

October 9, 2015

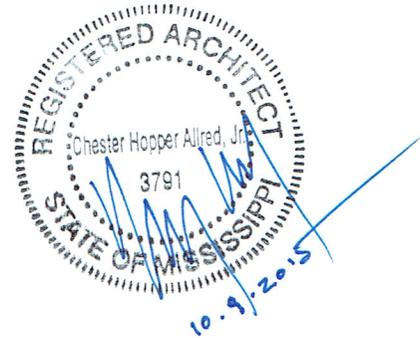
SPECIFICATIONS

# PASS CHRISTIAN SITE DEMOLITION AND SITE WORK

For  
Department of Marine Resources  
1141 Bayview Avenue  
Biloxi, Mississippi 39530

JOB NO. 2014-13

BID DATE: November 19, 2015  
2:00 p.m., local time



628 WASHINGTON AVENUE - SUITE C  
OCEAN SPRINGS, MISSISSIPPI 39564

SET NO. \_\_\_\_\_



I N D E X   T O   S P E C I F I C A T I O N S

ADVERTISEMENT FOR BIDS

DIVISION 0 BIDDING REQUIREMENTS

00100 Instructions to Bidders  
00300 Proposal Form  
00500 Standard Form of Agreement Between the Owner and the Contractor  
00600 Contract Bond  
00650 Certificate of Insurance  
00700 General Conditions  
00800 Supplementary Conditions  
00820 Labor Requirements  
00900 Addenda

DIVISION 1 GENERAL REQUIREMENTS

01010 Summary of Work  
01020 Allowances  
01025 Schedule of Values  
01027 Applications for Payment  
01028 Change Order Procedures  
01030 Alternates  
01041 Project Coordination  
01045 Cutting and Patching  
01200 Project Meetings  
01310 Progress Schedules  
01311 Network Analysis Schedule  
01340 Shop Drawings, Product Data and Samples  
01410 Testing Laboratory Services  
01500 Construction Facilities and Temporary Controls  
01630 Substitutions and Product Options  
01650 Starting of Systems  
01700 Contract Closeout  
01710 Cleaning  
01720 Project Record Documents  
01900 Supplement  
    Part 1 - Summary of Work Supplement  
    Part 2 - Allowance Supplement  
    Part 3 - Alternate Supplement  
    Part 4 - Project Sequence  
    Part 5 - Rain Days Allowance  
    Exhibit A  
    Exhibit B

DIVISION 2 SITE WORK

02.000	DEMOLITION	02000-1/3
02.200	EARTHWORK	02200-1/3
02.295	EROSION CONTROL	02295-1/3
02.410	SITE DEMOLITION AND REMOVAL	02410-1/3
02.610	GRANULAR BASE COURSE	02610-1/3
02.620	SIDEWALKS	02620-1/1
02.711	TEMPORARY CONSTRUCTION CHAIN LINK FENCES AND GATES	02711-1/5
02.920	LAWNS AND GRASSES	02920-1/7

DIVISION 3 CONCRETE

03.300	Cast-In-Place Concrete	03300-1/15
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DIVISION 15 MECHANICAL

15000	MECHANICAL GENERAL REQUIREMENTS	15000-1/6
15400	PLUMBING	15400-1/5

DIVISION 16 ELECTRICAL

16000 ELECTRICAL GENERAL REQUIREMENTS

16000-1/5

16025 ELECTRICAL DEMOLITION

16025-1/6

**ADVERTISEMENT FOR BIDS**  
**SECTION 00000**

Sealed bids will be received at the office of the  
The Department of Marine Resources, 1141 Bayview Avenue, Biloxi, Mississippi  
In the Conference Room, Bolton State Office Building, , until 2:00:00 p.m. on  
Thursday , November 19, 2015.  
(Day) (Date)

Pass Christian – Site Demolition and Site Work (Project Title)  
Department of Marine Resources (Using Agency)  
Pass Christian (Location)

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

Allred Architectural Group, PA  
628 Washington Avenue, Suite C  
Ocean Springs, MS 39564

Phone: (228) 762-1975

A deposit of \$ 50.00 is required. 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.**

Sonja Slater, Director of Procurement  
Mississippi Department of Marine Resources

Dates of Publication:  
October 14, 2015

October 21, 2015



DIVISION 0

BIDDING REQUIREMENTS AND MODIFICATIONS  
TO GENERAL CONDITIONS



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**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 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.

