECKLIST

The following checklist is for the Bidder's assistance only. It is not inclusive and **is not a part of the bid documents**; therefore, this checklist does not have to be included with the Proposal Form when submitting a bid proposal.

5.01 PROPOSAL FORM: (only one original proposal form to be submitted) (also see 3.01 and 600.42 of Manual)
Base Bid

- ☐ Write in the amount of the base bid in words and numbers. The written word shall govern.

Alternates

- ☐ Write in each alternates amount in words and numbers. The written word shall govern.

Addenda

- ☐ Acknowledge the receipt of each addendum by writing in the number of the addendum.

Acceptance

- ☐ Proposal is signed by authorized person
☐ Name of Business - complete spelling of bidder's name and address - exact as recorded at the Secretary of State
[<http://www.sos.state.ms.us/busserv/corp/soskb/csearch.asp>] which should be the same as you applied for at the Mississippi
State Board of Contractors [<http://www.msdoc.us/Search2.CFM>] (see 2.07, 3.01, 5.01, proposal form)
☐ Legal address of the business listed above (at SOS and Contractor's Board)
☐ Correct Certificate of Responsibility Number(s) as it appears in the current Mississippi State Board of Contractors Roster

Certificate of Responsibility Number(s) on envelope (see below for on proposal form)

- ☐ Base Bid is under \$50,000 and no number is required
☐ Base Bid is under \$50,000 and the statement "bid does not exceed \$50,000" is on the outside of the sealed envelope
☐ Base Bid is over \$50,000 and number is required
☐ Joint Venture and *joint venture* number is required

OR ☐ Joint Venture participants' numbers are required

5.02 BID SECURITY:

- ☐ Included Bid Bond

OR ☐ Included Certified Check

5.03 POWER OF ATTORNEY:

- ☐ Included Power of Attorney

5.04 NON-RESIDENT BIDDER:

- ☐ Attached a Copy of Non-Resident Bidder's Preference Law

OR ☐ Attached a Statement

5.05 SUB-CONTRACTORS NAME Refer to 1.04 for responsiveness (modified Dec 2013)

- ☐ List ~~your~~ any Mechanical, Plumbing, and/or Electrical Sub-Contractors regardless of cost. * List name even for under \$50,000
* Fire Protection Sprinkler Contractors do not have to be listed
* If there is a separate HVAC/Plumbing Sub-Contractor, so notate as mentioned herein
* If Mechanical, Plumbing, and/or Electrical Sub-Contractor is performed by the General, be sure the General has a COR for said discipline
* If there is no Mechanical, Plumbing, and/or Electrical Sub-Contractor listed, then use of Sub-Contractor to perform such scope will not be permitted.

5.06 SUB-CONTRACTORS' COR NUMBER Refer to 1.04 for responsiveness (modified Dec 2013)

- ☐ * List Certificate of Responsibility Number for any listed Sub-Contractor over \$50,000.00
* If under \$50,000 – so notate on the COR line "under \$50,000" (or can still show COR#)

***** END OF SECTION *****

**PROPOSAL FORM
SECTION 00300**

To: Department of Marine Resources
1141 Bayview Avenue
Biloxi, MS 39530

Re: Project #1450-17-R-IFBD-00010
Project Title: Outdoor Classrooms for Grand Bay NERR
Location: Grand Bay National Estuarine Research Reserve, 6005 Bayou Heron Road, Moss Point, MS 39562

I propose to complete all work in accordance with the Project Manual and Drawings within two hundred forty (240) consecutive calendar days for the sum of:

BASE BID: (Write in the amount of the base bid in words and numbers. The written word shall govern.)

_____ Dollars (\$_____)

ALTERNATES: (Write in the amount of all of the alternates in words and numbers. The written word shall govern.)

Alternate #1 () Adds () Deducts

_____ Dollars (\$_____)

_____ Description _____

Alternate #2 () Adds () Deducts

_____ Dollars (\$_____)

_____ Description _____

Alternate #3 () Adds () Deducts

_____ Dollars (\$_____)

_____ Description _____

Alternate #4 () Adds () Deducts

_____ Dollars (\$_____)

_____ Description _____

Alternate #5 () Adds () Deducts

_____ Dollars (\$_____)

_____ Description _____

ADDENDA ACKNOWLEDGMENT:

No. _____ No. _____ No. _____
No. _____ No. _____ No. _____

ACCEPTANCE:

I certify that I am authorized to enter into a binding contract, if this Proposal is accepted.

Signature _____ Date _____

Name and Title _____

Name of Business _____

Complete spelling of bidder's name and address - **exact as recorded at the Secretary of State**

[<http://www.sos.state.ms.us/busserv/corp/soskb/csearch.asp>] which should be the same as you applied for at the

Mississippi State Board of Contractors [<http://www.msdoc.us/Search2.CFM>] (see 2.07, 3.01, 5.01) **PLEASE LOOK IT UP at**

SoS. SoS rules when the 2 are different.

Address _____ (mailing)

Address _____ (physical)

City/State/Zip Code _____ County _____

Phone _____ Fax _____ Email _____

■ **Bidder's Certificate of Responsibility Numbers(s):** _____

■ **MINORITY BUSINESS ENTERPRISE?** Yes _____ No _____ (to assist with Code 57-1-57)

■ **Attach copy of Non-Resident Bidder's Preference Law (5.04 of Bidder's Checklist)**

■ **Mechanical / Plumbing / Electrical Contractors:** (modified Dec 2013)

Regarding said Divisions of the Specifications of the BoB Standard Form of Agreement Between The Owner and The Contractor

List any Mechanical/Plumbing and/or Electrical Sub-Contractors that will perform work of this contract. COR must be included where sub-contract exceeds \$50,000.00. If no sub-contractor is listed, and such work is within scope of contract, bidder's own COR classification(s) must be sufficient to self-perform any such work. If no sub-contractor is listed, then use of sub-contractor to perform such scope will not be permitted. This is in accordance with 5.05 and 5.06 of the Bidder's Checklist revised below.

Mechanical Contractor: _____

Certificate of Responsibility No. _____

Plumbing Contractor: _____

Certificate of Responsibility No. _____

Electrical Contractor: _____

Certificate of Responsibility No. _____

■ **Mississippi Department of Agriculture & Commerce**
Bureau of Plant Industry

Landscape License Number _____ MS Code 69-19-1 - 69-19-15

↑Complete for prime landscaping projects

**STANDARD FORM OF AGREEMENT BETWEEN
THE OWNER AND THE CONTRACTOR
SECTION 00500**

This Agreement made the _____ day of _____, 20____ between the Owner,
Owner

created by _____ et seq., **Mississippi Code of 1972, Annotated**, and acting for the State of Mississippi;
and between the Contractor:

Business Name _____
Address _____
City/State/Zip _____ Fax: _____ Email: _____

The Contractor is a (check and complete one of the following):

_____ ☐ CORPORATION or ☐ LLC solely organized and existing under the laws of the State of
_____ and having its principal office in _____,

(City) (County) (State)

_____ PARTNERSHIP of the following (list all partners):

_____ SOLE PROPRIETORSHIP

For the following Project:

GS#

This Agreement entered into as of the day and year first written above:

OWNER: OWNER

CONTRACTOR:

By: _____
(Signature)

By: _____
(Signature)

(Name and Title)

(Name and Title)

APPROVED AS TO FORM:

By: _____
(Signature of Attorney)

THE OWNER AND THE CONTRACTOR AGREE AS SET FORTH IN PAGES ONE THROUGH THREE, ARTICLES ONE THROUGH FIVE, AS FOLLOWS:

Division 0

June 2011

ARTICLE 1: THE WORK AND CONTRACT DOCUMENTS
THE WORK

1.1.1 The Contractor will perform all the work required by the Contract Documents for the Project indicated above.

1.2 THE CONTRACT DOCUMENTS

1.2.1 The Contract Documents which constitute the entire Agreement between the Owner and the Contractor, are enumerated as follows:

1.2.2 Project Manual dated: 20 February 2017

BIDDING REQUIREMENTS

Advertisement for Bids

Instructions to Bidders

Proposal Form

STANDARD FORM OF AGREEMENT BETWEEN THE OWNER AND THE CONTRACTOR

CONTRACT BOND

POWER OF ATTORNEY

CERTIFICATE OF INSURANCE

CONDITIONS OF THE CONTRACT

General Conditions

Supplementary Conditions

Labor Requirements

Addenda

SPECIFICATIONS (check the specs listed on the contents and included in the manual)

☒ Division One: General Requirements

☒ Division One Supplements

☒ Division Two: Site Work

☒ Division Three: Concrete

☐ Division Four: Masonry

☒ Division Five: Metals

☒ Division Six: Wood and Plastics

☒ Division Seven: Thermal and Moisture Protection

☐ Division Eight: Doors and Windows

☒ Division Nine: Finishes

☐ Division Ten: Specialties

☐ Division Eleven: Equipment

☐ Division Twelve: Furnishings

☐ Division Thirteen: Special Construction

☐ Division Fourteen: Conveying Systems

☐ Division Fifteen: Mechanical

☐ Division Sixteen: Electrical

☐ Division Seventeen: Commissioning

1.2.3 Addenda

Addendum No. 1, dated _____

Addendum No. 2, dated _____

Addendum No. 3, dated _____

Addendum No. 4, dated _____

Addendum No. 5, dated _____

1.2.4 Drawings dated: 20 February 2017

Sheets No. 1 through 5

Sheets No. _____ through _____

Sheets No. _____ through _____

Sheets No. _____ through _____

Sheets No. _____ through _____

Sheets No. _____ through _____

Sheets No. S1.01 through S4.02

Sheets No. _____ through _____

Sheets No. _____ through _____

Sheets No. _____ through _____

Sheets No. _____ through _____

Sheets No. _____ through _____

1.2.5.1 Other documents, dated

Division 0

June 2011

ARTICLE 2: CONTRACT SUM

2.1 CONTRACT SUM

- 2.1.1 The Owner will pay the Contractor in current funds for the performance of the work, subject to additions and deductions by Change Order as provided in the Contract Documents, the Contract sum of _____ Dollars

(\$ _____). The Contract sum is determined as follows:

Base Bid		\$ _____
Modifications () Adds () Deducts		\$ _____
Negotiations		\$ _____
Alternate No. _____ () Adds () Deducts		\$ _____
Alternate No. _____ () Adds () Deducts		\$ _____
Alternate No. _____ () Adds () Deducts		\$ _____
Alternate No. _____ () Adds () Deducts		\$ _____
Alternate No. _____ () Adds () Deducts		\$ _____
Total Contract Sum		\$ _____

2.2 LIQUIDATED DAMAGES

- 2.2.1 The stipulated liquidated damages described in Paragraph 9.11 of the *Supplementary Conditions* are in the amount of Two Hundred and Fifty Dollars (\$250.00) for each calendar day.

ARTICLE 3: CONTRACT TIME

3.1 TIME

- 3.1.1 The work to be performed under this Contract shall be commenced upon the date stated in the *Notice to Proceed*. The work is to be substantially complete, subject to approved Change Orders, no later than One Hundred Eighty (180) calendar days from the date stated in the *Notice to Proceed*.

ARTICLE 4: PAYMENTS AND FINAL PAYMENTS

4.1 PROGRESS PAYMENTS

- 4.1.1 Based upon applications for payment submitted to the Professional by the Contractor and *Certificates for Payment* issued by the Professional, the Owner will make progress payments on account of the Contract sum to the Contractor as provided in the Contract Documents.

4.2 FINAL PAYMENT

- 4.2.1 Final payment constituting the entire balance of the Contract sum will be paid by the Owner to the Contractor when the work has been completed, the Contract fully performed and a final Certificate for Payment has been issued by the Professional and approved by the Owner.

ARTICLE 5: MISCELLANEOUS PROVISION

5.1 DEFINITION OF TERMS

- 5.1.1 Terms used in this Agreement which are defined in the Conditions of the Contract will have the meanings designated in those Conditions.

5.2 CONTRACTOR'S INTEREST IN AGREEMENT

- 5.2.1 The Contractor will not assign, sublet, or transfer the interest in this Contract agreement without the written consent of the Owner. The Owner and Contractor hereby agree to the full performance of the covenants contained herein.

5.3 PROFESSIONAL

- 5.3.1 The Professional assigned to this Project is as follows:
Name: unabridged Architecture PLLC, Allison and John Anderson Architects
443 Main Street, Bay St Louis, MS 39520
228.467.1149 allison@unarch.com

***** END OF SECTION *****

**CONTRACT BOND
SECTION 00600**

I. PREAMBLE

KNOW ALL MEN BY THESE PRESENTS: THAT _____,
Principal, a _____, residing at _____,
authorized to do business in the State of Mississippi
under the laws thereof, and _____, Surety, a corporation of the State of _____,
authorized to do business in the State of Mississippi under the laws thereof, are held and firmly
bound unto the Owner of the State of Mississippi, Obligee, hereinafter referred to as "Owner," for the use and benefit of the Owner and those
claimants and others set forth herein below and described in Sections 31-5-51 and 31-5-3, **Mississippi Code of 1972, Annotated**, as
amended, in the amount of _____ Dollars (\$_____), lawful
money of the United States, for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators,
successors and assigns, jointly and severally, firmly by these present.

WHEREAS, Principal has by written agreement dated _____, 20_____, entered into a Contract with
the Owner for the following:

as provided in said Contract and in accordance with the Contract Documents. All of the terms and provisions of the above mentioned
Contract, drawings, Project Manual, and addenda are by reference made a part hereof and fully incorporated herein, and are hereinafter
referred to as "the Contract." All of the terms and provisions of Sections 31-5-51, 31-5-3, supra, Section 31-5-53 of the **Mississippi Code of
1972, Annotated**, as amended, and all other code sections cited herein are also by reference made a part hereof and fully incorporated
herein.

II. PERFORMANCE BOND

NOW, THEREFORE, the condition of this Performance Bond is such that if Principal shall promptly and faithfully perform said Contract, then
this obligation shall be null and void; otherwise, it shall remain in full force and effect, subject however, to the following conditions:

Whenever the Owner has performed its obligation but the Principal has defaulted under the terms of the Contract, or any portion thereof,
and the Owner has declared the Principal to be in default, the Surety shall promptly:

1. Remedy the default, or
2. Complete the Contract in accordance with its terms and conditions, or
3. Procure the completion of the Contract in accordance with its terms and conditions.

Even if there should be a succession of defaults, the Surety is responsible for completion of the Contract. The Surety shall provide sufficient
funds to pay the cost of completion of the Contract in its entirety including other costs and damages for which the Surety may be liable
thereunder, less the balance of the Contract price. The term "balance of the Contract price," as used in this paragraph, shall mean the total
amount payable by Owner to Principal under the Contract and any Change Orders thereto, less the amount paid by Owner to Principal.

III. LABOR AND MATERIAL PAYMENT BOND

NOW, THEREFORE, the condition of this Labor and Material Payment Bond is such that if Principal shall promptly make payments to all
persons supplying labor or material used in the prosecution of the work under said Contract, then this obligation shall be null and void;
otherwise, it shall remain in full force and effect; however, the Owner shall not be liable for the payment of any costs or expenses of any suit
described in Subsection (2) of Section 31-5-51, supra.

IV. BOND FOR PAYMENT OF TAXES AND OTHER ASSESSMENTS

NOW THEREFORE, the condition of this Bond for Payment of Taxes and Other Assessments is such that if Principal shall promptly make payment of all taxes, licenses, assignments, contributions, damages, penalties, and interest thereon, when and as the same may lawfully be due the State of Mississippi, or any County, Municipality, Board, Department, Commission, or political subdivision thereof, by reason of and directly connected with the performance of said Contract or any part thereof as provided by Sections 27-65-1, 27-65-21, 27-67-1, and 31-5-3, **Mississippi Code 1972, Annotated**, or any other applicable statute or other authority, then this obligation shall be null and void; otherwise, it shall remain in full force and effect.

V. GENERAL CONDITIONS

The following conditions apply to all three (3) of the above-mentioned Bonds:

1. The Performance Bond is for an amount equal to the full amount of said Contract.
2. The Labor and Material Payment Bond is for an amount equal to the full amount of said Contract.
3. If any changes are made in the work, or any extensions of time are granted, or any increases in the total dollar amount of the Contract are made, such changes, extensions, increases, or other forbearance on the part of either the Owner or the Principal will not, in any way, release the Principal and Surety, or either of them, from their liability hereunder, or any portion thereof, notice to the Surety of any such change, extension, increase, or forbearance being expressly waived.
4. These Bonds are governed by and shall be construed in accordance with Mississippi law. Any inconsistency with these Bonds and any provision of Mississippi law shall be remedied by deleting the inconsistent portion of these Bonds and leaving the remaining consistent portions in full force and effect.

Signed and sealed this _____ day of _____, 20_____.

SURETY _____

Mississippi NAIC number: _____

By: _____
(Signature)

(Typed Name) Attorney-in-Fact (Title)

Surety Agent Mississippi License Number: _____

(Surety Address)

(Surety City/State/Zip/Phone)

COUNTERSIGNED: (if applicable)

MISSISSIPPI LICENSED AGENT COMPANY NAME

Mississippi NAIC number: _____

(Signature)

(Typed Name) Licensed Mississippi Agent (Title)

Countersignature Agent MS License Number: _____

(MS Licensed Agent Address)

(MS Licensed Agent City/State/Zip/Phone)

PRINCIPAL _____

By: _____
(Signature)

(Typed Name and Title)

(Address)

(City/State/Zip/Phone)

Surety Company, Surety Agent's Name, Address, etc. should be typed and with seal (preferably embossed seal) on Bond and P/A. The P/A should be for the Attorney-in-Fact with seal (preferably embossed seal).

The Contract Bond shall be duly executed by the Bidder AND a MS Licensed Agent said Surety approved by the MS Ins Dept
OR
signed by the Surety's Agent AND countersigned by a MS Licensed Agent for said Surety approved by the MS Ins Dept.

Countersignature can be the same as the Attorney-in-Fact when the Attorney-in-Fact is licensed in Mississippi. Countersignature will be different when the Attorney-in-Fact is "not" licensed in Mississippi. P/A will be for the Attorney-in-Fact.

Check the Surety Company AND the Surety Agent
AND/OR the Countersignature at MS Ins Dept web:
http://www.mid.ms.gov/licapp/search_main.aspx

Easier to locate Agent at MID when name agrees with MID licensed name.)

(Bond Agent MID or Code requirements are different from the Ins Cert Agent MID or Code requirements.)

**STANDARD CONSTRUCTION CONTRACT
CERTIFICATE OF INSURANCE**

SECTION 00650

This certificate of insurance neither affirmatively nor negatively amends, extends, or alters the coverage afforded by the policies below.

INSURED: (Contractor's Name & Address)				COMPANIES PROVIDING COVERAGE w/ MID Lic or NAIC #		
				A		
PROJECT: (Number, Name & Location)				B		
				C		
				D		
OWNER: Owner				E		
				F		
				G		
				Companies above must be approved by the MS Ins Dept at http://www.mid.ms.gov/licapp/search_main.aspx per Code & WComp at http://www.mwcc.ms.gov/		
Type Insurance	Co	Policy Number	Policy Period	Coverage and Minimum Amount		
General Liability Commercial General Liability				General Aggregate	\$ 1,000,000	
				Products Comp/Ops (Aggregate	\$ 1,000,000	
				Personal Injury (Per Occurrence)	\$ 500,000	
				BI & PD (Per Occurrence)	\$ 1,000,000	
				Fire Damage (Per Fire)	\$ 50,000	
				Medical Expense (Per Person)	\$ 5,000	
Owners/Contractors Protective Liability				General Aggregate	\$ 1,000,000	
				Per Occurrence	\$ 500,000	
Automobile Liability				Bodily Injury/Property Damage Combined Single Limit (Per Occurrence)	\$ 500,000	
				OR	Bodily Injury (Per Person)	\$ 250,000
					Bodily Injury (Per Accident)	\$ 500,000
					Property Damage (Per Occurrence)	\$ 100,000
* Excess Liability (Umbrella on projects over \$500,000)				Aggregate	\$ 1,000,000	
				Per Occurrence	\$ 1,000,000	
Workers' Compensation (As required by Statute) Employers' Liability				Accident (Per Occurrence)	\$ 100,000	
				Disease-Policy Limit	\$ 500,000	
				Disease-Per Employee	\$ 100,000	
Property Insurance (not required when project is demolition ONLY - required for ALL other projects including paving)				OR Builders' Risk Installation Floater	Must be equal to Value of Work	
Other						
<p>Certification: I certify that these policies (subject to their terms, conditions and exclusions) have been (1) issued to the Insured for the coverages and at least the amounts as indicated by companies licensed in Mississippi; (2) countersigned by a Mississippi Licensed Agent; and (3) endorsed to require the company to give thirty (30) days written notice to the Owner prior to cancellation or non-renewal of above.</p>						
Producing Agent: (Name, Address and Telephone)						
				(Signature) (Date)		
				(Name and Title of Authorized Representative) (typed)		
				Agent must be approved by the MS Ins Dept http://www.mid.ms.gov/licapp/search_main.aspx		

☐ Check if Mississippi Licensed Agent
OR Countersign by Mississippi Licensed Agent MID Lic #

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CERTIFICATE OF INSURANCE INSTRUCTIONS
SECTION 00650

1. The *Certificate of Insurance* is a tabulation of insurance required for this Project as specified in Article 11 entitled *Insurance and Bonds* in the General Conditions (AIA Document A201, Sixteenth Edition, 2007).
2. The *Certificate of Insurance* must be completed, certified by the original signature of a Mississippi Licensed Insurance Agent and/or countersignature, dated, and bound in each set of the Contract Documents. Insurance Companies providing coverage and Agent and/or Countersignature Agent must be approved by the Mississippi Insurance Department on their web at http://www.mid.ms.gov/licapp/search_main.aspx. (Agent does not have to be on the MID web “for providers necessarily” – but must be an approved Agent on MID web. Easier to locate Agent at MID when name agrees with MID licensed name.)
3. Indicate Insured, Project, Companies providing coverage, policy numbers and policy periods in the blanks as applicable.
4. If the "OWNERS/CONTRACTORS PROTECTIVE LIABILITY" insurance is part of the Commercial General Liability Insurance Policy, or included by endorsement, indicate the policy number and period of the CGL policy in the "OWNERS/CONTRACTORS PROTECTIVE LIABILITY" blank spaces.
5. Automobile Liability Insurance may be provided which covers Bodily Injury and Property Damage in one (1) Combined Single Limit, or may be provided with separate minimum limits as shown on the Certificate of Insurance and specified in Article 11 of the Supplementary Conditions. The person signing the Certificate of Insurance should show which option the Contractor has selected by marking out the coverage that is not provided under the policies indicated.
6. OTHER INSURANCE (if required) will be indicated by typing in the "OTHER" block and detailed in Article 11 of the Supplementary Conditions.
7. CERTIFICATION wording may not be changed without specific written approval from the Owner.
8. "Riders", Binders, TBA, TBD, or other unsolicited attachments, are not allowed as part of the *Certificate of Insurance* unless specifically requested in writing by the Owner, or specified as part of the requirements for this Project.
9. CAUTION: The *Certificate of Insurance* is intended to be used for all Projects. The Contractor must provide all insurance specified in the Contract Documents for this Project, whether indicated on this form, or not. The Contractor must verify all insurance has been provided as required.
10. In accepting the Insurance Certificate by Owner, it would be helpful if some indication is given when, and if, the Provider is a Surplus Line Carrier, a Broker, or Self Insured (because they may not be on the MID web list referenced herein). (The Owner will have to ask MID (or know) at some point.)
11. The Workers Comp insurance provider must be approved and show up on the Workers Comp web at [http://www.mwcc.state.ms.us / Services / Proof of Coverage Inquiry /](http://www.mwcc.state.ms.us/Services/Proof%20of%20Coverage%20Inquiry/) accept / etc. and at the last step – enter the “contractor’s name”.