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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 is indicated in the Advertisement for Bids. Upon returning the documents to the Professional within ten (10) days of the bid date and in good condition, all document holders will be refunded one-half (1/2) of the deposit. Further, any general contractor submitting a bid and all mechanical and/or electrical Subcontractors will be refunded one hundred percent (100%) of the deposit on one (1) set and fifty percent (50%) for each additional set. No partial sets of documents will be issued. Selected plan rooms will be issued one (1) set of documents without charge.

**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.

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 and the date received in spaces provided.

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.msbc.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.msbc.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](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)

<p><i>(In upper left hand corner)</i></p> <p><b>Name of Firm</b> (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)</p> <p style="text-align: right;"><i>(Bid shall be addressed and delivered to)</i> Owner</p> <p><i>(In lower left hand corner)</i></p> <p>Bid for Project # _____</p> <p>Title _____</p> <p>Using Agency _____</p> <p>Certificate of Responsibility # _____(for over \$50,000.00) Under \$50,000.00 (add statement)</p>
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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

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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](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](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.

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**X 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 and the date received.

**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 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

Re: Project # \_\_\_\_\_  
Project Title PASS CHRISTIAN - SITE DEMOLITION AND SITE WORK DMR  
Location PASS CHRISTIAN, MS

I propose to complete all work in accordance with the Project Manual and Drawings within \_\_\_\_\_ consecutive calendar days for the sum of: (Professional must specify number of days)

**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:** (date below can be the date Addendum was issued OR the date Addendum was received by Bidder)

No. \_\_\_\_\_ Date \_\_\_\_\_ No. \_\_\_\_\_ Date \_\_\_\_\_

No. \_\_\_\_\_ Date \_\_\_\_\_ No. \_\_\_\_\_ Date \_\_\_\_\_

↑Complete all lines including #1↑

**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:  
Pass Christian  
Site Demolition and Site Work  
Department of Marine Resources

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:

**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 \_\_\_\_\_

**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 \_\_\_\_\_

- Sheets No. \_\_\_\_\_ through \_\_\_\_\_
- Sheets No. \_\_\_\_\_ through \_\_\_\_\_
- Sheets No. \_\_\_\_\_ through \_\_\_\_\_
- Sheets No. \_\_\_\_\_ through \_\_\_\_\_
- Sheets No. \_\_\_\_\_ through \_\_\_\_\_
- Sheets No. \_\_\_\_\_ through \_\_\_\_\_

- Sheets No. \_\_\_\_\_ through \_\_\_\_\_
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- Sheets No. \_\_\_\_\_ through \_\_\_\_\_
- Sheets No. \_\_\_\_\_ through \_\_\_\_\_
- Sheets No. \_\_\_\_\_ through \_\_\_\_\_

1.2.5.1 Other documents, dated

\_\_\_\_\_  
\_\_\_\_\_

**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		\$ _____
<b>Total Contract Sum</b>		\$ _____

**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 \_\_\_\_\_ Dollars

(\$ \_\_\_\_\_) 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 \_\_\_\_\_ 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 Allred Architectural Group, PA

Address 628 Washington Avenue – Suite C, Ocean Springs, MS 39564

Telephone (228) 762-1975 Fax Number (228) 769-9545 E-Mail Address hoppy@allredarchitecturalgroup.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 \_\_\_\_\_

By: \_\_\_\_\_  
(Signature)

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

\_\_\_\_\_  
(Surety Address)

\_\_\_\_\_  
(Surety City/State/Zip/Phone)

COUNTERSIGNED:

\_\_\_\_\_  
MISSISSIPPI LICENSED AGENT COMPANY NAME

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
Licensed Mississippi Agent  
(Typed Name) (Title)

\_\_\_\_\_  
(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](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.)

**SECTION 00650**

**STANDARD CONSTRUCTION CONTRACT  
CERTIFICATE OF INSURANCE**

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

<b>INSURED:</b> (Contractor's Name & Address)				COMPANIES PROVIDING COVERAGE w/ MID Lic or NAIC #		
				<b>A</b>		
				<b>B</b>		
				<b>C</b>		
				<b>D</b>		
				<b>E</b>		
				<b>F</b>		
<b>PROJECT:</b> (Number, Name & Location)				<b>G</b>		
				<b>H</b>		
<b>OWNER: Owner</b>				<b>I</b>		
				<b>J</b>		
Companies above must be approved by the MS Ins Dept at <a href="http://www.mid.ms.gov/licapp/search_main.aspx">http://www.mid.ms.gov/licapp/search_main.aspx</a> per Code & WComp at <a href="http://www.mwcc.ms.gov/">http://www.mwcc.ms.gov/</a>						
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)	\$ 500,000	
				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	
				<b>OR</b>	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)				<b>OR</b>	Builders' Risk	Must be equal to Value of Work
					Installation Floater	
<b>Other</b>						
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.						
<b>Producing Agent:</b> (Name, Address and Telephone)				(Signature)		
				(Date)		
				(Name and Title of Authorized Representative) (typed)		
				Agent must be approved by the MS Ins Dept <a href="http://www.mid.ms.gov/licapp/search_main.aspx">http://www.mid.ms.gov/licapp/search_main.aspx</a>		

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](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/ProofofCoverageInquiry/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 \*\*\*

**Division 0**

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June 2011

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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 \*\*\***



DIVISION 1  
GENERAL REQUIREMENTS



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**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*.

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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.

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**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.

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**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.

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**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.

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**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**.

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1.02      **REFERENCES**

- 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

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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
  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**

**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, 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

**Division One**

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Manufacturer named.

- C. For product specified by naming one (1) or more products, but indicating the option of selecting equivalent products by stating "or equal" after specified product, Contractor must submit request, as required for substitution, for any product not specifically named.
- D. For products specified by naming only one (1) product and Manufacturer, an equivalent product will always be accepted if it is equal in all respects. The Contractor must submit a request for substitution as set forth in this Section.
- 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. Professional will not consider requests for substitutions during bidding.
- B. 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. Complete data substantiating compliance of proposed substitutions with Contract Documents.
  - 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 products on which product was used and date of installation.
  - 3. For construction methods:
    - a. Detailed description of proposed method.
    - b. Drawings illustrating methods.
  - 4. Itemized comparison of proposed substitutions with product or method specified.
  - 5. Data relating to changes in construction schedule.
  - 6. Accurate cost data on proposed substitution in comparison with product or method specified.
- C. 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 guarantee will be provided for substitutions as 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.
  - 4. All claims for additional costs related to substitution which consequently become apparent will be waived.
  - 5. Cost data is complete and includes all related costs under the Contract.
- D. 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.
  - 3. In the Professional's judgment, the product, or material, is not equal.

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**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

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**Division One**

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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

- 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.

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**CLEANING  
SECTION 01710**

**1.01 DESCRIPTION**

- 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

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**Division One**

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- 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.
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)

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**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 \_\_\_\_\_, \_\_\_\_\_)

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**PART 3 - ALTERNATE SUPPLEMENT**

**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.

**PART 4 - PROJECT SEQUENCE**

**4.01 COORDINATION**

All work involving the interior of the first Floor, (i.e., coring of slab, plumbing runs, ceiling work, etc.) must be performed after standard working hours. Standard working hours are from 8 a.m. to 5 p.m., Monday thru Friday.