Note: Regarding #2 and #11. At the MID web – you enter the Surety Company / Provider / Agent. At the MWWC web – you enter the Vendor’s name, then click on the policy number to see the MWWC Ins Provider.

***** END OF SECTION *****

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**GENERAL CONDITIONS
SECTION 00700**

PART 1 - GENERAL

1.01 DESCRIPTION

- A. **SCOPE:** The **General Conditions of the Contract for Construction**, AIA Document A201, Sixteenth Edition, 2007, Articles 1 through 15 inclusive, is a part of this Contract and is incorporated herein.
- B. **BIDDING COPY:** For the purpose of bidding, Contractors are presumed to be familiar with AIA Document A201, a copy of which may be obtained from the Professional, or examined in the Professional's office.

***** END OF SECTION *****

2007 SUPPLEMENTARY CONDITIONS

SECTION 00800

PART 1 – GENERAL

1.01 DESCRIPTION

- A. **Owner:** These supplements are necessary because the Owner is an agency, or political subdivision, of the State of Mississippi and occupies a different position from that of the usual Owner.
- B. **Document:** The following supplements modify, change, delete from, or add to the **General Conditions of the Contract**, AIA Document A201, Sixteenth Edition, 2007. When any Article of the **General Conditions** is modified, or deleted, by these *Supplementary Conditions*, the unaltered provisions of that Article, Paragraph, Subparagraph, or Clause will remain in effect.

Article 1 GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

- 1.1.1 **The Contract Documents:** Delete the last sentence of this Subparagraph and substitute the following sentence:

The Contract Documents include the Advertisement for Bids, Instructions to Bidders, Proposal Form, sample forms and all portions of addenda issued prior to execution of the Contract.

- 1.1.9 Add a new Subparagraph as follows:

COMMISSIONING AUTHORITY PROFESSIONAL

A professional independent of the project engineer or architect retained by the owner who manages a quality focused process for enhancing the delivery of the project. The process focuses upon verifying and documenting that the facility and all of its systems are planned, designed, installed, tested, operated, and maintained to meet the Owner's project requirements.

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

- 1.5.1 Add a new sentence at the end of this Subparagraph:

This Paragraph in no way supersedes the Owner's document rights set forth in the Agreement Between the Owner and the Professional.

- 1.5.3 Add a new Subparagraph as follows: (Added Sept-Dec 2013)

Transparency. In accordance with the Mississippi Accountability and Transparency Act of 2008, §27-104-151, et seq., of the Mississippi Code of 1972, as Amended, the American Accountability and Transparency Act of 2009 (P.L. 111-5), where applicable, and §31-7-13 of the Mississippi Code of 1972, as amended, where applicable, a fully executed copy of this agreement shall be posted to the State of Mississippi's accountability website at: <https://www.transparency.mississippi.gov>

Article 2
OWNER

2.1 GENERAL

2.1.1 Change this Subparagraph to read as follows:

The Owner, as used in these Documents, refers to the Owner, acting for and on behalf of the State of Mississippi and for the benefit of the Institution, Agency, or Department for which the Work under this Contract is being performed. The Owner is the entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner's representative, who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization, is the individual who signed

the Construction Contract for the Owner. Except as otherwise provided in Subparagraph 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

2.2.5 Change this Subparagraph to read as follows:

Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, such copies of Drawings and Project Manuals as are reasonably necessary, but in no instance to exceed twenty-five (25) copies, for the execution of the Work.

Article 3
CONTRACTOR

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

3.3.1 Change the last sentence to read as follows:

If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner and Architect shall be responsible for any resulting loss or damage.

3.4 LABOR AND MATERIALS

3.4.4 Modify the Subparagraph as follows: (Modified Sept-Dec 2013)

Employee Status Verification System *If applicable, the Contractor represents and warrants that it will ensure its compliance with the Mississippi Employment Protection Act, Section 71-11-1, et seq. of the Mississippi Code Annotated (Supp 2008), and will register and participate in the status verification system for all newly hired employees. The term "employee" as used herein means any person that is hired to perform work within the State of Mississippi. As used herein, "status verification system" means the Illegal Immigration Reform and Immigration Responsibility Act of 1996 that is operated by the United States Department of Homeland Security, also known as the E-Verify Program, or any other successor electronic verification system replacing the E-Verify Program. The Contractor agrees to maintain records of such compliance and, upon request of the State and approval of the Social Security Administration or Department of Homeland Security, where required, to provide a copy of each such verification to the State. The Contractor further represents and warrants that any person assigned to perform services hereunder meets the employment eligibility requirements of all immigration laws of the State of Mississippi. The Contractor understands and agrees that any breach of these warranties may subject the Contractor to the following: (a) termination of this Agreement and ineligibility for any state or public contract in Mississippi for up to three (3) years, with notice of such cancellation/termination being made public, or (b) the loss of any license, permit, certification or other document granted to the Contractor by an agency, department or governmental entity for the right to do business in Mississippi for up to one (1) year, or (c) both. In the event of such cancellation/termination, the Contractor would also be liable for any additional costs incurred by the State due to the contract cancellation or loss of license or permit.*

3.4.5 Add a new Subparagraph as follows: (Modified Sept-Dec 2013)

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3.4.6 Add a new Subparagraph as follows: (Modified Sept-Dec 2013)

In providing materials for the proper execution and completion of the Work, the Contractor shall comply with the provisions of Section 31-5-23 of the Mississippi Code of 1972, Annotated.

3.9 SUPERINTENDENT

3.9.2 Change the second line in this Subparagraph to read as follows:

The Architect shall, within a reasonable time, notify the Contractor in writing of any objection to the proposed superintendent.

3.15 CLEANING UP

3.15.2 Change this Subparagraph to read as follows:

If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the cost thereof shall be charged to the Contractor.

3.16 ACCESS TO WORK

Change this Paragraph to read as follows:

The Contractor shall provide the Owner, Architect, Commissioning Authority Professional, and their authorized representatives access to the Work in preparation and progress wherever located.

3.18 INDEMNIFICATION

3.18.3 Modify the Subparagraph as follows: (Modified Sept-Dec 2013)

Indemnification *To the fullest extent allowed by law, Contractor shall indemnify, defend, save and hold harmless, protect, and exonerate the State of Mississippi, its Commissioners, Board Members, officers, employees, agents, and representatives from and against all claims, demands, liabilities, suits, actions, damages, losses, and costs of every kind and nature whatsoever, including, without limitation, court costs, investigative fees and expenses, and attorneys' fees, arising out of or caused by Contractor's and/or its partners, principals, agents, employees, and/or subcontractors in the performance of or failure to perform this Agreement. In the State's sole discretion, Contractor may be allowed to control the defense of any such claim, suit, etc. In the event Contractor defends said claim, suit, etc., Contractor shall use legal counsel acceptable to the State; Contractor shall be solely liable for all reasonable costs and/or expenses associated with such defense and the State shall be entitled to participate in said defense. Contractor shall not settle any claim, suit, etc., without the State's concurrence, which the State shall not unreasonably withhold.*

Article 4
ARCHITECT

4.1 GENERAL

4.1.4 Add a new Subparagraph as follows:

The term "Architect," "Engineer," or "Professional" as used in these Documents refers to the Professional firm indicated in Paragraph 5.3.1 of the Standard Form of Agreement Between the Owner and the Contractor who has been directed by the Owner to design and inspect construction of this Project.

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4.2 ADMINISTRATION OF THE CONTRACT

4.2.1 Change the first line of this Subparagraph to read as follows:

The Architect will provide administration of the Contract as described in the Contract Documents, and will be the Owner's representative (1) during construction, (2) until the final payment is due and (3) with the Owner's concurrence, from time to time during the one year period for correction of Work described in Section 12.2.

Article 5 SUBCONTRACTORS

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

5.2.1 Change the first line of this Subparagraph to read as follows: (modified Jan 2015) (see also 600.55; Div 1-01010.1.01.F)

Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, prior to award of the Contract by the Owner, shall furnish in writing to the Owner through the Professional, the names, disciplines, and COR #'s of Sub-Contractors over Fifty Thousand Dollars (\$50,000.00) (as well as entities who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. Such list shall also include any Mechanical, Plumbing, or Electrical Sub-Contractor listed on Proposal Form regardless of amount.

Article 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

No supplementary conditions.

Article 7 CHANGES IN THE WORK

7.2 CHANGE ORDERS

7.2.2 Add a new Subparagraph as follows:

The maximum cost included in a Change Order for profit and overhead is limited to twenty percent (20%) of the total of the actual cost for materials, labor and subcontracts. Profit and overhead include: all taxes, fees, permits, insurance, bond, job superintendent, job and home office expense. All Subcontractors shall acquiesce to the same requirements when participating in a Change Order.

7.3 CONSTRUCTION CHANGE DIRECTIVES

7.3.9 Delete this Subparagraph in its entirety.

Article 8 TIME

8.1 DEFINITIONS

8.1.2 Change this Subparagraph to read as follows:

The date of commencement of the Work is the date established in the Notice to Proceed.

8.3 DELAYS AND EXTENSIONS OF TIME

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8.3.1 Change this Subparagraph to read as follows:

If the Contractor is delayed at any time in the commencement or progress of the Work by any act of neglect of the Owner or the Architect, or by any employee of either, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or any causes beyond the Contractor's control, or by any other causes which the Architect determines may justify the delay, then the Contract Time may be extended by Change Order for such reasonable time as the Architect may determine, subject to the Owner's approval. Any claim for loss or any delay occasioned by any separate Contractor, or Subcontractor, shall be settled between the Contractor and such other separate Contractor, or Subcontractors.

Article 9
PAYMENTS AND COMPLETION

9.2 SCHEDULE OF VALUES

Change this Paragraph to read as follows:

Where the Contract is based on a stipulated sum, the Contractor shall submit to the Architect, at least 10 days before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work, and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect or Owner, shall be used as a basis for reviewing the Contractor's Applications for Payment.

9.3 APPLICATIONS FOR PAYMENT

9.3.1 Add a new sentence to the end of this Subparagraph:

The form of Application for Payment will be AIA Document G702, Application and Certification for Payment, supported by AIA Document G703, Continuation Sheet, or a computer generated form containing similar data.

9.3.1.1 Delete this Subparagraph in its entirety.

9.3.1.3 Add a new Clause to Subparagraph 9.3.1 as follows: (see also Manual 700.28) (modified Sept-Dec 2013)

On any contract as described herein, of which the total amount is Two Hundred Fifty Thousand Dollars (\$250,000.00) or greater, or on any contract with a subcontractor, regardless of amount, five percent (5%) shall be retained until the Work is at least fifty percent (50%) complete, on schedule and satisfactory in the architect's and/or engineer's opinion, at which time fifty percent (50%) of the retainage held to date shall be returned, subject to consent of surety, to the prime contractor for distribution to the appropriate subcontractors and suppliers; provided, however, that future retainage shall be withheld at the rate of two and one-half percent (2 1/2%). When submitting request for reduction in retainage, the Contractor will include, with the application, a Consent of Surety to Reduction which is AIA Form G707A, and a Power of Attorney.

9.3.1.4 Add a new Clause to Subparagraph 9.3.1 as follows:

The Contractor must submit each month with this Application for Payment a separate letter stating that he is requesting an extension of time or that he had no need for an extension for that period of time. No payment on a monthly application will be considered due and payable until the letter is received. Complete justification such as weather reports or other pertinent correspondence must be included for each day's request for extension. A Contractor's letter, or statement, will not be considered as adequate justification. The receipt of this request and data by the Owner will not be considered as Owner approval in any way.

9.3.2.1 Add a new Clause to Subparagraph 9.3.2 as follows:

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Payment on materials stored at some location other than the building site, may be approved by the Architect and the Owner after the Contractor has submitted the following items:

- .1 An acceptable Lease Agreement between the General Contractor and the owner of the land, or building, where the materials are stored covering the specific area where the materials are located.
- .2 Consent of Surety, or other acceptable Bond, to cover the materials stored off-site.
- .3 All Perils Insurance coverage for the full value of the materials stored off-site.
- .4 A Bill of Sale from the Manufacturer to the General Contractor for the stored materials.
- .5 A complete list and inventory of materials manufactured, stored and delivered to the storage site and of materials removed from the storage site and delivered to the job site.
- .6 A review by the Architect of the materials stored off-site prior to release of payment.
- .7 Guarantee no storage costs, additional delivery fees, or subsequent costs to the Owner.

9.5 DECISIONS TO WITHHOLD CERTIFICATION

9.5.3 Delete this Subparagraph in its entirety.

9.6 PROGRESS PAYMENTS

9.6.2 Change the first line of this Subparagraph to read as follows:

The Contractor shall pay each Subcontractor, in accordance with Section 31-5-27 of the Mississippi Code 1972, Annotated, 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.

9.6.8 Add a new Subparagraph as follows:

The amount retained by the Contractor from each payment to each Subcontractor and material supplier will not exceed the percentage retained by the Owner from the Contractor.

9.6.8.1 Add a new Clause to Subparagraph 9.6.8 as follows:

The Contractors shall submit monthly certification, in accordance with Section 31-5-25 of the Mississippi Code 1972, Annotated, on Owner's "Affidavit Certifying Payment to All Subcontractors" form, to the project engineer or architect indicating payments to subcontractors on prior payment request. (attached as Exhibit "A" at the end of Division 0 Section 00800 herein)

9.6.9 Modify the Subparagraph as follows: (Modified Sept-Dec 2013; SAAS modified 092414)

The DFA agrees to make payment in accordance with Mississippi law on "Timely Payments for Purchases by Public Bodies", Section 31-7-301, et seq. of the Mississippi Code of 1972, as amended, which generally provides for payment of undisputed amounts within forty-five (45) days of receipt of the invoice. The State requires the Contractor to submit invoices electronically throughout the term of the agreement. Vendor invoices shall be submitted to the state agency using the processes and procedures identified by the State. Payments by state agencies using the statewide electronic payment and remittance vehicle shall be made and remittance information provided electronically as directed by the State. These payments shall be deposited into the bank account of the Contractor's choice. Contractor understands and agrees that the State is exempt from the payment of taxes. All payments shall be in United States currency. No payment, including final payment, shall be construed as acceptance of defective or incomplete work, and the Contractor shall remain responsible and liable for full performance.

9.7 FAILURE OF PAYMENT

Change this Paragraph to read as follows:

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The Contractor and the Owner shall be subject to the remedies as prescribed in Section 31-5-25 of the Mississippi Code 1972, Annotated.

9.8 SUBSTANTIAL COMPLETION

9.8.1 Add the following sentence to the end this Subparagraph to read as follows:

Commissioning requirements must be complete except for thermographs of electrical systems, trend log monitoring, seasonal testing, near-warranty end activities and verification of training sessions.

9.8.4 Change the first line this Subparagraph to read as follows:

When the Work or designated portion thereof is substantially complete and affirmed by the Owner, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate.

9.10 FINAL COMPLETION AND FINAL PAYMENT

9.10.1 Change this Subparagraph to read as follows:

When, in the opinion of the Contractor, the Work is ready for final inspection and acceptance by the Owner, the Contractor shall make such notice to the Architect in writing.

- 1. Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance by the Owner, the Architect will promptly inspect the Work and compile a list of deficiencies. If, in the Architect's judgment, the Work is not ready for inspection, another inspection will be scheduled.*
- 2. Once the Architect has made inspection and all deficiencies listed by the Architect have been corrected and the Architect determines the Work is ready for final inspection, the Architect will call for final inspection of the Project with the Owner for the purpose of determining whether the Work is acceptable under the Contract Documents.*
- 3. The final inspection shall be conducted in the presence of the Owner and a list of defects or discrepancies, if any, will be compiled into a punch list furnished to all parties.*
- 4. Once corrections of all punch list items have been confirmed by the Architect, the Architect will provide a letter recommending final acceptance of the Work to the Owner.*

9.10.2 Change this Subparagraph to read as follows:

Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) final application for payment, (2) consent of surety to final payment, (3) power of attorney, (4) Contractor's affidavit of release of liens, (5) Contractor's affidavit of payment of debts and claims, (6) Contractor's guarantee of work, (7) Project Record Documents and (8) certificates, warranties, guarantees, bonds or documents as called for in the individual sections of the Project Manual.

9.11 LIQUIDATED DAMAGES

9.11.1 Add a new Paragraph as follows:

Time being of the essence and a matter of material consideration thereof, a reasonable estimate in advance is established to cover losses incurred by the Owner if the project is not substantially complete on the date set forth in the Contract Documents. The Contractor and his Surety will be liable for and will pay the Owner the sums stipulated in Paragraph 2.2 of the Standard Form of Agreement Between the Owner and the Contractor as fixed and agreed as

liquidated damages for each calendar day of delay until the work is substantially complete unless circumstances dictate otherwise in the discretion of the Owner.

Article 10
PROTECTION OF PERSONS AND PROPERTY

10.2 SAFETY OF PERSONS AND PROPERTY

10.2.5 Change this Subparagraph to read as follows:

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 Clauses 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 for Clauses 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect 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 Paragraph 3.18.

10.3 HAZARDOUS MATERIALS

10.3.2 Delete this Subparagraph in its entirety.

10.3.3 Delete this Subparagraph in its entirety.

10.3.4 Delete this Subparagraph in its entirety.

10.3.5 Delete this Subparagraph in its entirety.

10.3.6 Delete this Subparagraph in its entirety.

Article 11
INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.4 Delete this Subparagraph in its entirety.

11.1.5 Add a new Subparagraph as follows; Modified 11.1.5 BI and PD on 030116 per Code 31-5-51(7) and 31-7-13(v)

The Contractor's limits of liability shall be written for not less than the following:

.1 GENERAL LIABILITY:

*Commercial General Liability
(Including XCU)*

<i>General Aggregate.....</i>	<i>\$ 1,000,000.00 Aggregate</i>
<i>Products & Completed Operations.....</i>	<i>\$ 1,000,000.00 Aggregate</i>
<i>Personal & Advertising Injury.....</i>	<i>\$ 500,000.00 Per Occurrence</i>
<i>Bodily Injury & Property Damage</i>	<i>\$ 1,000,000.00 Per Occurrence</i>
<i>Fire Damage Liability</i>	<i>\$ 50,000.00 Per Occurrence</i>

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Medical Expense	\$ 5,000.00 Per Person
.2 OWNERS & CONTRACTORS PROTECTIVE LIABILITY:	
Bodily Injury & Property Damage	\$ 1,000,000.00 Aggregate
Bodily Injury & Property Damage	\$ 500,000.00 Per Occurrence
.3 AUTOMOBILE LIABILITY:	
(Owned, Non-owned & Hired Vehicles)	
Contractor Insurance Option Number 1:	
Bodily Injury & Property Damage	\$ 500,000.00 Per Occurrence
(Combined Single Limit)	
Contractor Insurance Option Number 2:	
Bodily Injury	\$ 250,000.00 Per Person
Bodily Injury	\$ 500,000.00 Per Accident
Property Damage.....	\$ 100,000.00 Per Occurrence
.4 EXCESS LIABILITY:	
(Umbrella on projects over \$500,000)	
Bodily Injury & Property Damage	\$ 1,000,000.00 Aggregate
(Combined Single Limit)	
.5 WORKERS' COMPENSATION:	
(As required by Statute)	
EMPLOYERS' LIABILITY:	
Accident.....	\$ 100,000.00 Per Occurrence
Disease	\$ 500,000.00 Policy Limit
Disease	\$ 100,000.00 Per Employee
.6 PROPERTY INSURANCE:	
Builder's Risk.....	\$ Equal to Value of Work
or	
Installation Floater.....	\$ Equal to Value of Work

11.1.6 Add a new Subparagraph as follows:

Furnish one (1) copy of the Standard Construction Contract Certificate of Insurance Form for each copy of the Standard Form of Agreement Between Owner and Contractor specifically setting forth evidence of all coverage required by Subparagraphs 11.1.1, 11.1.2 and 11.1.3. Furnish to the Owner copies of any endorsements that are subsequently issued amending limits of coverage.

11.1.7 Add a new Subparagraph as follows:

If the coverages are provided on a claims-made basis, the policy date or retroactive date shall predate the Contract; the termination date, or the policy, or applicable extended reporting period shall be no earlier than the termination date of coverages required to be maintained after final payment.

11.2 OWNER'S LIABILITY INSURANCE

Delete this Paragraph in its entirety and substitute the following:

The Contractor shall purchase and maintain such insurance as will protect the Owner from his contingent liability to others for damages because of bodily injury, including death, and property damage, which may arise from operations

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*under this Contract and other liability for damages which the Contractor is required to insure under any provision of this Contract. Certificate of this insurance will be filed with the Owner and will be the same limits set forth in 11.1.*5.*

11.3 PROPERTY INSURANCE (BUILDER'S RISK OR INSTALLATION FLOATER)

11.3.1 Change the first line in this Subparagraph to read as follows:

The Contractor shall purchase....

11.3.1.2 Delete this Clause under Subparagraph 11.3.1 in its entirety.

11.3.1.3 Change the following Clause in this Subparagraph to read as follows:

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

11.3.2 Delete this Subparagraph in its entirety.

11.3.3 Delete this Subparagraph in its entirety.

11.3.4 Delete this Subparagraph in its entirety.

11.3.5 Delete this Subparagraph in its entirety.

11.3.6 Delete this Subparagraph in its entirety.

11.3.10 Change this Subparagraph to read as follows:

The Owner as fiduciary shall have power to adjust and settle a loss with Insurers unless one of the parties in interest shall object in writing within five (5) days after occurrence of loss.

Article 12

UNCOVERING AND CORRECTION OF WORK

No supplementary conditions.

Article 13

MISCELLANEOUS PROVISIONS

13.1 GOVERNING LAW

Change this Paragraph to read as follows:

The Contract shall be governed by the laws of the State of Mississippi.

13.5 TESTS AND INSPECTIONS

13.5.1 Change the third line of this Subparagraph by adding “and Commissioning Authority Professional” after each instance of the word “Architect”.

13.5.3 Change this Subparagraph by inserting “and the Commissioning Authority Professional’s” after the word “Architect”.

13.5.5 Change this Subparagraph by adding “and/or the Commissioning Authority Professional” after each instance of the word “Architect”.

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13.7 Change this Paragraph title and contents to read as follows: (modified Sept-Dec 2013)

13.7 COMMENCEMENT OF STATUTORY LIMITATION PERIOD

13.7.1 *The Owner and Contractor shall commence all claims and causes of action within the time period specified by applicable state law.*

Article 14

TERMINATION OR SUSPENSION OF THE CONTRACT

No supplementary conditions.