**4.02 SEQUENCE**

N/A

**PART 5- RAIN DAYS ALLOWANCE**

**5.01** As included in Article 8- Time of the General Conditions, weather delays will be allowed as follows:

**A. Rain Days**

1. The contractor shall figure the following number of rain days for each month listed below in his schedule. These are based on a seven year average from data obtained from NOAA.

January - 4 days	February- 3 days	March - 3 days	April - 2 days
May- 3 days	June- 3 days	July- 4 days	August - 2 days
September - 3 days	October - 2 days	November- 3 days	December - 2 days

2. Request for rain days shall not be made unless the number of days per month when the rain precipitation amounting to 1/10" or more exceeds the number of days on the above chart.
3. For an extension of time for rain days to be considered, the Contractor must document that the exterior work was delayed due to inclement weather conditions. In addition, the Contractor shall provide the Professional with independent verification of the quality of days when rainfall exceeded 1/10" during each billing period.

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.

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Page 2 of 3  
Owner  
Minority Participation Form

Name: \_\_\_\_\_

Division: \_\_\_\_\_

Amount \$ \_\_\_\_\_

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Page 3 of 3 (Submit if necessary)  
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**

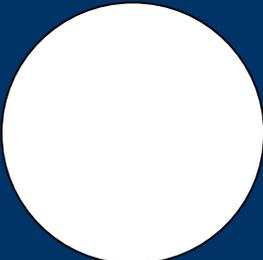
**ARCHITECT**

**ARCHITECT NAME**

**CONTRACTOR**

**CONTRACTOR NAME**

**MISSISSIPPI C.O.R. #11111**



**USING AGENCY NAME**  
**HEAD OF USING AGENCY NAME**



DIVISION 2  
SITE WORK



SECTION 02.000 DEMOLITION

PART 1 GENERAL

1.01 Section Includes:

- A. Demolition of designated building slabs, site structures, foundations, etc.
- B. Partial demolition as noted or indicated.
- C. Disconnecting, capping and removal of indicated utilities, underground piping, conduits, ductbanks, etc.
- D. Filling voids in subgrade created as a result of removals or demolition.
- E. Disposal of demolished materials.
- F. Breaking up concrete and asphalt as needed to keep debris size manageable.

1.02 EXISTING CONDITIONS AND SCOPE

- A. All contractors shall visit the site to determine the existing conditions and review the items of work required to be removed for the planned and specified new construction work. Field verify all measurements, surfaces, substrates and conditions as required.
- B. Structures indicated for demolition are discontinued in use and have been vacated.

1.03 NOTIFICATION

- A. The Contractor shall coordinate demolition work to insure total safety and to insure uninterrupted services to adjacent buildings.
- B. The Contractor shall notify the Mississippi Department of Environmental Quality and other appropriate State agencies of the buildings to be demolished, sufficiently in advance to not delay the project.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Not Applicable.

PART 3 EXECUTION

3.01 DEMOLITION

- A. Contractor shall be responsible for the removal of all materials required for the proper completion of the Work.

DEMOLITION

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- B. The Contractor shall be solely responsible for the safety of personnel and existing structure, and shall conform to all applicable Federal, State and local codes.
- C. Demolish buildings, structures, and pavements completely or as indicated.

3.02 FILLING VOIDS

- A. Completely fill below grade areas and voids existing or resulting from demolition or removal of structures (foundations, pits, wells, piles, paving, etc.) using approved select fill materials consisting of stone, gravel, and sand which is free from debris, trash, frozen materials, roots, and other organic matter.
- B. Remove standing water, frost, frozen, or unsuitable material, trash, and debris from areas to be filled before fill placement.
- C. Place fill materials in horizontal layers and compact each layer at optimum moisture content of fill material to proposed density as specified in the Earthwork Section.
- D. Grade surface to match adjacent grades and to provide flow of surface drainage after fill placement and compaction. Provide limestone base course cover.