Article 15

CLAIMS AND DISPUTES

15.2 INITIAL DECISION

15.2.1 Change this Subparagraph to read as follows:

Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker. An initial decision by the Initial Decision Maker shall be required as a condition precedent to arbitration or litigation of all Claims between the Contractor and Owner arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered by the Initial Decision Maker. The Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

15.2.5 Change the last line of this Subparagraph to read as follows:

The initial decision shall be final and binding on the parties but subject to arbitration or litigation.

15.2.6 Delete this Subparagraph in its entirety.

15.2.6.1 Delete this Clause in its entirety.

15.3 MEDIATION

15.3.1 Delete this Subparagraph in its entirety.

15.3.2 Delete this Subparagraph in its entirety.

15.3.3 Delete this Subparagraph in its entirety.

15.4 ARBITRATION

15.4.1 Delete this Subparagraph in its entirety.

15.4.1.1 Delete this Clause in its entirety.

15.4.1.2 Delete this Clause in its entirety.

15.4.2 Delete this Subparagraph in its entirety.

15.4.3 Delete this Subparagraph in its entirety.

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15.4.4 Delete this Subparagraph in its entirety.

15.5 Add a new Paragraph as follows:

ARBITRATION PROCEDURES FOR THE OWNER

All matters of dispute arising out of any agreement with the Owner for planning, design, engineering, construction, erection, repair, or alteration of any building, structure, fixture, road, highway, utility or any part thereof, or any agreement with the Owner for architectural, engineering, surveying, planning, and related professional services which provides for mediation or arbitration, shall comply with the following course for resolution. No arbitration hearing shall be granted on any claim in excess of One Hundred Thousand Dollars (\$100,000.00).

15.5.1 Add a new Subparagraph as follows:

CONDITIONS PRECEDENT TO ARBITRATION

- .1 The aggrieved party must first notify opposing party in writing in detail of the matter(s) in dispute the amount involved and the remedy sought. Such writing shall include copies of any documents, writings, plans, or other matter pertinent to the resolution of the dispute. The Head of the Owner's Agency and a principal of the opposing party shall be the proper parties for such notice and shall be active parties in any subsequent dispute resolution.*
- .2 If the dispute cannot be satisfactorily resolved, within thirty (30) days of the complaint being rejected in writing by either party, notice by certified mail shall be given to the Deputy Director of the Owner. A copy of the notice shall be sent by certified mail to the opposing party. Such notice shall be in writing setting forth in detail the matter(s) in dispute, the amount involved, the remedy sought and state that informal resolution between the parties cannot be reached. Such writing shall include copies of any documents, writings, plans, or other matter pertinent to the resolution of the dispute. Opposing party shall have the opportunity to set forth in writing a rebuttal with pertinent documents attached. At the sole discretion of the Deputy Director, oral testimony may be had on the matter.*

15.5.2 Add a new Subparagraph as follows:

REQUESTS FOR ARBITRATION: *Within thirty (30) days of a claim being rejected in writing by the Deputy Director of the Owner, either party may request arbitration. Notices for requests for arbitration shall be made in writing to the Head of the Owner's Agency. Such notice shall set forth in detail the matter(s) in dispute, the amount involved, and the remedy sought. A copy of the request shall be mailed to the opposite party. The party requesting arbitration must deposit the sum of two hundred (\$200.00) with its request as a deposit against costs incurred by the arbitrators. Each party will be notified in writing in any manner provided by law of certified mail not less than twenty (20) days before the hearing of the date, time and place for the hearing. Appearance at the hearing waives a party's right to notice.*

15.5.3 Add a new Subparagraph as follows:

SELECTION OF ARBITRATORS: *Upon request for arbitration, a panel of three (3) arbitrators shall be chosen. One (1) member shall be appointed by the Head of the Owner's Agency. One (1) member shall be appointed by the executive director of a professional or trade association which represents interests similar to that of the non-state party. The third member shall be appointed by the first two.*

15.5.4 Add a new Subparagraph as follows:

HEARINGS: *All hearings shall be open to the public. All hearings will be held in Jackson, Mississippi, unless another location is mutually agreed to by the parties. The hearings shall be conducted as prescribed by **Mississippi Code 1972, Annotated**, Sections 11-15-113, 11-15-115, and 11-15-117. A full and complete record of all proceedings shall be taken by a certified court reporter. The scheduling and cost of retaining the court reporter shall be the responsibility of the party requesting arbitration. The costs of transcription of the record shall be the responsibility of*

the party requesting such transcript. No arbitration hearing shall be held without a certified court reporter. Deliberations of the arbitrators shall not be part of the record.

15.5.5 Add a new Subparagraph as follows:

AWARDS: *Awards shall be made in writing and signed by the arbitrators joining in the award. A copy of the award shall be delivered to the parties by certified mail.*

15.5.6 Add a new Subparagraph as follows:

FEES AND EXPENSES: *Reasonable fees and expenses, excluding counsel fees, incurred in the conduct of the arbitration shall be at the discretion of the Arbitrator except each party shall bear its own attorney's fees and costs of expert witnesses.*

15.5.7 Add a new Subparagraph as follows:

MODIFICATIONS, CONFIRMATIONS, AND APPEALS: *All modifications, confirmations and appeals shall be as prescribed by Mississippi Code 1972, Annotated, Section 11-15-123 et seq. All awards shall be reduced to judgment and satisfied in the same manner other judgments against the State are satisfied.*

15.5.8 Add a new Subparagraph as follows:

SECRETARY FOR THE ARBITRATORS: *All notices, requests, or other correspondence intended for the arbitrators shall be sent to the Head of the Owner's Agency.*

AFFIDAVIT CERTIFYING PAYMENT TO ALL SUBCONTRACTORS

I acknowledge that, pursuant to Miss. Code Ann. §31-5-25 and H.B. 1562, Laws of 2002, that I am required to submit monthly certification indicating payments to subcontractors on prior payment requests. I, the undersigned Contractor, do hereby certify that I have paid the following amounts to subcontractors for Work which has been performed and incorporated into previous Applications for Payment which were issued and payment received from the Owner on the project listed below. I understand that this document must be submitted on a monthly basis after the submittal, approval and payment of Application for Payment #1. I understand that the Owner reserves the right to require me, the undersigned, to provide verification of payment and/ or additional information.

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Section 00800 SUPPLEMENTARY CONDITIONS

Article 9.6 Progress Payments

Article 9.6.8.1

Pursuant to Code §31-5-25 and HB1562, Laws of 2002

...Contractors shall submit monthly certification to the project engineer or architect indicating payments to subcontractors on prior payment request. . . .

Project Name and Number: _____

Using Agency: _____

Subcontractor: _____ Amount: \$ _____

Subcontractor: _____ Amount: \$ _____

Subcontractor: _____ Amount: \$ _____

Subcontractor: _____ Amount: \$ _____

Subcontractor: _____ Amount: \$ _____

Subcontractor: _____ Amount: \$ _____

Subcontractor: _____ Amount: \$ _____

Subcontractor: _____ Amount: \$ _____

Subcontractor: _____ Amount: \$ _____

Subcontractor: _____ Amount: \$ _____

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Affidavit Certifying Payment Form

Subcontractor: _____ Amount: \$ _____
Subcontractor: _____ Amount: \$ _____
Subcontractor: _____ Amount: \$ _____
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Subcontractor: _____ Amount: \$ _____
Subcontractor: _____ Amount: \$ _____
Subcontractor: _____ Amount: \$ _____

(Attach additional list of subcontractors and amounts, if necessary)

Contractor Name and Title: _____

Contractor Certificate of Responsibility Number: _____

Contractor Signature: _____ Date: _____

STATE OF MISSISSIPPI

COUNTY OF _____

SWORN TO AND SUBSCRIBED BEFORE ME, the undersigned notary public,
this the _____ day of _____, 20____.

NOTARY PUBLIC

My Commission Expires:

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LABOR REQUIREMENTS

SECTION 00820

PART 1 - EQUAL OPPORTUNITY

1.01 GENERAL

The Contractor will maintain policies of employment as follows:

- A. The Contractor and all Subcontractors will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin or age. The Contractor will take affirmative action to insure that applicants are employed and that employees are treated during employment without regard to their race, religion, color, sex, national origin, or age. Such action will include, but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of non-discrimination.
- B. The Contractor and all Subcontractors will, in all solicitations or advertisements for employees placed by them or on their behalf, state that all qualified applicants receive consideration for employment without regard to race, religion, color, sex, national origin or age.

PART 2 – FEDERAL REQUIREMENTS

2.01 APPLICABILITY

When project funding includes Federal funds, the applicable Federal Labor Standards Provisions will be included herein, to which the Contractor, and all Subcontractors, shall be subject to. Where no such pages are included, then no special provisions shall apply.

PART 3 - WAGE RATES

3.01 GENERAL

When project funding includes Federal funds, the applicable Federal Government Wage Determinations will be included herein, to which the Contractor, and all Subcontractors, shall be subject to. Where no such pages are included, then no special wages shall apply.

ADDENDA

SECTION 00900

1.01 ADDENDA

Any Addendum issued on this Project will be included in Section 00900 and become a part of the *Standard Form of Agreement*.

**SUMMARY OF WORK
SECTION 01010**

1.01 WORK COVERED BY CONTRACT DOCUMENTS

- A. **Work Covered:** Work covered by the Contract Documents is as shown in drawings and described in words in the Project Manual. The Project Title and location is indicated on the first page of this Project Manual.
- B. **Start of Work:** Work shall be started immediately upon issuance of a *Notice to Proceed*. Prior to this, all Contracts and beginning documents will have been executed and insurance in force.
- C. **Time of Completion:** The completion of this Work is to be on, or before, the time indicated in the *Standard Form of Agreement Between the Owner and the Contractor*.
- D. **Contractor's Duties:**
1. Except as specifically noted, provide and pay for:
 - a. Labor, materials and equipment.
 - b. Tools, construction equipment and machinery.
 - c. Water, heat and utilities required for construction.
 - d. Other facilities and services necessary for proper execution and completion of the Work.
 2. Pay legally required sales, consumer, use, payroll, privilege and other taxes.
 3. Secure and pay for, as necessary for proper execution and completion of work, and as applicable at the time of the receipt of the bids:
 - a. Permits.
 - b. Government fees.
 - c. Licenses.
 4. Give required notices.
 5. Comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of work.
 6. Promptly submit written notice to Professional of observed variance of Contract Documents from legal requirements. It is not the Contractor's responsibility to make certain that drawings and specifications comply with codes and regulations. Appropriate modifications to Contract Documents will adjust necessary changes. Assume responsibility for work known to be contrary to such requirements, without notice.
 7. Enforce strict discipline and good order among employees. Do not employ or work unfit persons, or persons, not skilled in assigned task.
 8. Provide a written safety plan.
- E. **Hazardous Materials:** The Prime General Contractor is responsible for the removal and disposal of any hazardous materials encountered in the performance of the Contract requirements. Hazardous Containing Materials [HCM] include, but are not limited to, Asbestos and Lead Paint and should be identified and removed as a part of the Contract. The absence of details does not relieve the Prime General Contractor from the responsibility of removal and disposal; but, a Change Order could be executed in the absence of identified HCM in the documents.
- F. **Subcontractor's List:** The Prime General Contractor will submit to the Owner a list of all Subcontractors, including disciplines and COR #'s, over Fifty Thousand Dollars (\$50,000.00) to be used on the Project prior to contract award by the Owner. Any Sub-Contractor listed must be acceptable to the Owner. Additionally, include any Mechanical, Plumbing, or Electrical Sub-Contractor listed on Proposal Form regardless of amount. (Modified Jan 2015)
The Prime General Contractor will submit to the Owner within seven (7) days from the Notice to Proceed, a completed *Minority Tracking Form* (attached as Exhibit "A" at the end of Division 1 Section 01900) outlining the use of minority subcontractors that will be used on the project.
- G. **Coordination:** The Prime General Contractor is responsible for the coordination of the total project. All other Prime Contractors and all Subcontractors will cooperate with the Prime General Contractor so as to facilitate the general progress of the Work. Each trade shall afford all other trades every reasonable opportunity for the installation of their work. Refer to Section 01041 entitled *Project Coordination*.

1.02 **CONTRACTS**

- A. **Contracts:** Construct work under a single Prime General Contract. Refer to Section 00500 entitled *Standard Form of Agreement Between the Owner and the Contractor*.

1.03 **WORK BY OTHERS**

Work by Others shall be described in each appropriate Project Manual section and noted on the Drawings.

1.04 **OWNER-FURNISHED PRODUCTS**

- A. **Products Furnished By Owner:** Products furnished by Owner shall be described in each appropriate Project Manual section and noted on the Drawings.
- B. **Products:** Delivered and unloaded at site.
- C. **Owner's Duties:**
1. Schedule delivery date with Supplier in accordance with construction schedule.
 2. Obtain installation drawings and instructions.
 3. Submit claims for transportation damages.
 4. Arrange Guarantees, Warranties, etc..
- D. **Contractor's Duties:**
1. Designate required delivery date for each product in construction schedule.
 2. Promptly inspect delivered products, report missing, damaged, or defective items.
 3. Handle at site, including uncrating and storage.
 4. Protect from exposure to elements and from damage.
 5. Repair or replace damaged items resulting from Contractor's operations.
 6. Install and make final connections.

1.05 **CONTRACTOR'S USE OF PREMISES**

- A. Confine operations at site to areas permitted by:
1. Law.
 2. Ordinances.
 3. Permits.
 4. Contract Documents.
 5. Owner.
- B. Do not unreasonably encumber site with materials or equipment.
- C. Do not load structure with weight that will endanger structure.
- D. Assume full responsibility for protection and safekeeping of products stored on premises.
- E. Move any stored products which interfere with operations of Owner or other Contractors.
- F. Obtain and pay for use of additional storage or work areas needed for operations.
- G. Limit use of site for work and storage to the area indicated in the drawings.

1.06 **SUMMARY OF WORK SUPPLEMENT**

- A. Refer to Section 01900 entitled *Division One Supplement* for Project specific summary of work requirements.

**ALLOWANCES
SECTION 01020**

1.01 DESCRIPTION

- A. **Related Work Specified Elsewhere:** Sections of Specifications as listed under Schedule of Allowances.
- B. **Allowances for Products:**
1. Purchase products under each allowance as directed by the Professional.
 2. Amount of each allowance includes:
 - a. Net cost of product.
 - b. Delivery and unloading at site.
 - c. Applicable taxes.
 3. In addition to amounts of allowances, include in bid, for inclusion in Contract sum, Contractor's costs for:
 - a. Handling at site, including uncrating and storage.
 - b. Protection from elements and damage.
 - c. Labor, installation and finishing.
 - d. Other expenses required to complete installation.
 - e. Overhead and profit.
- C. **Selection of Products:**
1. **Architect's Duties:** Consult with Contractor in consideration of products and Suppliers; make selections, designate products to be used; and, notify Contractor in writing.
 2. **Contractor's Duties:** Assist Professional in determining qualified Suppliers; obtain proposals from Suppliers when requested by the Professional; and, make appropriate recommendations for consideration of the Professional. Upon notification of selection, enter into Purchase Agreement with designated Supplier.
- D. **Delivery:** The Contractor is responsible for arranging all delivery and unloading and should promptly inspect products for damage or defects and submit claims for transportation damage.
- E. **Installation:** Comply with requirements of referenced specification section.
- F. **Adjustment of Costs:** Should actual purchase cost be more, or less, than the specified allowance amount, the Contract Sum will be adjusted by Change Order equal to the amount of the difference.

1.02 SCHEDULE OF ALLOWANCES

- A. Refer to Section 01900 entitled *Division One Supplement* for Project specific Schedule of Allowances.

**SCHEDULE OF VALUES
SECTION 01025**

1.01 DESCRIPTION

- A. **Scope:** Submit a *Schedule of Values* to the Professional at least ten (10) days prior to submitting the first Application for Payment. Upon the Professional's request, the Contractor will provide supportive data substantiating their correctness. Use *Schedule of Values* only as basis for Contractor's Application for Payment.
- B. **Form of Submittal:** Submit Schedule of Values on AIA Document G703, or computer generated form containing similar style, using Table of Contents of these Specifications as basis for format for listing costs of work for sections under Divisions 2-16. Identify each line item with number and title as listed in Table of Contents in these Specifications.

-
- C. **Preparing Schedule of Values:**
1. Itemize separate line item cost for each of the following general cost items: Performance and Payment Bonds, field supervision and layout, temporary facilities and controls.
 2. Itemize separate line item cost for work required by each Section of these Specifications. Break down installed cost with overhead and profit.
 3. For each line item which has installed value of more than \$20,000, break down costs to list major products for operations under each item, rounding figures to nearest dollar. Make sum of total costs of all items listed in Schedule equal to total Contract sum.
- D. **Preparing Schedule of Unit Material Values:**
1. Submit separate Schedule of unit prices for materials to be stored on which progress payments will be made. Make form of submittal parallel to Schedule of Values with each line item identified same as line item in Schedule of Values. Include in unit prices only: cost of material, delivery, unloading at site, and sales tax.
 2. Make sure unit prices multiplied by quantities equal material cost of that item in Schedule of Values.
- E. **Review and Resubmittal:** After Professional's review, if requested, revise and resubmit Schedule of Values in same manner.

**APPLICATIONS FOR PAYMENT
SECTION 01027**

1.01 SCOPE

- A. This Section describes procedures for preparing and submitting Applications for Payment by the Contractor.

1.02 APPLICATIONS FOR PAYMENT

- A. **Format:**
1. Applications for Payments will be prepared on AIA forms G702 - *Application and Certificate for Payment* and G703 - *Continuation Sheet*; or, a computer generated form containing similar data may be used.
- B. **Preparation of Application:**
1. Present required information in typewritten form
 2. Execute certification by signature of authorized officer
 3. 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.
 4. List each authorized Change Order as an extension on continuation sheet, listing Change Order number and dollar amount as for an original Item of Work.
 5. Prepare Application for Final Payment as specified in Section 01700 entitled *Contract Closeout*.
- C. **Submittal Procedures**
1. Submit original and one (1) copy of each Application for Payment
 2. Submit an updated construction schedule with each Application for Payment as described in Section 01310 entitled *Progress Schedule* or Section 01311 entitled *Network Analysis Schedules*.
 3. Submit requests for payment at intervals agreed upon by the Professional, Owner and Contractor.
 4. Submit requests to the Professional at agreed upon times, or as may be directed otherwise.
- D. **Substantiating Data:**
1. Submit data justifying dollar amounts in question when such information is needed.
 2. Provide one (1) copy of the data with a cover letter for each submittal.
 3. Indicate the Application number, date and line item number and description.

**CHANGE ORDER PROCEDURES
SECTION 01028**

1.01 SCOPE

- A. This Section describes the procedures for processing Change Orders by the Professional and the Contractor.

1.02 CHANGE ORDER PROCEDURES

- A. **Change Proposed by Professional:** The Professional may issue a Proposal Request to the Contractor which includes a detailed description of a proposed change with supplementary or revised Drawings and Specifications and a change in Contract Time for executing the change. The Contractor will prepare and submit an estimate within ten (10) days.
- B. **Change Proposed by Contractor:** The Contractor may propose a change by submitting a request for change to the Professional, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on Work by separate or other Contractors. Document any requested substitutions in accordance with Section 01630 entitled *Substitutions and Product Options*.
- C. **Contractor's Documentation:**
1. Maintain detailed records of Work completed on a time and material basis. Provide full information required for evaluation of proposed changes, and substantiate costs of changes in the Work.
 2. Document each quotation for a change in cost or time with sufficient data allowing evaluation of the quotation.
 3. On request, provide additional data to support computations:
 - 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
 4. Support each claim for additional costs, and for Work completed on a time and material basis, with additional information:
 - a. Origin and date of claim
 - b. Dates and times work was performed and by whom
 - c. Time records and wage rates paid
 - d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
- D. **Construction Change Directive:** The Professional may issue a document, approved by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. The document will describe changes in the Work, and will designate method of determining any change in Contract Sum or Contract Time. The change in Work will be promptly executed.
- E. **Format:** The Professional will prepare five (5) originals of the Change Order using the Owner's *Change Order Form*. (see also 700.20)
- F. **Types of Change Orders:**
1. **Stipulated Sum Change Order:** Based on Proposal Request and Contractor's fixed price quotation, or Contractor's request for a Change Order as approved by the Professional.
 2. **Unit Price Change Order:** For pre-determined unit prices and quantities, the Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units of work which are not pre-determined, execute Work under a Construction Change Directive. Changes in Contract Sum or Contract Time will be computed as specified for Time and Material Change Order.

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3. **Time and Material Change Order:** Submit itemized account and supporting data after completion of change, within time limits indicated in the *Standard Form of Agreement Between the Owner and the Contractor*. The Professional will determine the change allowable in Contract Sum and Contract Time as provided in the Contract Documents. The Contractor shall maintain detailed records of Work accomplished on Time and Material basis and shall provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.
- G. **Execution of Change Order:** The Professional will issue Change Orders for signatures of parties as provided in the *Standard Form of Agreement Between the Owner and the Contractor*. Final execution of all Change Orders requires approval by the Owner.
- H. **Correlation of Contractor Submittals:** The Contract shall promptly revise *Schedule of Values* and the *Application for Payment* forms to record each authorized Change Order as a separate line item and adjust the Contract Sum. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust time for other items of Work affected by the change and resubmit. Promptly enter changes in Project Record Documents.

**ALTERNATES
SECTION 01030**

1.01 DESCRIPTION

- A. **Scope:** This section describes the changes to be made under each alternate.
- B. **General:** The referenced Specification sections contain the pertinent requirements for materials and methods to achieve the work described herein. Coordinate related work and modify surrounding work, as required, to complete the Project under each alternate designated in the Contract.

1.02 DESCRIPTION OF ALTERNATES

- A. Refer to Section 01900 entitled *Division One Supplement* for Project specific description of project Alternates.

**PROJECT COORDINATION
SECTION 01041**

1.01 DESCRIPTION

- A. **Scope:** To set forth procedures, conditions and responsibility for coordination of the total project.
- B. **Project Coordinator:** The General Contractor will designate one (1) individual as Project Coordinator or Superintendent, as referred to in the General Conditions. Prior to beginning the Work, the name and qualifications will be submitted, in writing, to the Professional. Upon the approval of the Professional and the Owner, the Project Coordinator will remain until the Project is completed and cannot be removed during construction without the written consent of the Owner and the Professional.

1.02 DUTIES OF PROJECT COORDINATOR

- A. **General:**
1. **Coordination:** Coordinate the work of all Subcontractors and Material Suppliers.
 2. **Supervision:** Supervise the activities of every phase of work taking place on the Project.
 3. **Mechanical/Electrical:** Take special care to coordinate and supervise the work of the plumbing, heating and cooling and electrical Subcontractors.
 4. **Communication:** Establish lines of authority and communication at the job site.
 5. **Location:** The Project Coordinator must be present on the job all of the time.
 6. **Permits:** Assist in obtaining building and special permits required for construction.

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- B. **Interpretations of Contract Documents:**
 - 1. **Consultation:** Consult with Architects and Engineers to obtain interpretations.
 - 2. **Assistance:** Assist in resolution of any questions.
 - 3. **Transmission:** Transmit written interpretations to concerned parties.
 - C. **Cessation of Work:** Stop all work not in accordance with the requirements of the Contract Documents.
 - D. **Division One:** Coordinate and assist in the preparation of all requirements of Division One and specifically as follows:
 - 1. **Cutting and Patching:** Supervise and control all cutting and patching of other trades' work.
 - 2. **Project Meetings:** Schedule and preside at all project meetings.
 - 3. **Construction Schedules:** Prepare and submit all construction schedules; supervise work to monitor compliance with schedules.
 - 4. **Shop Drawings, Product Data and Samples:** Administer the processing of all submittals required by the Project Manual.
 - 5. **Schedule of Values:** Assist in preparation and be knowledgeable of each entry in the Schedule of Values.
 - 6. **Testing:** Coordinate all required testing.
 - 7. **Temporary Facilities and Controls:** Allocate, maintain and monitor all temporary facilities.
 - 8. **Substitutions and Product Options:** Administer the processing of all substitutions.
 - 9. **Project Closeout:** Conduct final inspections and assist in collection and preparation of closeout documents.
 - 10. **Cleaning:** Direct and execute a continuing cleaning program throughout construction, requiring each trade to dispose their own debris.
 - 11. **Project Record Documents:** Maintain up-to-date project record documents.
 - 12. **Safety Measures:** Plan and enforce all safety requirements.
 - E. **Changes:** Recommend and assist in the preparation of requests to the Professional for any changes in the Contract.
 - F. **Application for Payment:** Assist in the preparation and be knowledgeable of each entry in the Application and Certificate for Payment.

1.03 **SUBCONTRACTOR'S DUTIES**

- A. **General:** The Subcontractor is responsible for coordinating and supervising employees in the work to be accomplished under their part of the Contract.
- B. **Schedules:** Conduct work to assure compliance with construction schedules.
- C. **Suppliers:** Transmit all instructions to Material Suppliers.
- D. **Cooperation:** Cooperate with the Project Coordinator and other Subcontractors.

1.04 **OWNER-PURCHASED PRODUCTS**

- A. **General:** Cooperate, accept delivery, arrange storage and protect Owner-purchased products until installation, or final acceptance.

**CUTTING AND PATCHING
SECTION 01045**

1.01 GENERAL DESCRIPTION

- A. **Scope:** To set forth broad, general conditions covering cutting and patching that applies to everyone and everything on the job.
- B. Execute cutting including excavating, fitting, or patching of work required to:
 - 1. Make several parts fit properly.
 - 2. Uncover work to provide for installation of ill-timed work.
 - 3. Remove and replace defective work.
 - 4. Remove and replace work not conforming to Contract requirements.
 - 5. Install specified work in existing construction.
- C. In addition to Contract requirements, upon Professional's written instructions:
 - 1. Uncover work for observation of covered work.
 - 2. Remove samples of installed materials for testing.
 - 3. Remove work to provide alteration of existing work.
- D. Do not cut or alter work of another Contractor without permission.
- E. **Payment of Costs:** Costs caused by ill-timed, or defective work, or work not conforming to Contract Documents will be borne by party responsible for ill-timed, defective work, or non-conforming work.

1.02 MATERIALS/PRODUCTS

- A. **Materials for Replacement or Work Removed:** Comply with Specifications for type of work to be accomplished.

1.03 EXECUTION

- A. **Inspection:** Inspect existing conditions of work, including elements subject to movement, or damage during cutting and patching.
- B. **Preparation Prior to Cutting:** Provide shoring, bracing and support, as required, to maintain structural integrity of the building. Provide protection for other portions of work and protection from the elements.
- C. **Performance:**
 - 1. Execute cutting and demolition by methods which prevent damage to other work and will provide surfaces to receive installation of repairs and new work.
 - 2. Execute excavating and backfilling by methods which prevent damage to other work and prevent settlement.
 - 3. Restore work which has been cut or removed; install new products to provide completed work in accordance with requirements of Contract Documents.
 - 4. Refinish entire surfaces, as necessary, to provide an even finish. Refinish continuous surfaces to the nearest intersection and assemblies entirely.

**PROJECT MEETINGS
SECTION 01200**

1.01 DESCRIPTION

- A. **Contractor's Responsibilities:** The General Contractor will administer all progress meetings which include the following:
1. Prepare agenda
 2. Distribute written notice of meetings seven (7) days in advance
 3. Make physical arrangements for and presiding at the meetings
 4. Record minutes
 5. Distribute copies of the minutes to participants within four (4) days
- B. **Pre-Construction Meeting:** The Owner will schedule a pre-construction meeting as soon as possible after the award of Contract and the issuance of a *Notice to Proceed*.
1. **Attendance:**
 - a. Owner
 - b. Professional and Consultants
 - c. General Contractor
 - d. Major Subcontractors, including mechanical and electrical
 - e. Representatives of governmental, or other regulatory agencies
 - f. Commissioning Authority Professional (if Cx on project)
 2. **Minimum Agenda:** (prepared by the General Contractor)
 - a. Distribute and discuss list of major Subcontractors and construction schedule
 - b. Critical work sequencing
 - c. Designation of responsible personnel
 - d. Procedures for maintaining record documents
 - e. Use of premises, including office and storage areas
 - f. Owner's requirements
 - g. Security procedures
 - h. Housekeeping procedures
 - i. Commissioning issues (if Cx on project)
 3. **Utilities:** A written agreement must be reached on how all utilities will be furnished and the rates the Contractor will be charged. This agreement should be resolved at this meeting. Refer to Section 1500 entitled *Construction Facilities and Temporary Controls* of this Project Manual for additional utility requirements.
- C. **Progress Meetings:**
1. The Owner will schedule regular meetings at the time of the pre-construction conference
 2. Hold all meetings as progress of work dictates
 3. **Attendance:**
 - a. Owner
 - b. Professional and Consultants
 - c. General Contractor
 - d. Subcontractors, as pertinent to the agenda
 - e. Commissioning Authority Professional (if Cx on project)
 4. **Minimum Agenda:**
 - a. Review, approve minutes of the previous meeting
 - b. Review work progress since last meeting
 - c. Note field inspections, problems and decisions
 - d. Identify problems which impede planned progress
 - e. Review off-site fabrication problems
 - f. Revise construction schedule, as indicated
 - g. Plan progress during the next work period
 - h. Review proposed changes
 - i. Complete other current business
 - j. Commissioning issues (if Cx on project)

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- D. Commissioning Meetings: (if Cx on project) The Owner will schedule a commissioning scoping meeting at the pre-construction conference. Regular Commissioning Meetings will coincide with regularly scheduled Progress Meetings until such time that the Commissioning Process requires additional meetings. The Commissioning Authority Professional will chair, facilitate and document Commissioning Meetings.
1. Attendance:
 - a. Owner
 - b. Commissioning Authority Professional
 - c. Professional and Consultants
 - d. General Contractor
 - e. Subcontractors, as pertinent to unresolved issues identified in current Issues Log
 - f. Testing, Adjusting and Balancing Contractor
 - g. Using Agency's Building Operator/Physical Plant Representative
 2. Minimum Agenda:
 - a. Review, approve minutes of the previous meeting
 - b. Review Issues Log

**PROGRESS SCHEDULES
SECTION 01310**

1.01 DESCRIPTION

- A. **Scope:** Provide projected construction schedules for entire work and revise periodically. The following is a minimum requirement and other type schedules are acceptable with Owner's approval. This type of schedule is acceptable for any Project whose initial Contract award amount if **less than** one (1) million dollars (\$1,000,000).
- B. **Form of Schedules:** Prepare in form of horizontal bar chart.
1. Provide separate horizontal bar column for each trade or operation.
 2. Place in order of the Table of Contents of Specifications.
 3. Identify each column by major Specification section number.
 4. Identify the first work day of each week by horizontal time scale.
 5. Scale and space to allow for updating.
- C. **Contents of Schedule:**
1. Provide complete sequence of construction by activity.
 2. Indicate dates for beginning and completion of each stage of construction.
 3. Identify work of separate floors, separate phases, or other logically grouped activities.
 4. Show projected percentage of completion for each item of work as of first day of month.
- D. **Updating:**
1. Show all changes occurring since previous submission of updated schedule.
 2. Indicate progress of each activity and completion dates.
- E. **Submittals:**
1. Submit initial schedules to the Professional within fifteen (15) days after date of Notice to Proceed.
 2. Submit to Professional periodically updated schedules accurately depicting progress to first day of each month.
 3. Submit two (2) copies, one (1) to be retained by the Professional and the other forwarded to the Owner.

**NETWORK ANALYSIS SCHEDULE
SECTION 01311**

1.01 DESCRIPTION

- A. **Scope:** Provide projected network analysis schedules for the entire Work and revise periodically. This type of schedule is acceptable for any Project whose initial Contract award amount is one million dollars (\$1,000,000), **or greater**.

1.02 REFERENCES

Division One

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- A. **CPM in Construction:** The latest edition of the Manual entitled **The Use of CPM in Construction, A Manual for General Contractors and the Construction Industry**, published by the Associated General Contractors of America (AGC) - Washington, D.C. shall be used.

1.03 **QUALITY ASSURANCE**

- A. **Contractor's Administrative Personnel:** Two (2) years minimum experience in using and monitoring CPM schedules on comparable Projects is required.

1.04 **FORMAT**

- A. **Listings:** Reading from left to right, in ascending order for each activity, identify each activity with the applicable specification section number.
- B. **Diagram Sheet Size:** Height and width as required.
- C. **Scale and Spacing:** To allow for notations and revisions.

1.05 **SCHEDULES**

- A. **Critical Path Methods:** Prepare network analysis diagrams and supporting mathematical analyses using the *Critical Path Method* under *Concepts and Methods* as outlined in the AGC's **The Use of CPM in Construction, A Manual for General Contractors and the Construction Industry**.
- B. **Order of Work:** Illustrate order and interdependence of activities and sequence of Work; how start of a given activity depends on completion of preceding activities, and how completion of the activity may restrain start of subsequent activities.
- C. **Complete Sequence of Construction:** Illustrate complete sequence of construction by activity, identifying work of separate stages. Provide dates for submittals and return of submittals; dates for procurement and delivery of products; and dates for installation and provision for testing. Provide legend for symbols and abbreviations used.
- D. **Mathematical Analysis:** Tabulate each activity of detailed network diagrams, using calendar dates, and identify for each activity:
1. Preceding and following event numbers
 2. Activity description
 3. Estimated duration of activity, in maximum thirty (30) day intervals
 4. Earliest start date
 5. Earliest finish date
 6. Actual start date
 7. Actual finish date
 8. Latest start date
 9. Latest finish date
 10. Total and free float
 11. Monetary value of activity (keyed to *Schedule of Values*)
 12. Percentage of activity completed
 13. Responsibility
- E. **Analysis Program:** Capable of compiling monetary value of completed and partially completed activities, of accepting revised completion dates, and recomputation of all dates and floats.
- F. **Required Sorts:** List activities in sorts or groups:
1. By preceding work item or event number from lowest to highest
 2. By amount of float, then in order of early start
 3. By responsibility in order of earliest possible start date
 4. In order of latest allowable start dates
 5. In order of latest allowable finish dates
 6. Contractor's periodic payment request sorted by *Schedule of Values* listings, Specifications section
 7. Listing of basic input data which generates the report

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- 8. Listing of activities on the critical path
 - 9. Monthly cash flow

G. **Schedule of Values:** Coordinate contents with *Schedule of Values* in Section 01300.

1.06 SUBMITTALS FOR REVIEW

- A. **Preliminary Network Diagram:** Within fifteen (15) days after the date established in the *Notice to Proceed* submit proposed preliminary network diagram defining planned operations for the first sixty (60) days of Work, with a general outline for the remaining Work.
- B. **Review:** Participate in review of preliminary and complete network diagrams jointly with the Professional.
- C. **Proposed Complete Network Diagram:** Within twenty (20) days after joint review of proposed preliminary network diagram, submit draft of proposed complete network diagram for review. Include written certification that mechanical and electrical Subcontractors have reviewed and accepted proposed schedule.
- D. **Complete Network Diagram:** Within ten (10) days after joint review, submit complete network analysis consisting of network diagrams and mathematical analysis.
- E. **Updated Network Schedules:** Submit updated network schedules with each Application for Payment.
- F. **Copies:** Submit the number of opaque reproductions the Contractor requires, plus two (2) copies which will be retained by the Professional and the Owner.

1.07 REVIEW AND EVALUATION

- A. **Review:** Participate in joint review and evaluation of network diagrams and analysis with the Professional at each submittal.
- B. **Evaluate:** Evaluate Project status to determine Work behind schedule and Work ahead of schedule.
- C. **Revisions:** After review and approval of the Professional, revise as necessary as a result of the review and resubmit within ten (10) days.

1.08 UPDATING SCHEDULES

- A. **Schedules:** Maintain schedules to record actual start and finish dates of completed activities.
- B. **Progress:** Indicate progress of each activity to date of revision, with projected completion date of each activity. Update diagrams to graphically depict current status of Work.
- C. **Modifications:** Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- D. **Changes:** Indicate changes required to maintain Date of Substantial or Total Completion. These changes will be made only with the approval of the Professional.

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- E. **Extensions:** Contract completion time will be adjusted only for causes specified in the Contract. Requests for an extension of the contract completion date by the Contractor shall be supported with a justification, CPM data and supporting evidence as the Owner may deem necessary for determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the Contract. Submission of proof based on revised activity logic duration and costs is obligatory to any approvals. The schedule must clearly display that the Contractor has used, in full, all the float time available for the work involved in the request. The Owner's determination as to the total number of days of contract extension shall be based upon the current computer-produced calendar-dated schedule for the time period in question and all other relevant information. Actual delays in activities which, according to the computer-produced calendar-dated schedule, do not affect the extended and predicted contract completion dates shown by the critical path in the network, will not be the basis for a change to the contract completion date. The Owner will, within a reasonable time after receipt of such justification and supporting evidence, review the facts and advise the Contractor in writing of the Owner's decision. The Contractor shall submit each request for a change in the contract completion date to the Owner. The Contractor shall include as a part of each change order proposal, a sketch showing all CPM revisions, duration changes, and cost changes, for the work in question and its relationship to other activities on the approved arrow diagram.
 - F. **Substantiate:** Submit sorts required to support recommended changes.
 - G. **Report:** Provide narrative report to define problem areas, anticipated delays, and impact on the schedule. Report corrective action taken or proposed and its effect.

1.09

DISTRIBUTION

- A. **Distribution of Copies:** Following joint review, distribute copies of updated schedules to Contractor's Project site, to Subcontractors, Suppliers, Professional and Owner.
- B. **Reporting Problems:** Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES SECTION 01340

1.01

DESCRIPTION

- A. **Scope:** Submit to the Professional shop drawings, product data and samples required by Specification sections. Submit an additional copy of shop drawings, product data and samples related to items/systems identified to be commissioned to the Commissioning Authority Professional to be reviewed concurrently with the Professional. (if Cx on project).
- B. **Shop Drawings:** Original drawings prepared by Contractor, Subcontractor, Supplier, or Distributor which illustrate some portion of the Work; showing fabrication, layout, setting, or erection details.
 - 1. Prepared by a qualified detailer.
 - 2. Identify details by reference to sheet and detail numbers shown on Contract drawings.
 - 3. Minimum sheet size: 8 1/2" x 11"
 - 4. Reproductions for submittals: Opaque diazo prints.
- C. **Product Data:**
 - 1. **Manufacturer's Standard Schematic Drawings:** Modify drawings to delete information which is not applicable to the Project. Supplement standard information to provide additional information applicable to the Project.
 - 2. **Manufacturer's Catalog Sheets, Brochures, Diagrams, Schedules, Performance Charts, Illustrations and Other Standard Descriptive Data:** Clearly mark each copy to identify pertinent materials, products, or models. Show dimensions and clearances required. Show performance characteristics and capacities, wiring diagrams and controls.

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- D. **Samples:** Physical examples to illustrate materials, equipment or workmanship and to establish standard by which completed work is judged.
1. **Office Samples:** Of sufficient size and quantity to clearly illustrate functional characteristics of products or material with integrally related parts and attachment devices and full range of color samples. After review, samples remain the property of the Professional until completion of the construction project.
 2. **Field Samples and Mock-ups:** Erect on project site at location acceptable to Professional. Construct each sample, or mock-up, completely including work of all trades required in finished work.
- E. **Contractor's Responsibilities:**
1. Review shop drawings, product data and samples prior to submission.
 2. Verify field measurements, field construction criteria, catalog numbers and similar data.
 3. Coordinate each submittal with requirements of work and of Contract Documents.
 4. Contractor's responsibility for errors and omissions in submittals is not relieved by the Professional's review of submittals.
 5. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by Professional's review of submittals unless Professional gives written acceptance of specific deviations.
 6. Notify Professional in writing at the time of submission of deviations in submittals from requirements of Contract Documents.
 7. Begin no work requiring submittals until the return of submittals bearing Professional's stamp and initials, or signature indicating review.
 8. After Professional's review, distribute copies.
- F. **Submission Requirements:**
1. Schedule submission with ample time before dates reviewed submittals will be needed.
 2. Submit number of copies of shop drawings and product data which Contractor requires for distribution, plus one (1) copy to be retained by the Professional.
 3. Submit number of samples specified in each Specification section.
 4. Accompany submittals with transmittal letter, in duplicate, containing date, Project title and number; Contractor's name and address; the number of each shop drawings, product data and samples submitted; notification of deviations from Contract Documents; and, other pertinent data.
 5. Submittals shall include:
 - a. Date and revision dates.
 - b. Project title and number.
 - c. The names of the Professional, Contractor, Supplier, Manufacturer and separate detailer, when pertinent.
 - d. Identification of product, or material.
 - e. Relation to adjacent structure, or materials.
 - f. Field dimensions clearly identified as such.
 - g. Specification section number.
 - h. Applicable standards such as ASTM number, or federal specifications.
 - i. A blank space (2" x 3") for the Professional's stamp.
 - j. Identification of deviations from Contract Documents.
 - k. Contractor's stamp, initialed or signed, certifying the review of submittal, verification of field measurements and compliance with Contract Documents.
- G. **Resubmission Requirements:**
1. **Shop Drawings:** Revise initial drawings, as required, and resubmit as specified for initial submittal. Indicate on the drawings any changes which have been made other than those required by the Professional.
 2. **Product Data and Samples:** Submit new data and samples, as required, for initial submittal.

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- H. **Distribution of Submittals After Review:**
1. Distribute copies of shop drawings and product data which carry Professional's stamp to Contractor's file, job site file, Subcontractor, Supplier and Fabricator.
 2. Distribute samples as directed.
- I. **Professional's Duties:**
1. Review submittals with reasonable promptness.
 2. Review for design concept of Project and information given in Contract Documents.
 3. Review of separate item does not constitute review of an assembly in which item functions.
 4. Affix stamp and initials, or signature, certifying the review of submittal.
 5. Return submittals to Contractor for distribution.

**TESTING LABORATORY SERVICES
SECTION 01410**

1.01 DESCRIPTION

- A. **Scope:** The Contractor will employ and pay for the services of an independent laboratory to perform specified services. Employment of a testing laboratory shall in no way relieve the Contractor of his obligation to perform work in accordance with the Contract.
- B. **Inspection, Sampling and Testing:** Refer to each individual specification section for specific inspection, sampling and testing requirements.
- C. **Qualification of Laboratory:**
1. Meet the *Recommended Requirements for Independent Laboratory Qualification* published by the American Council of Independent Laboratories.
 2. Meet the basic requirements of ASTM E 329-70, *Standards of Recommended Practice for Inspection and Testing Agencies for Concrete and Steel as Used in Construction*.
 3. Responsible Engineer: Perform all testing under the direct supervision of a registered Professional engineer employed full time by the testing laboratory.
 4. Submittals: Submit a copy of the inspection report of the facilities made by materials reference laboratory of National Bureau of Standards of any deficiencies reported by the inspection.
 5. Approval: The Professional must approve the testing laboratory.
- D. **Laboratory's Duties:**
1. Upon notice, cooperate with the Professional and the Contractor to promptly provide qualified personnel. Perform specified inspections, sampling and testing of materials and methods of construction to ascertain compliance with requirements of Contract Documents. Promptly notify the Professional and the Contractor of irregularities or deficiencies of work observed during performance of services.
 2. Reports of inspections and tests will include:
 - a. Date issued
 - b. Project title and number
 - c. Testing laboratory's name and address
 - d. Name and signature of inspector
 - e. Date of inspection, or sampling
 - f. Record of temperature and weather
 - g. Date of test
 - h. Identification of product and Specification section
 - i. Location of Project
 - j. Type of inspection, or test
 - k. Observations regarding compliance with Contract Documents

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3. Prompt distribution of copies of the inspection reports and tests to:
 - a. Owner
 - b. Professional
 - c. General Contractor
 - d. Consulting Engineer, when pertinent
 - e. Subcontractor, when pertinent
 - E. **Contractor's Responsibilities:**
 1. Cooperate with laboratory personnel to provide access to work and to manufacturer's operation. Provide the laboratory with the required quantities of preliminary samples representative of materials to be tested and required quantities. When required, furnish copies of mill test reports. Furnish laboratory casual labor to obtain and handle samples at the site and to facilitate inspections and tests. Provide facilities for laboratory's exclusive use for storage and curing of test samples. Notify laboratory sufficiently in advance of operations to allow for assignment of personnel and scheduling of tests.
 2. Arrange and pay for additional samples and tests required for Contractor's convenience. When initial tests indicate work does not comply with Contract Documents, the Contractor may employ and pay for the services of a separate, equally qualified independent testing laboratory to perform additional inspections, sampling and testing.

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS SECTION 01500

1.01 DESCRIPTION

- A. **Scope:** Work required under this section consists of all temporary construction facilities, services and related items to complete the work indicated on the drawings and described in the Project Manual.
- B. **Standards:**
 1. Conform to or exceed all temporary construction requirements stated in the current edition of the **Standard Building Code** [Chapter entitled *Safeguards During Construction*].
 2. Refer to Article 10.1.1 in Section 00700 entitled *General Conditions*.
- C. **Materials:** All materials required by the Work of this section shall be as specified in the respective sections.

1.02 FACILITIES AND CONTROLS

- A. **Access:** The Prime General Contractor shall provide an adequate access and/or roads to the site of the structure, if required for the prosecution of work; and, should also provide and maintain at least one (1) temporary, or permanent, access to each working elevation to be permanently occupied.
- B. **Hoisting Facilities:** The Prime General Contractor shall be responsible for providing suitable capacity and hoisting facilities for all people and materials. The use of the hoisting facilities shall be by mutual agreement of the Prime General Contractor and the individual Contractor.
- C. **Field Office and Sheds:** At all times, the Prime General Contractor shall provide and maintain a weatherproof office with telephone, which may also be used by Subcontractors, the Owner and the Professional. Office location will be approved by the Owner. Each general and individual Contractor shall provide suitable watertight/dampproof sheds to house their construction materials.
- D. **Sanitation Facilities:** The Prime General Contractor is responsible for furnishing adequate temporary toilet facilities on the job site.
- E. **Drinking Water:** The Prime General Contractor shall provide at all times sanitary drinking water facilities for all workmen on the job including ice, when required, and paper cups, etc..

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- F. **Fire Protection:** The Prime General Contractor shall provide general temporary fire protection. Subcontractors will be responsible for their own.
- G. **Storage:** The Prime General Contractor shall coordinate the allocation of storage areas to the various Subcontractors.
- H. **Temporary Heat:** The Prime General Contractor shall provide heat, fuel and services, as necessary, to protect all work from dampness and cold until final acceptance. If in the late stages of the construction, mechanical and electrical installations will permit, the mechanical and electrical facilities may be used to provide heat and ventilation. However, the Owner is saved harmless of any costs of operation or responsibility as to acceptance of mechanical and/or electrical installations.
- I. **Utilities:** The Prime General Contractor shall make arrangements for and furnish all water, electricity (lighting and power) and other utilities necessary for construction purposes. A written agreement must be reached on how all utilities (water and electricity) will be furnished and the rates the Contractor will be charged. A copy of the final agreement signed by the Contractor and the Institution or Agency must be forwarded to the Owner. If the written agreement is not filed with the Owner, the Contractor and the Institution or Agency waives all rights as to the rates charged. The Owner will then determine all utility rates and assess the charges before final payment is rendered.
- J. **Project Sign:**) (new State Seal per Legislature July 1, 2014)
1. The Prime General Contractor will erect on adequate supports and maintain one (1) neatly constructed and painted 3/4" thick plywood sign of size, color, layout, and location as indicated in the Contract Documents. (example attached as Exhibit "B" at the end of Division 1 Section 01900)
 2. No other signs will be displayed on the job site without permission of the Professional. The displaying of sign advertisements is strictly prohibited.

SUBSTITUTIONS AND PRODUCT OPTIONS

SECTION 01630

(01630 Revised August 2016;
see Inst to Bidders 2.05)

1.01 DESCRIPTION

- A. Scope: To set forth the procedure and conditions for substitutions and to give the product options available to the Contractor.

1.02 PRODUCTS LIST

- A. Within thirty (30) days after the Contract has been signed, the Contractor will submit to the Professional five (5) copies of a complete list of all products proposed for installation.
- B. Tabulate the list by Specification sections.
- C. For products specified under reference standards, include with listing of each product:
1. Name and address of Manufacturer.
 2. Trade name.
 3. Model, or catalog designation.
 4. Manufacturer's data.
 5. Performance and test data.
 6. Reference standards.

1.03 CONTRACTOR'S OPTIONS

- A. For products specified only by reference standards or technical performance requirements, select any product meeting product standards by any Manufacturer.
- B. For products specified by naming a minimum of three (3) products or Manufacturers, select any product and Manufacturer named. Equivalent products will always be accepted if equal in all consequential respects.
- C. For product specified by naming one (1) or more products and/or Manufacturers, but indicating the option of selecting equivalent products by stating "or equal" after specified product and/or Manufacturer, select any product meeting

specified reference standards or technical performance requirements as represented by the named products and/or Manufacturers.

D. For products specified by naming only one (1) product and/or Manufacturer as a “basis of design”, an equivalent product will always be accepted if it is equal in all consequential respects.

E. For products specified by naming only one (1) product and Manufacturer and stating no substitutions will be accepted, there is no option and no substitutions will be allowed. This option must have written approval by the Owner before bidding.

1.04 SUBSTITUTIONS

A. A product or construction method that varies from a product or construction method specified in one or more consequential characteristics, reference standards, or technical performance requirements shall be considered a substitution.

B. Professional will not consider requests for substitutions during bidding.

C. Within thirty (30) days after the Contract has been signed, the Professional will consider formal requests from the Contractor for substitution of products in place of those specified. Submit five (5) copies of the request for substitutions. Include in the request:

1. Narrative summarizing characteristics, reference standards, or technical performance requirements that product varies from and how the proposed product or construction method will meet or exceed project requirements
2. For products:
 - a. Product identification including Manufacturer's name and address.
 - b. Manufacturer's literature: Product description, performance and test data and reference standards.
 - c. Samples.
 - d. Name and address of similar projects on which product was used and date of installation.
3. For construction methods:
 - a. Detailed description of proposed method.
 - b. Drawings illustrating methods.
4. Agreement to pay for any additional professional costs if acceptance of substitution will require substantial revision of Contract Documents.
5. Data relating to any delays to the construction schedule if any will result from proposed substitution.
6. Accurate cost data on proposed substitution if any project cost increases are anticipated or any cost savings are being offered for proposed substitution.

D. In making request for substitution, Contractor represents:

1. Proposed product, or method, has been investigated and determined that it is equal or superior in all respects to that specified.
2. The same or better guarantee and/or warranty will be provided for substitutions for product or method specified.
3. Installation of accepted substitutions will be coordinated into the Work, making such changes required of work to be complete in all respects at no additional cost to the Owner.
4. All claims for additional costs related to substitution, including any delays to the construction schedule, which consequently become apparent will be waived.
5. Unless specifically identified in substitution submittal and such delay is specifically agreed to by Change Order to the Contract, substitution will not cause any delay to the construction schedule.
6. Proposed product, or method, will not result in any additional costs to the Owner.

E. Substitutions will not be considered if:

1. Indicated, or implied, on shop drawings or product data submittals without formal request submitted in accordance with this Section.
2. Acceptance will require substantial revision of Contract Documents unless compensation for such additional professional costs are paid by Contractor at no additional cost to the Owner.
3. In the Professional's judgment, the product, or material, is not equal.

**STARTING OF SYSTEMS
SECTION 01650**

1.01 GENERAL

- A. **Scope:** This Section describes the procedures for start up of all building equipment and systems including necessary demonstration and instructions.

1.02 STARTING SYSTEMS

- A. Coordinate Schedule for start-up of various equipment and systems.
- B. Notify Professional and Owner seven (7) days prior to start-up of each system.
- C. Verify each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, or other conditions which may cause damage.
- D. Verify that tests, meter readings and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision of responsible Contractors' personnel in accordance with manufacturers' instructions.
- G. When specified in individual specification Sections, require Manufacturer to provide authorized representative to be present at site to inspect, check and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

1.03 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Owner's personnel prior to date of Substantial Completion.
- B. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
- C. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed-upon times, at designated location.
- D. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

**CONTRACT CLOSEOUT
SECTION 01700**

1.01 DESCRIPTION

- A. **Scope:** The work required in this Section consists of the final inspections and the submission of all closeout documents and related items to complete the Work indicated on the Drawings and described in the Project Manual.

1.02 FINAL INSPECTIONS

- A. **Professional's Inspection:** The Contractor shall make written request for a final inspection to the Professional; notice to be given ten (10) days prior to the inspection. A list of any deficiencies, compiled by the Professional, will be corrected by the Contractor. If, in the Professional's judgement, the Project is not ready for a final inspection, the Professional may schedule another inspection

Division One

June 2011

- B. **Owner's Inspection:** After the Professional has ascertained the Project to be ready, an Owner's inspection will be scheduled within ten (10) days thereafter. The Contractor will have ten (10) days after the Owner's acceptance to make any corrections of punch list items and to submit closeout documents.
- C. **Correction of Work Before Final Payment:** The Contractor shall promptly remove from the Owner's premises all materials condemned for failure to conform to the Contract, whether incorporated in the Work or not, and the Contractor shall, at his own expense, replace such condemned materials with those conforming to the requirements of the Contract. Failure to remedy such defects after ten (10) days written notice will allow the Owner to make good such defects and such costs shall be deducted from the balance due the Contractor, or charged to the Contractor in the event no payment is due.

1.03

CLOSEOUT DOCUMENTS

Unless otherwise notified, the Contractor shall submit to the Owner through the Professional, three (3) copies of the following before final payment is made:

- A. **Request for Final Payment:** AIA Document G702, current edition, completed in full or a computer generated form having similar data.
- B. **Consent of Surety Company to Final Payment:** AIA Document G707, current edition, completed in full by the Bonding company.
- C. **Power of Attorney:** Closeout documents should be accompanied by an appropriate Power of Attorney.
- D. **Release of Liens and Certification that All Bills Have Been Paid:** AIA Document G706A, current edition, completed in full or a sworn statement and affidavit from the Contractor to the Owner stating that all bills for this job have been paid and that the Owner is released from any and all claims and/or damages.
- E. **Contractor's Affidavit of Payment of Debts and Claims:** AIA Document G706, current edition, completed in full.
- F. **Guarantee of Work:** Sworn statement that all work is guaranteed against defects in materials and workmanship for one (1) year from date of Owner's acceptance, except where specified for longer periods.
 - 1. Word the Guarantee as follows, or in a similar manner:
We hereby guarantee all work performed by us on the above captioned Project to be free from defective materials and workmanship for a period of one (1) year or such longer period of time as may be called for in the Contract Documents for such portions of the Work.
 - 2. All guarantees and warranties shall be obtained in the Owner's name.
 - 3. Within the Guaranty period, if repairs or changes are requested in connection with guaranteed work which, in the opinion of the Owner, are rendered necessary as a result of the use of materials, equipment or workmanship which are inferior, defective or not in accordance with the terms of the Contract, the Contractor shall promptly, upon receipt of notice from and without expense to the Owner, place in satisfactory condition building, site, equipment or contents thereof. The Contractor shall make good any work, materials, equipment or contents of said buildings or site which may be disturbed by fulfilling any such Guaranty.
 - 4. If, after notice, the Contractor fails to proceed promptly to comply with the terms of the Guaranty, the Owner may have the defects corrected and the Contractor and his Sureties shall be liable for all expense incurred.
 - 5. All special guarantees applicable to definite parts of the work stipulated in the Project Manual or other documents forming part of the Contract shall be subject to the terms of this paragraph during the first year of the life of such special guaranty.
- G. **Project Record Document:** Furnish all other record documents as set forth in Section 01720 entitled *Project Record Documents*.
- H. **Additional Documents Specified Within the Project Manual:** Provide all additional certificates, warranties, guarantees, bonds or documents as called for in the individual sections of the Project Manual. The Contractor is responsible for examining the Project Manual for these requirements.

CLEANING SECTION 01710

1.01

DESCRIPTION

Division One

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- A. **Scope:** Maintain premises and public properties from accumulations of waste, debris and rubbish caused by operations. At completion of work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials and clean all sight-exposed surfaces; leave Project clean and ready for occupancy.

1.02 **PRODUCTS**

- A. **Materials:** Use only cleaning materials recommended by Manufacturer of surface to be cleaned. Use cleaning materials only on surfaces recommended by the cleaning materials Manufacturer.

1.03 **EXECUTION**

- A. **During Construction:** Execute cleaning to insure that building, grounds and public properties are maintained free from accumulations of waste materials and rubbish. Wet down dry materials and rubbish to lay dust and prevent blowing dust. At reasonable intervals during progress of work, clean site and public properties and dispose of waste materials, debris and rubbish. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner's property. Vacuum clean interior building areas when ready to receive finish painting and continue vacuum cleaning on an as-needed basis until building is ready for substantial completion or occupancy. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights. Schedule cleaning operations so that dust or other contaminants resulting from cleaning process will not fall on wet or newly painted surfaces.
- B. **Final Cleaning:** Employ experienced workmen, or professional cleaners, for final cleaning. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces and concealed spaces. Remove grease, dust, dirt, stains, labels, fingerprints and other foreign materials from sight-exposed finishes. Repair, patch and touch up marred surfaces to specified finish to match adjacent surfaces. Broom clean paved surfaces; rake clean other surfaces of grounds. Replace air conditioning filters, if units were operated during construction. Clean ducts, blowers and coils if air conditioning units were operated without filters during construction. Maintain cleaning until Project, or respective portions thereof, is occupied by Owner.

**PROJECT RECORD DOCUMENTS
SECTION 01720**

1.01 **DESCRIPTION**

- A. **Scope:** To set forth the procedure and requirements for keeping project record documents.
- B. **Maintenance Documents:** (modified Dec 2013)
1. Throughout the Contract, maintain one (1) copy of all of the following: Contract Drawings, Project Manual, Addenda, Change Order(s), reviewed shop drawings, reviewed submittals, hardware schedules, field, and laboratory test records, equipment brochures, parts lists, operating instructions and other modifications to the Contract.
 2. Store documents on site apart from documents used for construction.
 3. Maintain documents in clean, dry, legible condition. Do not use record documents for construction purposes.
 4. Make documents available, at all times, for inspection by the Professional, Commissioning Authority Professional, and the Owner.
 5. Keep documents in 8 ½" x 11" loose leaf binders. Clearly label each binder on the spine. Sub-divide with permanently marked tabs of card stock. Provide a main tab for each specification section. Provide sub-tabs for each major piece of equipment or component.
 6. Format for information behind each tabbed piece of equipment/component shall be:
 - a. Contractor/Installer Information: Include address, phone number and contact name. Include emergency service contact information as applicable.
 - b. Manufacturer Information: Include address, phone number and contact name.
 - c. Shop Drawings and Product Data
 - d. Operation and Maintenance Instructions
 - e. Control Drawings
- C. **Recording:**
1. **General:** Mark all modifications in red pencil. Keep record documents current. Do not permanently conceal any work until required information has been recorded.

Division One

-
2. **Contract Drawings:** Legibly mark to record actual construction.
 - a. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
 - b. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
 - c. Field changes in dimension and detail.
 - d. Changes made by change order(s) or field order(s).
 3. **Project Manual and Addenda:** Legibly mark up each section to record Manufacturer, trade name, catalog number and Supplier of each product and item of equipment actually installed.
 4. **Shop Drawings:** Maintain as record documents. Legibly mark drawings to record changes made after review.
- D. **Submittal:** At completion of Project, deliver two (2) copies of each record document to the Professional, who will transmit both sets to the Institution or Agency. Additionally, provide to Owner updated As-Built Contract Documents in electronic format utilizing electronic format copy of Contract Documents furnished by Professional or by scanning of marked-up contract Documents. (see also 600.57 and 700.40 regarding electronic As-Built Documents) (modified Dec 2013)

**DIVISION ONE SUPPLEMENT
SECTION 01900**

PART 1 - SUMMARY OF WORK SUPPLEMENT

1.01 WORK SEQUENCE

- A. Owner will occupy the building during construction, coordinate with Owner's Representative in scheduling work to vacate the areas as the Contractor requires.
- B. Construct work in stages as follows:
1. _____
 2. _____
 3. _____

1.02 PARTIAL OWNER OCCUPANCY

- A. Schedule early completion of designated areas for Owner's usage prior to substantial completion of entire Project.
1. _____
 2. _____
 3. _____
- B. Owner will occupy areas for purpose of _____
- C. Contractor will provide:
1. Access for Owner's personnel
 2. Operation of heating, ventilating, air conditioning and electrical systems
 3. _____
- D. Prior to occupancy, execute a *Certificate of Substantial Completion* for designated areas.
- E. Upon occupancy, Owner shall provide:
1. _____
 2. _____

PART 2 - ALLOWANCE SUPPLEMENT

2.01 SCHEDULE OF ALLOWANCES

- A. Include in the Bid, for inclusion in the Contract Sum, the amount of \$_____ for purchase of _____
(Refer to Section _____, _____)
- B. Include in the Bid, for inclusion in the Contract Sum, the amount of \$_____ for purchase of _____
(Refer to Section _____, _____)

3.01 DESCRIPTION OF ALTERNATES

- A. Alternate Number One.
- B. Alternate Number Two.
- C. Alternate Number Three.
- D. Alternate Number Four.
- E. Alternate Number Five.

\

Minority Tracking or Participation Form
February 2003

This document will serve as a tracking instrument for minority participation in publicly funded construction projects managed by the Owner. This document will aid DFA/BOB in its commitment to encourage minority participation during the bidding process. Your conscientious effort and commitment to help establish good business relations with minority subcontractors, consultants, suppliers, partners and/or joint ventures is greatly appreciated.

Any responses will be deemed public information and may be incorporated into reporting information compiled by the Owner in the following manner: Contractors that listed minority participation, Contractors that did not list minority participation and Contractors that submitted an incomplete (partially filled-out or blank) form.

Division One

Section 01010 SUMMARY OF WORK

1.01 Work Covered by Contract Documents

F. Subcontractors List

F.1 The Prime General Contractor will submit to the Owner within seven (7) days from the Notice to Proceed, a completed *Minority Tracking Form* (as follows) outlining the use of minority subcontractors that will be used on the project.

Minority - A person who is a citizen or lawful permanent resident of the United States and who is the following: **African American, Hispanic American, Asian American, American Indian or Female**

Project Name and Number: _____

General Contractor: (Name) _____

Check the Following Appropriate Box

☐

There are NO minority participants included in this bid proposal.

☐

There are minority participants included in this bid proposal. The minority participants may be defined as: Subcontractor(s)/Consultant(s)/ Supplier(s) / Partner(s) / Joint Ventures(s).

List minority participants and their discipline/responsibility per the above or per Construction Specification Institution (CSI) sixteen (16) divisions.

Page 2 of 3
Owner
Minority Participation Form

Name: _____

Division: _____

Amount \$ _____

Name: _____

Division: _____

Amount \$ _____

Name: _____

Division: _____

Amount \$ _____

Name: _____

Division: _____

Amount \$ _____

Name: _____

Division: _____

Amount \$ _____

Name: _____

Division: _____

Amount \$ _____

Name: _____

Division: _____

Amount \$ _____

Owner

Minority Participation Form

Name: _____

Division: _____

Amount \$ _____

Name: _____

Division: _____

Amount \$ _____

Name: _____

Division: _____

Amount \$ _____

End of Form

Division One

Section 01500 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1.02 Facilities and Controls

J. Project Sign

1. The Contractor will erect on adequate supports and maintain one (1) neatly constructed and painted 3/4" thick plywood sign approximately four feet by eight feet (4' x 8'). The Professional will provide the colors, letters, layout and location of the sign. No other signs will be displayed on the job site without permission of the Professional. The displaying of sign advertisements is strictly prohibited
2. Sign to be white background with black lettering/seal. Text style to be Times New Roman. Color of rectangular field at bottom to be selected by Owner. Provide custom Using Agency logo at circular white field of up to three additional colors. No corporate logos for Architect or Contractor shall be permitted. Where additional rendered signage is specified elsewhere, it shall consist of (1) or (2) additional 4'x8' panels, contiguous to the right side of primary project sign.

700.19

PROJECT SIGN

The contractor will erect on adequate supports and maintain one (1) neatly constructed and painted 3/4" thick plywood sign approximately four feet by eight feet (4' x 8'). The Professional will provide the colors, letters, layout and location of the sign. No other signs will be displayed on the job site without permission of the Professional. The displaying of sign advertisements is strictly prohibited.

Sign to be white background with black lettering/seal. Text style to be Times New Roman. Color of rectangular field at bottom to be selected by Owner. Provide custom Using Agency logo at circular white field of up to three additional colors. No corporate logos for Architect or Contractor shall be permitted. Where additional rendered signage is specified elsewhere, it shall consist of (1) or (2) additional 4'x8' panels, contiguous to the right side of primary project sign.



THIS PROJECT IS FUNDED BY THE TAXPAYERS OF MISSISSIPPI

GOVERNOR PHIL BRYANT

PROJECT NAME

GS# 111-111

HB1111 or SB1111, LAWS OF 1111

Governing Board

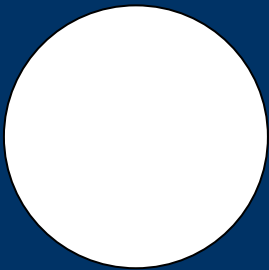
ARCHITECT

ARCHITECT NAME

CONTRACTOR

CONTRACTOR NAME

MISSISSIPPI C.O.R. #11111



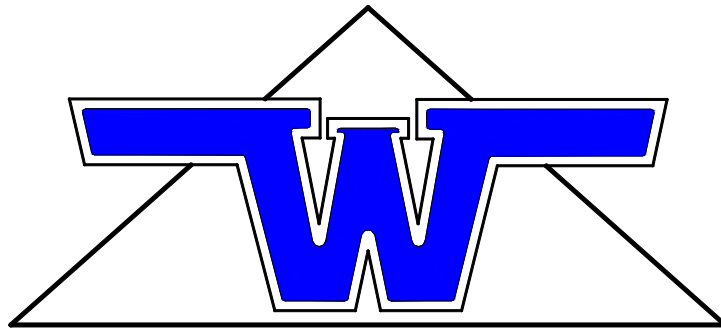
USING AGENCY NAME

HEAD OF USING AGENCY NAME

EXHIBIT C – GEOTECHNICAL DATA

A. GEOTECHNICAL INFORMATION

1. A Geotechnical Investigation dated 10 January 2017 was performed by W Geotechnical and Testing, Inc., 601.928.9099, attached in the following pages.



W Geotechnical and Testing, Inc.

301 Central Avenue East

Wiggins, MS 39577

Phone: 601-928-9099

Fax: 601-928-5984

Email: hwilliams@wgeotechnical.com

REPORT OF GEOTECHNICAL EXPLORATION

GRAND BAY NATIONAL ESTUARINE RESEARCH RESERVE

MOSS POINT, MISSISSIPPI

FOR

**MS. ALLISON H. ANDERSON FAIA, LEED-AP
UNABRIDGED ARCHITECTURE PLLC**

JANUARY 10, 2017

W GEOTECHNICAL AND TESTING, INC.

301 Central Avenue East
Wiggins, MS 39577



Office (601) 928-5981
Fax (601) 928-5984

January 10, 2017

Allison H. Anderson FAIA, LEED-AP
unabridged Architecture PLLC
443 Main Street
Bay Saint Louis, MS 39520
Phone: 228-467-1149
Email: allison@unarch.com

RE: Report of Geotechnical Exploration
Grand Bay National Estuarine Research Reserve – Moss Point, MS

W Geotechnical Project No. G-3028

Dear Ms. Anderson:

Thank you for retaining W Geotechnical and Testing, Inc. to complete a geotechnical exploration for the above referenced site. The results of the subsurface exploration, along with boring logs, and our engineering report are attached to this letter.

To explore the subsurface conditions at this site, one (1) Standard Penetration Test (SPT) boring was performed at a depth of 30 feet below existing ground surface in the general area of the proposed structure.

In general, fair soil conditions were encountered on this site for this area. We recommend the ramp and bird blind be supported by a deep foundation system consisting of either helical piles or timber piles. The helical piles are a more proprietary product and the designer/installer can provide design loads based on our soil boring. The loads can also be verified through field measurements during installation. The timber piles analyzed were 6" x 6" and 8" x 8" treated piles due to these being the maximum size we considered able to be easily transported to the site. Piles capacities are provided in the appropriate section of this report as well as more detailed recommendations.

Thank you for the opportunity to provide geotechnical engineering services on this project. Should you have questions regarding our findings or need additional consultations, please do not hesitate to contact our office.

Respectfully,

W Geotechnical and Testing, Inc. represented by:



1/10/17

Heath S. Williams, P.E.
Project Engineer
MS Registration No. 17702

**REPORT OF GEOTECHNICAL EXPLORATION
GRAND BAY NATIONAL ESTUARINE RESEARCH RESERVE
MOSS POINT, MS**

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INTRODUCTION

General

This report presents the results of our geotechnical exploration findings and our geotechnical recommendations for the proposed construction of nature pavilion at the Grand Bay National Estuarine Research Reserve.

Project Information

The information presented in this section is based on information provided and our own site reconnaissance. The site is located at 6005 Bayou Heron Road in Moss Point, MS.

We understand the proposed project will consist of the construction of a ramp and bird blind as well as associated decks for the purpose of outdoor instruction and classroom space. The structural loading supplied are a maximum column loading of 6 kips downward and 5 kips upward and a minimum loading of 2 kips downward. The project had been designed using helical piles. One of the major concerns is the ability to be built with minimal impact to the environment during construction. At the time of our fieldwork, the site was at the transition between wooded pine savannah and marsh, with standing water at the boring location.

If any of the information presented is incorrect or has changed, please advise W Geotechnical and Testing, Inc. to allow us to reevaluate our recommendations in the light of changes in the present project concept.

Purposes of Exploration

The purposes of this preliminary exploration were to explore the soil and groundwater conditions at the site and to identify any foreseeable special geotechnical considerations needed for the proposed development. We accomplished the purposes of the study by:

1. Performing a general site reconnaissance,
2. Drilling borings to explore the subsurface soil and groundwater conditions,
3. Performing laboratory tests on selected representative soil samples from the borings to evaluate pertinent engineering properties,
4. Evaluating the field and laboratory data to develop appropriate engineering considerations.

FIELD & LABORATORY EXPLORATION

Field Exploration

To explore the subsurface conditions at this site, one Standard Penetration Test (SPT) boring was performed to a depth of 30 feet below the existing ground surface with the anticipated structure footprints. Boring locations were determined in the field by a W Geotechnical representative who measured distances and estimated right angles from existing site features. The boring locations should be considered approximate and boring elevations should be considered from the ground surface elevation at the time of our fieldwork, December 29, 2016.

The soil test borings were performed with a track mounted drill rig, which wet rotary methods to advance the boreholes. Representative soil samples were obtained by means of the split-barrel sampling procedure in general accordance with ASTM Specification D-1586 using a manual drive hammer. In this procedure, a 2-inch O.D., split-barrel sampler is driven into the soil a distance of 18-24 inches by a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler through a 12-inch interval (Blows Per Foot – bpf) is termed the Standard Penetration Test (SPT) N-value and is indicated for each sample on the boring logs. This value can be used as a qualitative indication of the in-place relative density of cohesionless soils. In a less reliable way, it also indicates the consistency of cohesive soils.

The drill crew maintained a field log of the soils encountered in the borings. After recovery, each sample was removed from the sampler and visually classified. Representative portions of each sample were then sealed and brought to our laboratory in Wiggins, Mississippi for further visual examination and laboratory testing.

Laboratory Testing Program

Representative soil samples were selected and tested in our laboratory to check visual classifications and to determine pertinent engineering properties. The laboratory testing program included visual classifications of all soil samples; natural moisture content, Atterberg Limit, and sieve analysis testing of select samples. The laboratory test results are presented on the laboratory test summary sheet in the appendix.

An experienced geotechnical engineer classified each soil sample on the basis of texture and plasticity in accordance with the Unified Soil Classification System. The group symbols for each soil type are indicated in parentheses following the soil descriptions on the boring logs. The geotechnical engineer grouped the various soil types into the major zones noted on the boring logs. The stratification lines designating the interfaces between earth materials on the boring logs and profiles are approximate; in-situ, the transitions may be gradual.

The soil samples will be retained in our laboratory for a period of 60 days, after which, they will be discarded unless other instructions are received as to their disposition.

SUBSURFACE CONDITIONS

Soil Conditions

Data from the soil test borings are included in the Appendix. The subsurface conditions discussed in the following paragraphs and those shown on the boring logs represent an estimate of the subsurface conditions based on interpretation of the boring data using normally accepted geotechnical engineering judgments. We note that the transition between different soil strata is usually less distinct than those shown on the boring logs. Subsurface conditions in unexplored locations may vary somewhat from those reported herein.

The borings performed for this exploration generally encountered Surface Material, Sandy Clay, Clay with Sand, and Clay. These strata are generalized in the following paragraphs, for more specific information refer to the boring logs in the appendix.

Surface Material

The surficial material encountered on this site was about 10 inches of topsoil. Topsoil is a dark-colored surficial material with a high organic content and is generally unsuitable for structural support. We understand the topsoil will be left in place to minimize disturbance to the environment.

Sandy Clay

Material described as sandy clay was encountered from near the ground surface to a depth of about 5 feet below the existing ground surface. This material was generally considered very soft near the surface to stiff at a depth of 5 feet. SPT n-values ranged from 1 near the surface to 12 bpf at 5 feet.

Clay with Sand

Materials described as either clay with sand or clay with a trace of sand were encountered from beneath about 10 feet and extended to a depth of about 20 feet below the existing ground surface. These materials were generally considered medium stiff to stiff in consistency with SPT n-values typically in the 6 to 12 bpf range.

Clay

Very soft to soft marine clay was encountered from about 20 feet to the boring termination depth of 30 feet below the existing ground surface. This material had SPT n-values in the 2 to 4 bpf range.

Groundwater Conditions

Groundwater was encountered at the ground surface at the time of drilling. Observations for groundwater were made during sampling and upon completion of the drilling operations at each boring location. Visual observation of the soil samples retrieved during the drilling exploration can often be used in evaluating the groundwater conditions. Variations in the location of the long-term water table may occur as a result of changes in precipitation, evaporation, surface water runoff, tidal fluctuations, and other factors not immediately apparent at the time of this exploration.

ANALYSIS AND RECOMMENDATIONS

General

The following geotechnical recommendations are based on our observations at the site, interpretation of the field data obtained during the exploration, laboratory test results, and our experience with similar subsurface conditions.

In general, fair soil conditions were encountered on this site for this area. Due to the nature of the project and the effort to minimize the impact on the environment in the area of construction, the proposed construction should be supported by a deep foundation system. The constructability of the deep foundations system and the required installation equipment should be considered for the environmental disturbance.

Deep Foundation Recommendations and Settlement

We recommend the ramp and bird blind be supported by a deep foundation system consisting of either helical piles or timber piles. The helical piles are a more proprietary product and the designer/installer can provide design loads based on our soil boring. The loads can also be verified through field measurements during installation. The timber piles analyzed were 6" x 6" and 8" x 8" treated piles due to these being the maximum size we considered able to be easily transported to the site. The following table provides the recommended allowable capacities of several piles:

Pile Size	Embedment (ft)	Downward Capacity (Kips)	Uplift Capacity (Kips)
6" x 6"	6	3.5	2.6
8" x 8"	5	3.4	2.5
6" x 6"	10	6.6	5.0
8" x 8"	8	6.8	5.1

These pile capacities are based on skin friction, thus it is allowable for the ends of the piles to be sharpened to ease in installation. Embedment depth is from to be measured from the full section of the pile to the ground surface and does not consider any reduced section due to sharpening of the pile or any amount of the pile above the ground surface left for connection to the structure. For example: if the structure is to be 3 feet above the ground surface, and a treated 6" x 6" is selected that is loaded at 5 kips uplift, a 14' long timber pile should be used with 6" of the end of the pile sharpened on an approximately 45° angle, 10' embedment, 3' for structure, leaving about 6" of the pile to be cutoff if needed. Embedment depths of less than 5 feet is not recommended. For durability, the piles should be marine treated piles dosed at a minimum treatment rate of 2.5 CCA. Capacity calculations are based on full dimensions or "rough cut", not planed dimensions. Interpolation for intermediate piles capacities is allowed. Additional pile types and sizes can be analyzed upon request. We anticipate these piles can be installed using conventional construction equipment, namely a moderate sized excavator.

The settlement of properly installed piles will be less than ½ inch. These settlement values are typically within the tolerable range for such structures. Differential settlement between adjacent piles is expected to be approximately half of the anticipated total settlement values.

CLOSING


This report has been prepared in accordance with generally accepted geotechnical engineering practice. No other warranty is expressed or implied. The evaluations and recommendations presented in this report are based on the available project information, as well as on the results of the exploration. W Geotechnical and Testing, Inc. should be given the opportunity to review the final drawings and site plans for this project to determine if changes to the recommendations outlined in this report are needed. Should the nature of the project change, these recommendations should be reevaluated. No third party is given permission to rely on this report or data without the express written consent of W Geotechnical and Testing, Inc.

We recommend that the construction activities be observed by a qualified geotechnical engineer to provide the necessary overview and to check the suitability of the subgrade soils for supporting the footings. We would be pleased to provide an estimated cost for these services at the appropriate time.

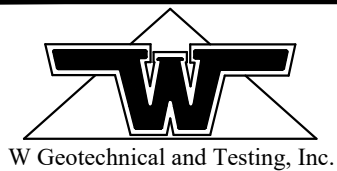
APPENDIX



LEGEND

 Approximate Boring Location

B-X Boring Designation



Job No.	G-3028
Scale	NTS
Drawn By	HSW
Date	01/03/17

Figure Name:
Boring Location Plan

Reference:
Google Earth

Project Name:
Grand Bay NERR
Moss Point, MS

Figure No.:

1

Reference Notes For Boring Logs



DEPTH (FT)	Drilling Symbol	SAMPLE NO.	SAMPLE DIST. (IN)	LABORATORY TEST RESULTS	DESCRIPTION OF MATERIAL	WATER LEVELS ELEVATION (FT)	Boring No. B-X																												
					SURFACE ELEVATION			⊗ STANDARD PENETRATION BLOWS/FT. 10 20 30 40 50+																											
	Sample Data obtained at the depth indicated to the left.	Results of Laboratory Tests Performed	Description of Material Sampled. Including: Visual Color, Soil Description, Moisture, Consistency From N-Value (See Table to the right), and USCS Symbol (See Below).			Standard Penetration Test Blow Count (Blows/Ft) refers to the blows per foot of a 140 lb. hammer falling 30 inches on a 2 inch O.D. Split Spoon Sampler, as specified in ASTM D-1586. The Blow count is commonly referred to as the N-Value.																													
	= Auger = Wet Rotary = Split Spoon Sampler = Shelby Tube Sampler Moisture Content = %M Liquid Limit = LL Plasticity Index = PI Volume Change = VC % Passing #40 = -#40 % Passing #200 = -#200		<u>USCS Symbol</u> GP - Poorly Graded Gravel GW - Well Graded Gravel GM - Silty Gravel GC - Clayey Gravel SP - Poorly Graded Sand SW - Well Graded Sand SM - Silty Sand SC - Clayey Sand ML - Low Plasticity Silty MH - High Plasticity Silt CL - Low Plasticity Clay CH - High Plasticity Clay OL - Low Plasticity Organics OH - High Plasticity Organics CL/ML - Dual Classification (Typical)			⊗ N-value (Blows per 6") 	<u>Consistency From N-Values:</u> For Sands and Silts <table border="1"> <thead> <tr> <th>SPT N Value</th> <th>Consistency</th> </tr> </thead> <tbody> <tr> <td>0-3</td> <td>Very Loose</td> </tr> <tr> <td>4-9</td> <td>Loose</td> </tr> <tr> <td>10-29</td> <td>Medium Dense</td> </tr> <tr> <td>30-49</td> <td>Dense</td> </tr> <tr> <td>50-100</td> <td>Very Dense</td> </tr> </tbody> </table> For Cohesive Soils - Clays <table border="1"> <thead> <tr> <th>SPT N Value</th> <th>Consistency</th> </tr> </thead> <tbody> <tr> <td>0-2</td> <td>Very Soft</td> </tr> <tr> <td>3-4</td> <td>Soft</td> </tr> <tr> <td>5-8</td> <td>Medium Stiff</td> </tr> <tr> <td>9-16</td> <td>Stiff</td> </tr> <tr> <td>17-29</td> <td>Very Stiff</td> </tr> <tr> <td>30-50</td> <td>Hard</td> </tr> <tr> <td>51-100</td> <td>Very Hard</td> </tr> </tbody> </table>	SPT N Value	Consistency	0-3	Very Loose	4-9	Loose	10-29	Medium Dense	30-49	Dense	50-100	Very Dense	SPT N Value	Consistency	0-2	Very Soft	3-4	Soft	5-8	Medium Stiff	9-16	Stiff	17-29	Very Stiff	30-50	Hard	51-100	Very Hard
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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

Boring information including: water levels, dates, and drilling equipment and methods.

Unified Soil Classification System (ASTM Designation D-2487)

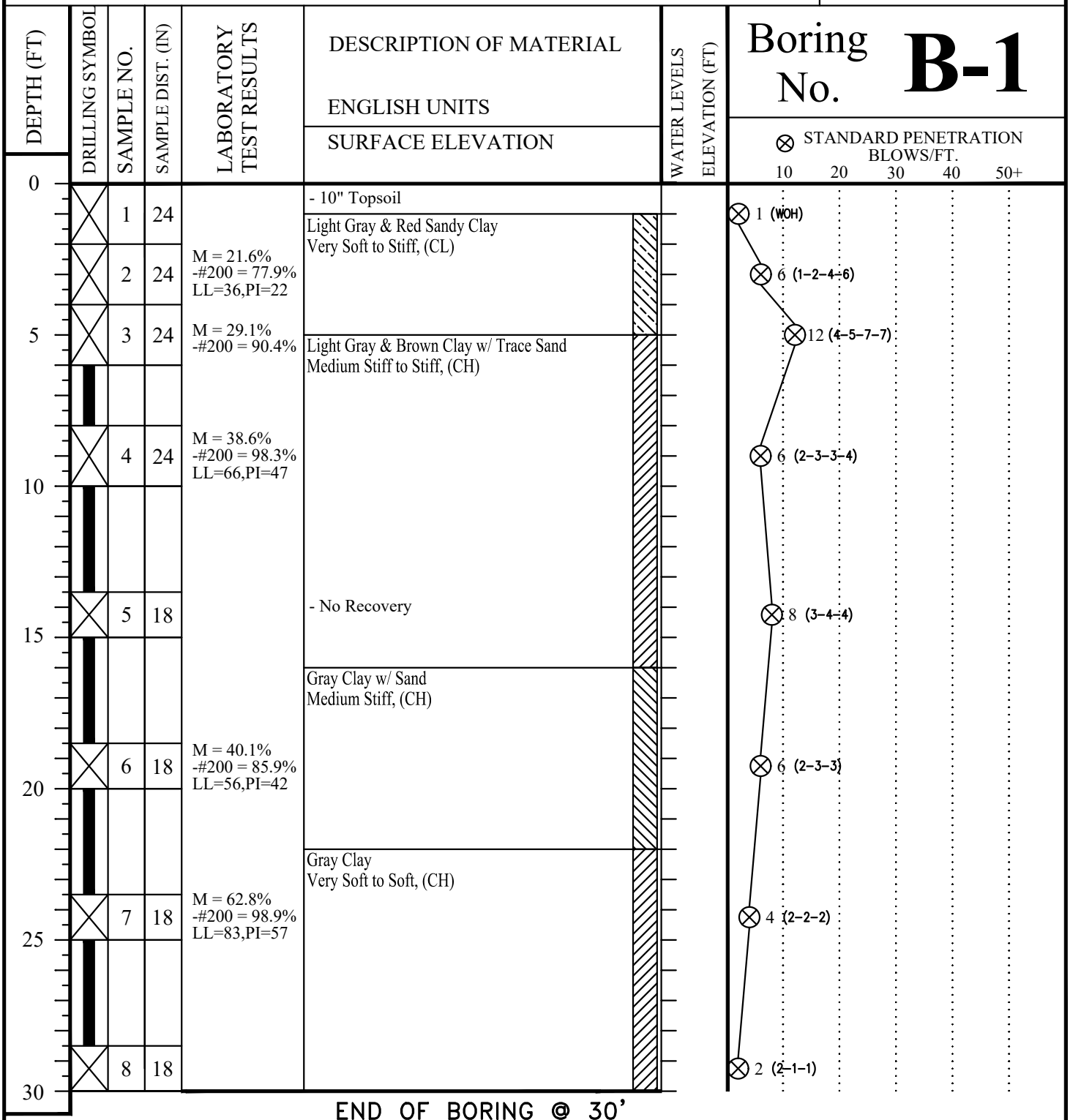
Major Division	Group Symbol	Typical Names	Classification Criteria
Coarse-grained soils More than 50% retaining on No. 200 sieve	Gravels More than 50% of coarse fraction retained on No. 4 sieve	GW	Well-graded gravels and gravel-sand mixtures, little or no fines
		GP	Poorly graded gravels and gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	Sands More than 50% of coarse fraction passes No. 4 sieve	SW	Well-graded sands and gravelly sands, little or no fines
		SP	Poorly graded sands and gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
		ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
	Silty or Clays Liquid limit 50% or less	MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity
Fine grained soils 50% or more passing No. 200 sieve	Silts or Clays Liquid limit greater than 50%	Classification on basis of percentage of fines GW, GP, SW, SP, GM, GC, SM, SC Borderline classification requiring use of dual symbol Less than 5% Pass No. 200 sieve More than 12% Pass No. 200 sieve 5% to 12% Pass No. 200 sieve	
		$C_u = D_{60}/D_{10}$ Greater than 4 $C_z = (D_{30})^2/(D_{10} \times D_{60})$ Between 1 and 3	
		Not meeting both criteria for GW	
		Atterberg limits plot below "A" line or plasticity index less than 4	
		Atterberg limits plot above "A" line and plasticity index greater than 7	
		$C_u = D_{60}/D_{10}$ Greater than 6 $C_z = (D_{30})^2/(D_{10} \times D_{60})$ Between 1 and 3	
		Not meeting both criteria for SW	
		Atterberg limits plot below "A" line or plasticity index less than 4	
		Atterberg limits plot above "A" line and plasticity index greater than 7	
		Note: U-line represents approximate upper limit of LL and PI combinations for natural soils (empirically determined). ASTM-D2487	
		Plasticity chart for the classification of fine-grained soils. Tests made on fraction finer than No. 40 sieve.	
Highly organic soils	Pt	Peat, muck and other highly organic soils	Fibrous organic matter; will char, burn, or glow



**W Geotechnical
and Testing, Inc.**

**UNIFIED SOIL
CLASSIFICATION
SYSTEM**

Project: **Grand Bay NERR**
 Location: **Moss Point, MS**
 Job No.: **G-3028**
 Client: **Unabridged Architecture**



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES IN-SITU THE TRANSITION MAY BE GRADUAL

▽ WL	BORING STARTED 12/29/16	BORING COMPLETED 12/29/16
Page 1 of 1	RIG Truck Company/ Foreman G&E/Wyckoff	DRILLING METHOD Wet Rotary

Job Name: Grand Bay NEER

Job Number: G-3028

Date: 1/2/2017

Boring	Depth	%M	% Passing # 200	LL	PI
B-1	2-4'	21.6%	77.9%	36	22
B-1	4-6'	29.1%	90.4%	-	-
B-1	8-10'	38.6%	98.3%	66	47
B-1	18.5-20	40.1%	85.9%	56	42
B-1	23.5-25	62.8%	98.9%	83	57

SECTION 02231 – TREE/LANDSCAPE PROTECTION AND TRIMMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the protection and trimming of existing trees and other landscape elements that interfere with, or are affected by, execution of the Work, whether temporary or permanent construction.

1.3 DEFINITIONS

- A. Tree/Landscape Protection Zone: Fenced area protecting individual trees or groups of trees and other landscape elements including bushes and ground cover, defining a limit of work outside of which Contractor is not allowed to enter.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Qualification Data: For tree service firm and arborist.
- C. Certification: From arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.

1.5 QUALITY ASSURANCE

- A. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed tree protection and trimming work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site during execution of tree protection and trimming.
- B. Arborist Qualifications: An arborist certified by ISA or licensed in the jurisdiction where Project is located.
- C. Tree Pruning Standard: Comply with ANSI A300 (Part 1), "Tree, Shrub, and Other Woody Plant Maintenance--Standard Practices (Pruning)."

- D. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

- 1. Before tree protection and trimming operations begin, meet with representatives of authorities having jurisdiction, Owner, Architect, consultants, and other concerned entities to review tree protection and trimming procedures and responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Temporary Protection Fencing: Orange vinyl safety barrier fencing, 4'-0" high.
- B. Temporary wood stakes for fence support, minimum spacing 4'-0" o.c.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Temporary Fencing: Install temporary fencing at lines indicated on drawings protecting trees and vegetation from construction damage. Maintain temporary fence and remove when construction is complete.
- B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.
- C. Do not store construction materials, debris, or excavated material inside tree protection zones. Do not permit vehicles or foot traffic within tree protection zones; prevent soil compaction over root systems.
- D. Maintain tree protection zones free of weeds and trash.
- E. Do not allow fires within tree protection zones.

3.2 TREE PRUNING

- A. Prune trees to remain that are affected by temporary and permanent construction.
- B. Prune trees to remain to compensate for root loss caused by damaging or cutting root system. Provide subsequent maintenance during Contract period as recommended by arborist.
- C. Pruning Standards: Prune trees according to ANSI A300 (Part 1)
- D. Cut branches with sharp pruning instruments; do not break or chop.
- E. Chip removed tree branches and stockpile in areas approved by Architect.

3.3 DISPOSAL OF WASTE MATERIALS

- A. Burning is not permitted.
- B. Disposal: Remove excess excavated material and displaced trees from Owner's property.

END OF SECTION 02231

SECTION 02459 – TIMBER PILES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes specifications for furnishing and installing of driven piles for structures.
- B. Supply piles of the following types as indicated:
 - 1. Timber piles, treated and driven.

1.3 REFERENCE STANDARDS

- A. American Association of State Highway and Transportation Officials (AASHTO).
 - 1. AASHTO M-133. Specification for Preservative and Pressure Treatment Process for Timber.
- B. American Wood Preservers' Association (AWPA)
 - 1. M3 Standard Quality Control Procedures for Wood Preserving Plants
 - 2. M4 Standard for the Care of Preservative Treated Wood Products.
 - 3. U1 Use Category System: User Specifications for Treated Wood.

1.4 SUBMITTALS

- A. General: Refer to Contract Requirements for Submittals, Shop Drawings, Product Data and Samples.
- B. Shop Drawings: Submit shop drawings of pile types as follows:
 - 1. Show any structural connections such as for uplift loads.
- C. Pile Driving Record: Maintain a pile driving record during pile driving and submit it to the Architect upon completion of pile driving. On the record indicate, for each pile driven, the pile size, pile tip elevation below grade, overall blow count per foot, and any unusual conditions encountered during driving.

D. Equipment Review and Drawings:

1. Submit complete list of the equipment proposed for use, including a description of the characteristics of each piece of driving equipment.
 - a. The Project Engineer will review the proposed driving equipment, accessories, and methods of adequacy for the conditions expected to be encountered. However, the adequacy of the equipment and accessories shall remain the responsibility of the Contractor. Should the equipment used by the Contractor prove inadequate to drive the scheduled types of piles in the locations indicated, or should the use rate of accessories show damage to the piles, or should the Progress Schedule not be maintained, the Contractor shall replace, or use different types of equipment.
2. Submit shop drawings of driving accessories showing compatibility with the size configuration, handling, and driving requirements of each type of pile indicated on the Contract Drawings.
3. Submit shop drawings showing the methods and equipment proposed for loading test piles.

- E. Submit data on round timber pile treatment data, including certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Handling, storage and field fabrication, including treating of cut ends, shall be in accordance with AWP M4.

PART 2 - PRODUCTS

2.1 TIMBER PILES

- A. Square Timber Piles: Piles shall be Southern Pine, number 2 or better, treated, one piece from butt to tip.
- B. Pressure treatment shall be in accordance with AWP Use Category Standard UC5B.
- C. Field treatment of cut ends and holes shall be in accordance with AWP M4.
- D. Preservatives and Retentions: Minimum of 2.5 CCA
- E. Fabrication
 1. Field-Applied Wood Preservative: Treat field cuts, holes, and other penetrations in accordance with AWP M4.

PART 3 - EXECUTION

3.1 PILE TYPES

- A. Piles are friction type. Drive friction piles to the required penetration as indicated.

3.2 INSTALLATION OF PILES

- A. General: Provide piles of the type and length indicated
- B. Penetration: Install piles to the required penetration.
- C. Pile Driving:
 - 1. If necessary, provide adequate lateral support for installed individual piles to prevent excessive temporary flexural stresses or movement of the pile top out of tolerance.
 - 2. Maintain the hammer coaxial with the pile during the driving operation by using a combination of driving cap and leads.
 - 3. Investigate any sudden decrease in driving resistance for possible breakage of the pile. If sudden decrease in driving resistance cannot be correlated to boring data or some incident in the driving, and if the pile cannot be inspected, such decrease in driving resistance may be cause for rejection of the pile.
 - 4. Re-drive any pile which is raised during driving of adjacent piles, to the original tip elevation.
 - 5. Cut off piles at top elevation indicated. Replace or repair piles which are damaged when cut off.
- D. Installation Tolerances:
 - 1. Deviation from plumb and angle of batter: 1/4 inch per foot of pile length, but not more than 6 inches overall.
 - 2. Deviation from location of pile top: 2 inches.
- E. When the area of the head of a timber pile is greater than that of the face of the hammer, use a suitable cap to distribute the blows throughout the cross section of the pile.
- F. After timber piles are cut off, treat cut surfaces in accordance with AWP A M4. Remove cutoff sections of piles from the site and legally dispose.

END OF SECTION 02459

SECTION 31 66 13 HELICAL PILES

1. GENERAL

1.1 Purpose of Specification

The purpose of this specification is to detail the furnishing of all designs, materials, tools, equipment, labor and supervision, and installation techniques necessary to install Helical Piles as detailed on the drawings, including connection details. This shall include provisions for load testing that may be part of the scope of work

1.2 Scope of Work

This work consists of furnishing all necessary site investigations, including geotechnical investigations, engineering and design services by Helical Pile Engineer, supervision, labor, tools, materials, and equipment to perform all work necessary to install the Helical Piles per the specifications described herein, and as shown on the drawings. The Contractor shall install a Helical Pile that will develop the load capacities as detailed on the drawings. This may also include provisions for load testing to verify Helical Pile capacity and deflection, if part of the scope of work. The responsibilities and duties of the respective parties for this project are summarized in Table-1.

Table-1. Tasks and Responsibilities to be Allocated for Helical Pile Work

TASK		RESPONSIBLE PARTY
1	Site Investigation, Geotechnical Investigation, Site Survey, and potential work restrictions	Contractor
2	Obtaining easements	Owner
3	Overall scope of work – including design loads (vertical, horizontal, etc.), pile locations, and pile spacing and orientation	Owner
4	Definition of safety factors	Owner
5	Allowable Helical Pile movement in service (acceptance criteria)	Owner
6	Required degree of corrosion protection based on site conditions	Owner
7	Design of Helical Piles for specified loads and criteria. Hire Helical Pile Engineer.	Contractor
9	Minimum total Helical Pile length, depth to bearing stratum	Contractor
10	Helical Pile components and details	Contractor
11	Details of corrosion protection	Contractor
12	Details of pile connection to structure (e.g., for static and seismic conditions)	Contractor
13	Preparation of Drawings and test reports	Contractor
14	Evaluation of test results	Contractor
15	Construction methods, schedule, sequencing, and coordination of work	Contractor
16	Requirements of field production control, including logging of installation torque vs. installed depth	Contractor
17	Supervision of work	Contractor

1.3 Qualifications of the Helical Pile Contractor

The Helical Pile Contractor shall be experienced in performing design and construction of Helical Piles and shall furnish all professional engineering design design, materials, labor, and supervision to perform the work. The Contractor shall be trained and certified by the helical pile supplier in the proper methods of design and installation of Helical Piles. The Contractor shall provide names of on-site personnel materially involved with the work, including those who carry documented certification from the helical pile supplier. At a minimum, these personnel shall include foreman, machine operator, and project engineer/manager.

The Helical Pile Contractor shall not sublet the whole or any part of the contract without the express written permission of the Owner.

1.4 Definitions

Contractor: The person/firm responsible for performing the Helical Pile work.

Coupling: Central steel shaft connection means formed as integral part of the plain extension shaft material. For Type SS & RS Helical Piles, couplings are internal or external sleeves, or hot upset forged sockets.

Coupling Bolt(s): High strength, structural steel fasteners used to connect Helical Pile segments together. For Type SS segments, the coupling bolt transfers axial load. For Type RS segments, the coupling bolts transfer both axial and torsional forces.

Helical Extension: Helical Pile foundation component installed immediately following the lead or starter section, if required. This component consists of one or more helical plates welded to a central steel shaft of finite length. Function is to increase bearing area.

Helix Plate: Generally round steel plate formed into a ramped spiral. The helical shape provides the means to install the helical pile, plus the plate transfers load to soil in end bearing. Helix plates are available in various diameters and thickness.

HELICAL PULLDOWN[®] Micropile: A small diameter, soil displacement, cast-in-place Helical Pile, in which most of the applied load is resisted by the central steel shaft and steel reinforcement, if installed. Load transfer to soil is both end bearing and friction.

Helical Pile: A bearing type foundation element consisting of a lead or starter section, helical extension (if so required by site conditions), plain extension section(s), and a pile cap. A.k.a. helical screw pile, screw pile, helical screw foundation.

Helical Pile Engineer: Professional engineer, licensed in the state of Mississippi, in responsible charge of the design of the project's Helical Piles. Helical Pile Engineer shall be the Engineer of Record for the Helical Piles. Helical Pile Engineer is contracted by the Contractor.

Installation Torque(T): The resistance generated by a Helical Pile when installed into soil. The installation resistance is a function of the soil type, and size and shape of the various components of the Helical Pile.

Lead Section: The first Helical Pile foundation component installed into the soil, consisting of single or multiple helix plates welded to a central steel shaft. A.k.a. Starter Section.

Pile Cap: Connection means by which structural loads are transferred to the Helical Pile. The type of connection varies depending upon the requirements of the project and type of Helical Pile material used.

Round Shaft (RS): Round steel pipe central Shaft elements ranging in diameter from 2-7/8" to 10". A.k.a. Hollow Shaft (Type HS), Type T/C, Type PIF.

Plain Extension: Central steel shaft segment without helix plates. It is installed following the installation of the lead section or helical extension (if used). The segments are connected with integral couplings and bolts.

Plain extensions are used to extend the helix plates beyond the specified minimum depth and into competent load bearing stratum.

Safety Factor: The ratio of the ultimate capacity to the working or design load used for the design of any structural element.

Square Shaft (SS): Solid steel, round-cornered-Square central Shaft elements ranging in size from 1-1/4" to 2-1/4". A.k.a. Type SQ.

Torque Strength Rating: The maximum torque energy that can be applied to the helical pile foundation during installation in soil, a.k.a. allowable, or safe torque.

1.5 Allowable Tolerances

The tolerances quoted in this section are suggested maximums. The actual values established for a particular project will depend on the structural application.

1.5.1 Centerline of Helical Piles shall not be more than 3 inches from indicated plan location.

1.5.2 Helical Pile plumbness shall be within 2° of design alignment.

1.5.3 Top elevation of Helical Pile shall be within +1 inch to -2 inches of the design vertical elevation.

1.6 Quality Assurance

1.6.1 Helical Piles shall be installed by a Contractor authorized and certified by helical pile supplier. These Contractors shall have satisfied the certification requirements relative to the technical aspects of the product and installation procedures as therein specified. Certification documents shall be provided upon request to the Owner or their representative.

1.6.2 The Contractor shall employ an adequate number of skilled workers who are experienced in the necessary crafts and who are familiar with the specified requirements and methods needed for proper performance of the work of this specification.

1.6.3 All Helical Piles shall be installed in the presence of a designated representative of the Owner unless said representative informs the Contractor otherwise. The designated representative shall have the right of access to any and all field installation records and test reports.

1.6.4 Helical Pile components as specified therein shall be manufactured by a facility whose quality systems comply with ISO (International Organization of Standards) 9001 requirements. Certificates of Registration denoting ISO Standards Number shall be presented upon request to the Owner or their representative.

1.6.5 Helical pile supplier shall provide a standard one-year warranty on materials and workmanship of the products provided. Any additional warranty provided by the Contractor shall be issued as an addendum to this specification.

1.6.6 Hire Helical Pile Engineer for the design of Helical Piles.

1.7 Design Criteria

1.7.1 Helical Piles shall be designed by Helical Pile Engineer to meet the specified loads and acceptance criteria as shown on the drawings. The calculations, sealed and signed by a licensed professional engineer licensed to practice in the state of Mississippi and drawings required from the Contractor or Engineer shall be submitted to the Owner for review in accordance to Section 3.1 "Construction Submittals".

1.7.2 It is recommended that the theoretical end-bearing capacity of the helix plates be determined using HeliCAP[®] Engineering Software or equal commercially available software. Regardless if design method used, the required soil parameters (c , ϕ , γ , or N-values) for used for design shall be determined by the Contractor based on site specific geotechnical investigations.

1.7.3 Lateral Load and Bending: Where Helical Piles are subjected to lateral or base shear loads as indicated on the plans, the bending moment from said loads shall be determined using lateral load analysis program such as LPILE or equal commercially available software. The required soil parameters (c , ϕ , γ , and k_s) for use with LPILE or equal shall be based on site specific soil conditions determined by the Contractor based on site specific geotechnical investigations.

1.7.4 Critical Buckling Load: The critical buckling load of Helical Piles shall be determined using lateral load analysis program such as LPILE or equal commercially available software, or various other methods. The required soil parameters (c , ϕ , γ , and k_s) for use with LPILE or equal shall be based on site specific soil conditions determined by the Contractor.

1.7.5 Down-Drag/Negative Skin Friction: Where site specific geotechnical soil conditions produce down drag/negative skin friction, piles shall be designed for the downward force in addition to the forces shown on the drawings.

1.7.6 Corrosion Protection: All components of Helical Pile system shall be hot dipped galvanized.

1.8 Ground Conditions

1.8.1 The Geotechnical Investigation has not been conducted. Prior to design, Contractor shall conduct all necessary geotechnical investigations.

1.9 REFERENCED CODES AND STANDARDS

Standards listed by reference, including revisions by issuing authority, form a part of this specification section to the extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title, or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation. In case of conflict, the particular requirements of this specification shall prevail. The latest publication as of the issue of this specification shall govern, unless indicated otherwise.

- 1.9.1 American Society for Testing and Materials (ASTM):
- 1.9.2 ASTM A29/A29M Steel Bars, Carbon and Alloy, Hot-Wrought and Cold Finished.
- 1.9.3 ASTM A36/A36M Structural Steel.
- 1.9.4 ASTM A53 Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
- 1.9.5 ASTM A153 Zinc Coating (Hot Dip) on Iron and Steel Hardware.
- 1.9.6 ASTM A252 Welded and Seamless Steel Pipe Piles.
- 1.9.7 ASTM A775 Electrostatic Epoxy Coating
- 1.9.8 ASTM A193/A193M Alloy-Steel and Stainless Steel Bolting Materials for High Temperature Service.
- 1.9.9 ASTM A320/A320M Alloy-Steel Bolting Materials for Low Temperature Service.
- 1.9.10 ASTM A325 Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
- 1.9.11 ASTM A500 Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
- 1.9.12 ASTM A513 Standard Specification for Electric Resistance Welded Carbon and Alloy Steel Mechanical Tubing.
- 1.9.13 ASTM A536 Standard Specifications for Ductile Iron Castings
- 1.9.14 ASTM A572 HSLA Columbium-Vanadium Steels of Structural Quality.
- 1.9.15 ASTM A618 Hot-Formed Welded and Seamless High-Strength Low-Alloy Structural Tubing.
- 1.9.16 ASTM A656 Hot-Rolled Structural Steel, High-Strength Low-Alloy Plate with Improved Formability.
- 1.9.17 ASTM A958 Standard Specification for Steel Castings, Carbon, and Alloy, with Tensile Requirements, Chemical Requirements Similar to Wrought Grades.
- 1.9.18 ASTM A1018 Steel, Sheet and Strip, Heavy Thickness Coils, Hot Rolled, Carbon, Structural, High-Strength Low-Alloy, Columbium or Vanadium, and High-Strength Low-Alloy with Improved Formability.
- 1.9.19 ASTM D1143 Method of Testing Piles Under Static Axial Compressive Load.
- 1.9.20 ASTM D3689 Method of Testing Individual Piles Under Static Axial Tensile Load.
- 1.9.21 American Welding Society (AWS):
- 1.9.22 AWS D1.1 Structural Welding Code – Steel.
- 1.9.23 AWS D1.2 Structural Welding Code – Reinforcing Steel.
- 1.9.24 American Society of Civil Engineers (ASCE):
- 1.9.25 ASCE 20-96 Standard Guidelines for the Design and Installation of Pile Foundations.

- 1.9.26 Deep Foundations Institute (DFI):
- 1.9.27 Guide to Drafting a Specification for High Capacity Drilled and Grouted Micropiles for Structural Support, 1st Edition, Copyright 2001 by the Deep Foundation Institute (DFI).
- 1.9.28 Society of Automotive Engineers (SAE):
- 1.9.29 SAE J429 Mechanical and Material Requirements for Externally Threaded Fasteners.

1.10 SUBMITTALS

1.11 Construction Submittals

- 1.11.1 The Contractor shall prepare and submit to the Owner working drawings and design calculations for the Helical Piles intended for use at least 14 calendar days prior to planned start of construction (but note also Paragraph 3.1.8). All submittals shall be signed and sealed by a Registered Professional Engineer currently licensed in the State of Mississippi.
- 1.11.2 The Contractor shall submit a detailed description of the construction procedures proposed for use to the Owner for review. This shall include a list of major equipment to be used.

1.12 The Working Drawings shall include the following:

- 1.12.1 Helical Pile number, location and pattern by assigned identification number
- 1.12.2 Helical Pile design load
- 1.12.3 Type and size of central steel shaft
- 1.12.4 Helix configuration (number and diameter of helix plates)
- 1.12.5 Minimum effective installation torque
- 1.12.6 Minimum overall length
- 1.12.7 Inclination of Helical Pile
- 1.12.8 Cut-off elevation
- 1.12.9 Helical Pile attachment to structure relative to grade beam, column pad, pile cap, etc.
- 1.12.10 The Contractor shall submit shop drawings for all Helical Pile components, including corrosion protection and pile top attachment to the Owner for review and approval. This includes Helical Pile lead/starter and extension section identification (manufacturer's catalog numbers).

1.13 Installation Records

The Contractor shall provide the Owner copies of Helical Pile installation records within 24 hours after each installation is completed. Records shall be prepared in accordance with the specified division of responsibilities as noted in Table-1. Formal copies shall be submitted on a weekly basis. These installation records shall include, but are not limited to, the following information.

- 1.13.1 Name of project and Contractor
- 1.13.2 Name of Contractor's supervisor during installation

- 1.13.2.1 Date and time of installation
- 1.13.3 Name and model of installation equipment
- 1.13.4 Type of torque indicator used
- 1.13.5 Location of Helical Pile by assigned identification number
- 1.13.6 Actual Helical Pile type and configuration – including lead section (number and size of helix plates), number and type of extension sections (manufacturer's SKU numbers)
- 1.13.7 Helical Pile installation duration and observations
- 1.13.8 Total length of installed Helical Pile
- 1.13.9 Cut-off elevation
- 1.13.10 Inclination of Helical Pile
- 1.13.11 Installation torque at one-foot intervals for the final 10 feet
- 1.13.12 Comments pertaining to interruptions, obstructions, or other relevant information
- 1.13.13 Rated load capacities

1.14 Closeout Submittals

- 1.14.1 Warranty: Warranty documents specified herein
- 1.14.2 Project Warranty: Refer to Conditions of the Contract for project warranty provisions
Warranty Period: 10 years commencing on date of Substantial Completion
- 1.14.3 Manufacturer's Warranty: Submit, for Owner's Acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights the Owner may have under Contract Document.

2 PRODUCTS AND MATERIALS

2.1 Central Steel Shaft:

The central steel shaft, consisting of lead sections, helical extensions, and plain extensions, shall be as required by design.

2.2 Helix Bearing Plate:

Shall be hot rolled carbon steel sheet, strip, or plate formed on matching metal dies to true helical shape and uniform pitch as required by design.

2.3 Bolts:

The size and type of bolts used to connect the central steel shaft sections together shall conform to the requirements of design.

2.4 Couplings:

Coupling shall meet requirements of design.

2.5 Plates, Shapes, or Pile Caps:

Depending on the application, the pile cap shall be a welded assembly consisting of structural steel plates and shapes designed to fit the pile and transfer the applied load. Structural steel plates and shapes for HELICAL PILE top attachments shall conform to ASTM A36 or ASTM A572 Grade 50.

2.6 Corrosion Protection (Optional)

Galvanization: Hot-dipped galvanized in accordance with ASTM A153 after fabrication.

3 EXECUTION

3.1 Site Conditions

- 3.1.1 Prior to commencing Helical Pile installation, the Contractor shall inspect the work of all other trades and verify that all said work is completed to the point where Helical Piles may commence without restriction.
- 3.1.2 The Contractor shall verify that all Helical Piles may be installed in accordance with all pertinent codes and regulations regarding such items as underground obstructions, right-of-way limitations, utilities, etc.
- 3.1.3 In the event of a discrepancy, the Contractor shall notify the Owner. The Contractor shall not proceed with Helical Pile installation in areas of discrepancies until said discrepancies have been resolved. All costs associated with unresolved discrepancies shall be the responsibility of the Owner.

3.2 Installation Equipment

- 3.2.1 Shall be rotary type, hydraulic power driven torque motor with clockwise and counter-clockwise rotation capabilities. The torque motor shall be capable of continuous adjustment to revolutions per minute (RPM's) during installation. Percussion drilling equipment shall not be permitted. The torque motor shall have torque capacity 15% greater than the torsional strength rating of the central steel shaft to be installed.
- 3.2.2 Equipment shall be capable of applying adequate down pressure (crowd) and torque simultaneously to suit project soil conditions and load requirements. The equipment shall be capable of continuous position adjustment to maintain proper Helical Pile alignment.

3.3 Installation Tooling

- 3.3.1 A torque indicator shall be used during Helical Pile installation. The torque indicator can be an integral part of the installation equipment or externally mounted in-line with the installation tooling. Torque indicators are available from CHANCE Civil Construction.
- 3.3.1.a Shall be capable of providing continuous measurement of applied torque throughout the installation.
- 3.3.1.b Shall be capable of torque measurements in increments of at least 500 ft-lb
- 3.3.1.c Shall be calibrated prior to pre-production testing or start of work. Torque indicators which are an integral part of the installation equipment, shall be calibrated on-site. Torque indicators which are mounted in-line with the installation tooling, shall be calibrated either on-site or at an appropriately equipped test facility. Indicators that measure torque as a function of hydraulic pressure shall be calibrated at normal operating temperatures.
- 3.3.1.d Shall be re-calibrated, if in the opinion of the Owner and/or Contractor reasonable doubt exists as to the accuracy of the torque measurements.

3.4 Installation Procedures

3.4.1 Central Steel Shaft: (Lead and Extension Sections)

- 3.4.1.a The Helical Pile installation technique shall be such that it is consistent with the geotechnical, logistical, environmental, and load carrying conditions of the project.
- 3.4.1.b The lead section shall be positioned at the location as shown on the working drawings. Battered Helical Piles can be positioned perpendicular to the ground to assist in initial advancement into the soil before the required batter angle shall be established. The Helical Pile sections shall be engaged and advanced into the soil in a smooth, continuous manner at a rate of rotation of 5 to 20 RPM's. Extension sections shall be provided to obtain the required minimum overall length and installation torque as shown on the working drawings. Connect sections together using coupling bolt(s) and nut torqued to 40 ft-lb.
- 3.4.1.c Sufficient down pressure shall be applied to uniformly advance the Helical Pile sections approximately 3 inches per revolution. The rate of rotation and magnitude of down pressure shall be adjusted for different soil conditions and depths.

3.5 Termination Criteria

- 3.5.1 The torque as measured during the installation shall not exceed the torsional strength rating of the central steel shaft.
- 3.5.2 The minimum installation torque and minimum overall length criteria as shown on the working drawings shall be satisfied prior to terminating the Helical Pile installation.
- 3.5.3 If the torsional strength rating of the central steel shaft and/or installation equipment has been reached prior to achieving the minimum overall length required, the Contractor shall have the following options:

- 3.5.3.a Contact Helical Pile Engineer for design solution. Document solution and submit to Owner for record. Solution shall maintain same point of support of structure above.
- 3.5.4 If the Helical Pile is refused or deflected by a subsurface obstruction, the installation shall be terminated and a pile remedy developed by the Helical Pile Engineer. Helical Pile solution shall not alter point of support of structure above and shall be submitted to Owner for record.
- 3.5.5 If the torsional strength rating of the central steel shaft and/or installation equipment has been reached prior to proper positioning of the last plain extension section relative to the final elevation, the Contractor may remove the last plain extension and replace it with a shorter length extension. If it is not feasible to remove the last plain extension, the Contractor may cut said extension shaft to the correct elevation. The Contractor shall not reverse (back-out) the Helical Pile to facilitate extension removal.
- 3.5.6 The average torque for the last three feet of penetration shall be used as the basis of comparison with the minimum installation torque as shown on the working drawings. The average torque shall be defined as the average of the last three readings recorded at one-foot intervals.

END OF SPECIFICATION

SECTION 05521 - PIPE AND TUBE RAILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Aluminum pipe and tube railings with aluminum plate supports.

1.3 PERFORMANCE REQUIREMENTS

- A. General: In engineering railings to withstand structural loads indicated, determine allowable design working stresses of railing materials based on the following:
 - 1. Aluminum: The lesser of minimum yield strength divided by 1.65 or minimum ultimate tensile strength divided by 1.95.
- B. Structural Performance: Provide railings capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Handrails:
 - a. Uniform load of 50 lbf/ ft. applied in any direction.
 - b. Concentrated load of 200 lbf applied in any direction.
 - c. Uniform and concentrated loads need not be assumed to act concurrently.
- C. Thermal Movements: Provide exterior railings that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.
- D. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.4 SUBMITTALS

- A. Product Data: For the following:

1. Manufacturer's product lines of mechanically connected railings.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
 1. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- C. Samples for Initial Selection: For products involving selection of color, texture, or design.
- D. Samples for Verification: For each type of exposed finish required.
 1. Sections of each distinctly different linear handrail member.
 2. Fittings and brackets.
 3. Assembled sample of railing system, made from full-size components, including top rail, post, and handrail. Sample need not be full height.
- E. Welding certificates.
- F. Qualification Data: For professional engineer.
- G. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, according to ASTM E 894 and ASTM E 935.

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of railing through one source from a single manufacturer.
- B. Welding: Qualify procedures and personnel according to the following:
 1. AWS D1.2, "Structural Welding Code--Aluminum."

1.6 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with railings by field measurements before fabrication and indicate measurements on Shop Drawings.
 1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating railings without field measurements. Coordinate wall and other contiguous construction to ensure that actual dimensions correspond to established dimensions.
 2. Provide allowance for trimming and fitting at site.

1.7 COORDINATION AND SCHEDULING

- A. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- B. Schedule installation so wall attachments are made only to completed walls. Do not support railings temporarily by any means that do not satisfy structural performance requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Aluminum Pipe and Tube Railings:
 - a. Blum, Julius & Co., Inc.
 - b. Braun, J. G., Company; a division of the Wagner Companies.
 - c. Hollaender Manufacturing Company.
 - d. Wagner, R & B, Inc.; a division of the Wagner Companies.
 - e. Or a pre-approved equal.

2.2 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.
- B. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails, unless otherwise indicated.

2.3 ALUMINUM

- A. Aluminum, General: Provide alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than the strength and durability properties of alloy and temper designated below for each aluminum form required.
- B. Extruded Bars and Tubing: ASTM B 221, Alloy 6063-T5/T52.
- C. Drawn Seamless Tubing: ASTM B 210, Alloy 6063-T832.
- D. Plate and Sheet: ASTM B 209, Alloy 6061-T6.
- E. Die and Hand Forgings: ASTM B 247, Alloy 6061-T6.

- F. Castings: ASTM B 26/B 26M, Alloy A356.0-T6.

2.4 FASTENERS

- A. General: Provide the following:
 - 1. Aluminum Railings: Type 304 stainless-steel fasteners.
- B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.
- C. Anchors: Provide cast-in-place anchors, fabricated from corrosion-resistant materials with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.

2.5 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
 - 1. For aluminum railings, provide type and alloy as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.
- B. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- C. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound.
 - 1. Water-Resistant Product: At exterior locations and where indicated provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended by manufacturer for exterior use.

2.6 FABRICATION

- A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.
- B. Assemble railings in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.

- C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- D. Form work true to line and level with accurate angles and surfaces.
- E. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.
- G. Connections: Fabricate railings with either welded or nonwelded connections, unless otherwise indicated.
- H. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove flux immediately.
 - 4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.
- I. Welded Connections for Aluminum Pipe: Fabricate railings to interconnect members with concealed internal welds that eliminate surface grinding, using manufacturer's standard system of sleeve and socket fittings.
- J. Form changes in direction as follows:
- K. Close exposed ends of railing members with prefabricated end fittings.
- L. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated. Close ends of returns unless clearance between end of rail and wall is 1/4 inch or less.
- M. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work, unless otherwise indicated.
 - 1. At brackets and fittings fastened to plaster or gypsum board partitions, provide fillers made from crush-resistant material, or other means to transfer wall loads through wall finishes to structural supports and prevent bracket or fitting rotation and crushing of substrate.
- N. Provide inserts and other anchorage devices for connecting railings to concrete or masonry work. Fabricate anchorage devices capable of withstanding loads imposed by railings. Coordinate anchorage devices with supporting structure.
- O. For railing posts set in concrete, provide steel sleeves not less than 6 inches long with inside dimensions not less than 1/2 inch greater than outside dimensions of post, with steel plate forming bottom closure.

2.7 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- D. Provide exposed fasteners with finish matching appearance, including color and texture, of railings.

2.8 ALUMINUM FINISHES

- A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
 - 1. Clear Anodized

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine wood assemblies, to verify that locations of brackets have been clearly marked for Installer. Locate and mark locations if not already done.

3.2 INSTALLATION, GENERAL

- A. Fit exposed connections together to form tight, hairline joints.
- B. Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.
 - 1. Do not weld, cut, or abrade surfaces of railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
 - 2. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
 - 3. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.

- C. Corrosion Protection: Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.
- D. Adjust railings before anchoring to ensure matching alignment at abutting joints.
- E. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

3.3 RAILING CONNECTIONS

- A. Nonwelded Connections: Use mechanical or adhesive joints for permanently connecting railing components. Use wood blocks and padding to prevent damage to railing members and fittings. Seal recessed holes of exposed locking screws using plastic cement filler colored to match finish of railings.
- B. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in Part 2 "Fabrication" Article whether welding is performed in the shop or in the field.
- C. Expansion Joints: Install expansion joints at locations indicated but not farther apart than required to accommodate thermal movement. Provide slip-joint internal sleeve extending 2 inches beyond joint on either side, fasten internal sleeve securely to 1 side, and locate joint within 6 inches of post.

3.4 ANCHORING POSTS

- A. Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions.
- B. Form or core-drill holes not less than 5 inches deep and 3/4 inch larger than OD of post for installing posts in concrete. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions.
- C. Cover anchorage joint with flange of same metal as post, welded to post after placing anchoring material.
- D. Leave anchorage joint exposed; wipe off surplus anchoring material; and leave 1/8-inch buildup, sloped away from post.
- E. Anchor posts to metal surfaces with oval flanges, angle type, or floor type as required by conditions, connected to posts and to metal supporting members as follows:
 - 1. For aluminum pipe railings, attach posts using fittings designed and engineered for this purpose.
- F. Install removable railing sections, where indicated, in slip-fit metal sockets cast in concrete.

3.5 ADJUSTING AND CLEANING

- A. Clean aluminum and stainless steel by washing thoroughly with clean water and soap and rinsing with clean water.
- B. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
- C. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Division 9 painting Sections.
- D. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

3.6 PROTECTION

- A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.
- B. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 05521

SECTION 06100 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. All materials and labor for:
 - 1. Timber framing
 - 2. Light wood framing
 - 3. Wood blocking, bridging, and nailers
 - 4. Connecting hardware, fasteners, and accessories

1.2 QUALITY ASSURANCE

- A. All dimension lumber and engineered wood products shall bear a legible grade stamp of a certified lumber grading agency.
- B. Grading of southern pine lumber shall be according to the Southern Pine Inspection Bureau rules.
- C. Each piece or bundle of treated wood products shall bear a legible third-party quality mark or tag indicating the name of the treater, date of treatment or lot number, and the American Wood Preservers' Association (AWPA) Specification symbol to which the treatment conforms.

1.3 SUBMITTALS

- A. Submit shop drawings and product data, describe materials, fasteners, fastening methods, accessories, and locations.
- B. Submit documentation of wood treatment facility's qualifications and compliance with American Wood Preserver's Association (AWPA) standards.

PART 2 - PRODUCTS

2.1 WOOD MATERIALS

- A. New material:

1. Dimension lumber (2-inches to 4-inches thick): No. 1 Grade Southern Pine visually graded according to the published grading rules of the Southern Pine Inspection Bureau.
 2. End grain of all timbers shall be coated with paraffin wax or approved sealer at the mill or immediately after treatments, prior to shipping.
- B. Blocking and bridging shall be No. 1 Grade Southern Pine, unless otherwise noted.
- C. Shims shall be 100% heart wood, taper-sawn or split, southern pine, white oak, cypress, or eastern red cedar.

2.2 PRESERVATIVE TREATMENT

- A. All lumber and timber shall be preservative treated as specified herein.
- B. Preservative Treatment: Comply with applicable requirements of AWP A U1, Use Category 4B. Provide treatment after members are shaped with Alkaline Copper Quaternary (ACQ) or Copper Azole (CA) preservative by vacuum pressure full-cell process in accordance with AWP A Standard Specification P5.
- C. Kiln dry members after treatment to 15% MC. Mark each treated item with the Quality Mark Requirements of an inspection agency approved by ALSC's Board of Review. Re-grade and re-stamp lumber after kiln drying in accordance with lumber producer's grading rules.
- D. Copper naphthenate solution (2% copper) for field treatment in accordance with AWP A M4. The following products are approved:
1. Behr #90 Dock and Post Preservative
 2. WM Barr Kleen Strip Coppo-W Exterior Wood Preservative
 3. Green's CopperGreen
 4. Jasco Termin-8
 5. Cuprinol Green #10

2.3 STORAGE AND HANDLING

- A. All wood products shall be placed on blocking so that the material does not sag and is completely out of ground-contact.
- B. All wood products shall be protected from rain and direct sunlight.

2.4 FASTENERS, ADHESIVES, & ACCESSORY MATERIALS

- A. All structural fasteners shall be hot dip galvanized, stainless steel, or as noted on the drawings
- B. Nails: common wire nails of the size shown on the Drawings.
- C. Wood Screws: where permitted, unless otherwise noted, wood screws shall be self drilling, square-drive screws, in the diameter and length shown on the Drawings. Where length is not given, the length shall be sufficient to develop the full shear capacity of the screw in the main member.
- D. Lag screws, bolts, nuts, and washers: ASTM A 307, Grade A, unless otherwise noted. Washers against wood or on oversized or slotted holes in steel shall be heavy plate washers.

PART 3 - EXECUTION

3.1 EXISTING CONDITIONS

- A. Verify all dimensions and existing conditions in the field.
- B. Verify that surfaces are ready to receive work.
- C. Beginning of installation means acceptance of existing conditions.

3.2 CUTTING & FITTING

- A. Accurately measure or scribe members before cutting. Make all cuts clean and true to mating surfaces.
- B. All lumber and timber shall be accurately cut and framed to a close fit so that the joints will have even bearing over the entire contact surface.
- C. Mortises shall be true to size for their full depth and tenons shall make a snug, but not a driven, fit.
- D. Set and secure materials and components in place, plumb, and level.
- E. Set carpentry work accurately to required levels and lines, with members plumb and true and accurately cut and fitted.
- F. Treat all field-cuts of existing and new treated material with an approved preservative. Apply preservative field treatment to any cut, bored, drilled or adzed surfaces of treated wood.

3.3 CONNECTIONS

- A. Nail length and spacing in reconstructed work shall be based on original work or as directed.
- B. Templates or mockups are required for all connecting hardware.
- C. Bolts:
 - 1. Each bolt hole in the historic timber shall be laid out clearly prior to drilling using a template or by pre-assembling the connectors so that the hole is drilled correctly the first time. Mistakes in drilling of holes will not be tolerated.
 - 2. Bolt holes shall be 1/16-inch larger diameter than the specified bolt diameter.
 - 3. Bolt holes shall be drilled using a self-centering, side-spur auger that produces a smooth, straight hole. Spade (paddle) bits are not allowed.
 - 4. Bolt holes shall not be enlarged or redirected anywhere along their length.
 - 5. Bolt holes shall be installed perpendicular to the face of the structural member. The maximum deviation from perpendicular shall be 2-degrees.
 - 6. All bolts installed outside of the specified tolerance shall be considered unacceptable.
- D. Roof sheathing shall be nailed with at least two 10d common nails at each support. Sheathing shall be laid perpendicular to the rafters, continuous over three or more supports, with joints staggered.

3.4 MISCELLANEOUS

- A. Bridging and blocking shall be framed neatly and accurately and securely toe-nailed with at least two nails in each end.
- B. Bridging shall be provided as follows:
 - 1. new work, in rows at midspan and 8-feet on-center, and over supports;
 - 2. areas that are reconstructed, where original bridging is removed or missing, or where existing joists are strengthened, provide bridging at locations of original bridging; and,
 - 3. Where shown on the Drawings or as required to prevent warping or twisting of installed materials.
- C. Blocking shall be provided as shown on the Drawings, as required to accomplish the work, and as required by the Building Official.

- D. Shimming shall be provided as shown and as directed by the Engineer. Shims shall be used where required by good practice and as necessary due to existing conditions, but shall not be used to make up for lack of fit or poor workmanship.

END OF SECTION 06100

SECTION 06150 - WOOD DECKING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Solid-sawn wood floor decking.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
 - 1. For preservative-treated wood products, include chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
- B. Samples: 24 inches long, showing the range of variation to be expected in appearance of wood decking.

1.4 QUALITY ASSURANCE

- A. Standard for Solid-Sawn Wood Decking: Comply with AITC 112.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Schedule delivery of wood decking to avoid extended on-site storage and to avoid delaying the Work.
- B. Store materials under cover and protected from weather and contact with damp or wet surfaces. Provide for air circulation within and around stacks and under temporary coverings. Stack wood decking with surfaces that are to be exposed in the final Work protected from exposure to sunlight.

PART 2 - PRODUCTS

2.1 WOOD DECKING, GENERAL

- A. General: Comply with DOC PS 20 and with applicable grading rules of inspection agencies certified by ALSC's Board of Review.
- B. Moisture Content: Provide wood decking with 19 percent maximum moisture content at time of dressing.

2.2 SOLID-SAWN WOOD DECKING

- A. Decking Species: No. 1 grade Southern pine.
- B. Decking Nominal Size: dimensions and profile to match original members.
- C. Decking Grade: Dense Commercial Decking.
- D. Grade Stamps: Factory mark each item with grade stamp of grading agency. Apply grade stamp to surfaces that will not be exposed to view.
- E. Face Surface: Smooth.
- F. Preservative Treatment: Pressure treat solid-sawn wood decking according to AWPAC31 with inorganic boron (SBX) and redry wood to 19 percent maximum moisture content.

2.3 PRESERVATIVE TREATMENT

- A. All lumber and timber shall be preservative treated as specified herein.
- B. Preservative Treatment: Comply with applicable requirements of AWPAC U1, Use Category 4B. Provide treatment after members are shaped with Alkaline Copper Quaternary (ACQ) or Copper Azole (CA) preservative by vacuum pressure full-cell process in accordance with AWPAC Standard Specification P5.
- C. Kiln dry members after treatment to 15% MC. Mark each treated item with the Quality Mark Requirements of an inspection agency approved by ALSC's Board of Review. Re-grade and re-stamp lumber after kiln drying in accordance with lumber producer's grading rules.
- D. Copper naphthenate solution (2% copper) for field treatment in accordance with AWPAC M4. The following products are approved:
 - 1. Behr #90 Dock and Post Preservative
 - 2. WM Barr Kleen Strip Coppo-W Exterior Wood Preservative
 - 3. Green's CopperGreen
 - 4. Jasco Termin-8
 - 5. Cuprinol Green #10

2.3 ACCESSORY MATERIALS

- A. Fasteners for Solid-Sawn Decking: Provide fastener size and type complying with decking standard for thickness of deck used.
- B. Nails: Common; complying with ASTM F 1667, Type I, Style 10.
- C. Spikes: Round; complying with ASTM F 1667, Type III, Style 3.
- D. Fastener Material: Stainless steel.
- E. Penetrating Sealer: Clear sanding sealer complying with Division 9 Section "Wood Stains and Transparent Finishes" and compatible with topcoats specified for use over it.

2.4 FABRICATION

- A. Shop Fabrication: Where preservative-treated decking is indicated, complete cutting, trimming, surfacing, and sanding before treating.
- B. Predrill decking for lateral spiking to adjacent units to comply with referenced decking standard.
- C. Seal Coat: After fabricating and surfacing decking, apply a saturation coat of penetrating sealer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Inspect and probe existing wood decking to determine the extent and limits of decay for replacement. Remove and salvage decking as required for structural repairs.
- B. Examine walls and support framing in areas to receive wood decking for compliance with installation tolerances and other conditions affecting performance of wood decking.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install solid-sawn wood decking to comply with referenced decking standard.
 - 1. Locate end joints for combination simple and two-span continuous lay-up.
- B. Where preservative-treated decking must be cut during erection, apply a field-treatment preservative to comply with AWPAC M4.

1. For solid-sawn decking, use inorganic boron (SBX).

3.3 ADJUSTING

- A. Repair damaged surfaces and finishes after completing erection. Replace damaged decking if repairs are not approved by Architect.

3.4 PROTECTION

- A. Provide temporary waterproof covering as the Work progresses to protect roof decking until roofing is applied.

END OF SECTION 06150

SECTION 07460 - SIDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:

Fiber-cement cladding.

1.3 SUBMITTALS

- A. Samples for Initial Selection: For siding and trim.
- B. Samples for Verification: For each type, color, texture, and pattern required.
 - 1. 12-inch- long-by-actual-width sample of each type of FRC product specified.
- C. Product Certificates: For each type of siding and trim, signed by product manufacturer.
- D. Research/Evaluation Reports: For each type of siding required.

1.4 QUALITY ASSURANCE

- A. Source Limitations for Siding and Trim: Obtain each type, color, texture, and pattern of siding and trim, including related accessories, through one source from a single manufacturer.
- B. Mockup: Build mockup to verify selections made under sample submittals and to demonstrate aesthetic effects.
 - 1. Build in-place mockup of section of both flat cladding at Ramp and curved cladding at Bird Blind, minimum 2 structural bays by full height of construction as shown on drawings.

2. If mockup is acceptable to Architect, it can remain in place as part of permanent construction.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials in a dry, well-ventilated, weathertight place.

1.6 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with siding installation only if substrate is completely dry and if existing and forecasted weather conditions permit siding to be installed according to manufacturer's written instructions.

1.7 SEQUENCING

- A. Coordinate installation with framing and other adjoining construction to ensure proper sequencing.

1.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace siding that does not comply with requirements or that fails within specified warranty period. Failures include, but are not limited to, cracking, deforming, or otherwise deteriorating beyond normal weathering.
 1. Fading is defined as loss of color, after cleaning with product recommended by manufacturer, of more than 5 Hunter color-difference units as measured according to ASTM D 2244.
 2. Warranty Period: 15 years from date of Substantial Completion.

1.9 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
- B. Furnish full lengths of siding and trim in a quantity equal to 2 percent of amount installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 - 1. Basis-of-Design Product: The design for each siding is based on the product named.

2.2 SIDING

- A. Fiber-Cement Siding: Siding made from fiber-cement board that does not contain asbestos fibers; complies with ASTM C 1186, Type A, Grade II; is classified as noncombustible when tested according to ASTM E 136; and has a flame-spread index of 25 or less when tested according to ASTM E 84.
 - 1. Hardie Trim HZ10 Series by James Hardie Inc. as shown on drawings. 4/4 boards smooth, 3/4" thick x width shown on drawings.
Texture: Smooth
Factory Priming: Manufacturer's standard acrylic primer.

2.3 ACCESSORIES

- A. Fasteners: Stainless-steel fasteners, countersunk, exposed heads. In sizes as required by manufacturer. Exposed heads shall be aligned and spaced consistently for a neat and trim appearance, and will be reviewed as part of the mock-up review process.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates for compliance with requirements for installation tolerances and other conditions affecting performance of siding. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrates of projections and substances detrimental to application.

3.3 INSTALLATION

- A. General: Comply with siding manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.
- B. Isolate dissimilar metals by separating with rubber gaskets or elastomeric sealant. Use rubber washers where fasteners made from dissimilar metal penetrate siding. Isolate dissimilar metals behind siding by covering with polyethylene film.

3.4 ADJUSTING AND CLEANING

- A. Remove damaged, improperly installed, or otherwise defective siding materials and replace with new materials complying with specified requirements.
- B. Clean finished surfaces according to siding manufacturer's written instructions and maintain in a clean condition during construction.

END OF SECTION 07460

SECTION 09910 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes surface preparation and the application of paint systems on the following exterior substrates:
 - 1. Wood
 - 2. Fiber Reinforced Cement Board

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Initial Selection: For each type of topcoat product indicated.
- C. Samples for Verification: For each type of paint system and in each color and gloss of topcoat indicated.
 - 1. Submit Samples on rigid backing, 8 inches square.
 - 2. Step coats on Samples to show each coat required for system.
 - 3. Label each coat of each Sample.
 - 4. Label each Sample for location and application area.
- D. Product List: For each product indicated, include the following:
 - 1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
 - 2. Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.

1.4 QUALITY ASSURANCE

- A. MPI Standards:
 - 1. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."

2. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.
- B. Mockups: Apply benchmark samples of each paint system indicated and each color and finish selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
 2. Final approval of color selections will be based on benchmark samples. If preliminary color selections are not approved, apply additional benchmark samples of additional colors selected by Architect at no added cost to Owner.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
 1. Maintain containers in clean condition, free of foreign materials and residue.
 2. Remove rags and waste from storage areas daily.

1.6 PROJECT CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

1.7 EXTRA MATERIALS

- A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.
 1. Quantity: Furnish an additional 5 percent, but not less than 1 gal. of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with the following:

1. The Sherwin-Williams Company as the Basis for Design, or equal product from another manufacturer as approved by Architect.

2.2 PAINT, GENERAL

A. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. Chemical Components of Field-Applied Paints and Coatings: Provide products that comply with the following limits for VOC content, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24) and the following chemical restrictions; these requirements do not apply to primers or finishes that are applied in a fabrication or finishing shop:

1. Flat Paints and Coatings: VOC content of not more than 50 g/L.
2. Nonflat Paints and Coatings: VOC content of not more than 150 g/L.
3. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
4. Restricted Components: Paints and coatings shall not contain any of the following:
 - a. Acrolein.
 - b. Acrylonitrile.
 - c. Antimony.
 - d. Benzene.
 - e. Butyl benzyl phthalate.
 - f. Cadmium.
 - g. Di (2-ethylhexyl) phthalate.
 - h. Di-n-butyl phthalate.
 - i. Di-n-octyl phthalate.
 - j. 1,2-dichlorobenzene.
 - k. Diethyl phthalate.
 - l. Dimethyl phthalate.
 - m. Ethylbenzene.
 - n. Formaldehyde.
 - o. Hexavalent chromium.
 - p. Isophorone.
 - q. Lead.
 - r. Mercury.
 - s. Methyl ethyl ketone.
 - t. Methyl isobutyl ketone.
 - u. Methylene chloride.
 - v. Naphthalene.
 - w. Toluene (methylbenzene).

- x. 1,1,1-trichloroethane.
- y. Vinyl chloride.

C. Colors: See drawings for specified colors and locations. Match Architect's color samples.

2.3 PAINTS AND SEALERS

A. Exterior Latex (Flat): MPI #10 (Gloss Level 1). Sherwin Williams A-100

- 1. VOC Content: <50 g/L

B. Exterior Waterborne Clear Sealer. Sherwin Williams SuperDeck

- 1. VOC Content: <50 g/L

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1. Wood: 15 percent.
 - 2. FRC Board: 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
 - 1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- B. Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
 2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- C. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.
1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.
- D. Wood Substrates:
1. Thoroughly clean wood surfaces of dirt, stains, mold and or/ mildew.
 2. Sand surfaces that are rough, ragged from sawcuts, splintered, etc.
- E. FRC Substrates: Prepare as per manufacturer's standard recommendations for painting.

3.3 APPLICATION

- A. Apply paints and sealers according to manufacturer's written instructions.
1. Use applicators and techniques suited for paint and substrate indicated.
 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 FIELD QUALITY CONTROL

- A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure at any time and as often as Owner deems necessary during the period when paints are being applied:
1. Owner will engage the services of a qualified testing agency to sample paint materials being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of Contractor.
 2. Testing agency will perform tests for compliance with product requirements.

3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying-paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

END OF SECTION 09912