3.03 PROTECTION OF MATERIALS AND EXISTING BUILDING

- A. Protect the work and all materials that is not to be demolished.
- B. Protect all existing work to remain, including any paving, sidewalks, piers, mechanical and electrical. Where existing work is damaged because of new work, the area so damaged shall be restored to its original condition at no additional expense to the Owner, using new materials of like nature.
- C. The Contractor shall provide protection for all work where necessary and he will be responsible for all damage done to any adjacent properties during the construction.
- D. Provide, erect, and maintain erosion control devices, dust control measures, etc. as needed. Sprinkle soil and demolition work area with water to minimize dust.

3.04 EXISTING UTILITIES

- A. Contractor shall disconnect utilities to buildings and site. Contractor shall remove utilities back to designated points and cap, terminate or end utilities as directed. Contractor shall coordinate all work with local governing authorities.

- 3.05 REMOVAL OF DEBRIS  
A. Contractor shall coordinate the removal of debris from the site before any significant accumulation appears. Debris shall be wetted, if necessary, to prevent raising dust.
- 3.06 ASBESTOS CONTAINING MATERIAL (ACM): (Not Applicable)
- 3.07 LEAD CONTAINING MATERIAL (Not Applicable)

END OF SECTION



SECTION 02.200 EARTHWORK

PART 1 GENERAL

1.01 GRADING AND FILL

A. The Contractor shall do all cutting, excavating, fill and grading within the areas indicated on the Drawings. Primarily the Contractor will be filling voids created by demolition of foundations, slabs and paving areas.

1.02 JOB CONDITIONS

A. Existing Utilities

1. Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of protection during construction.
2. Do not interrupt existing utilities serving facilities occupied by others.
3. Demolish and completely remove from site existing underground utilities serving buildings to be demolished.

B. Use of explosives: The use of explosives is not permitted.

C. Protection of Persons and Property

1. Install a 6' high construction fence as specified around all demolition areas prior to starting demolition work. Allow for controlled access points as required by the contractor.
2. Barricade open excavations occurring as part of this work and post with warning lights.
3. Operate warning lights as recommended by authorities having jurisdiction.
4. Protect structures, utilities, sidewalks, pavements, and other items to remain from damage caused by earthwork operations.

PART 2 PRODUCTS

2.01 MATERIALS

A. Fill materials to fill demolition voids, fill to underside of concrete slabs, adjust grade for adequate drainage, etc., shall be a non-plastic selected material free from large lumps, clods, rock, vegetation, or other objectionable matter. The liquid limit of the material passing No. 40 sieve shall be not more than 25, and the plasticity index not more than 8. All fill to be approved by the Architect.

EARTHWORK

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PART 3 EXECUTION

3.01 FILL AND BACKFILL

- A. Excavation and fill shall be done as concurrently as possible to avoid the possibility of rain filling excavated areas and creating muck.
- B. Corrective measures must be taken before placement of fill if wet spots, spongy conditions, or ground water seepage is found.
- C. The fill shall be compacted in uniform horizontal layers not more than 6" in thickness measured loose over entire area at optimum moisture to a minimum of 95% of the maximum density as determined by ASTM Specifications D698(11) - 5-1/2 pound rammer, 12" drop.
- D. Cover fill with one layer of Visqueen: (N/A)
- E. Backfill over piping shall be by hand, compacted to one foot above the pipe taking care not to disturb the pipe or injure any pipe coating. Laboratory control of these areas also required with proper density test. Underground electrical conduits shall be incased in red concrete.

3.03 TESTING

- A. Contractor is to acquire the services of a recognized testing laboratory to make necessary field and laboratory tests indicating whether the fill complies with specifications. Submit reports to the Architect in triplicate for approval. Test shall be paid by the Contractor.
- B. Density tests will be made as filling and compaction progresses on each 12" thickness. At least 6 tests will be made on each day's work. Areas that fail to meet density requirements shall be retested until compliance. Retesting shall be at the expense of the Contractor.

3.04 GRADING

- A. The site shall be graded to the elevations needed for proper drainage.
- B. Contractor shall verify grade elevations on the site and shall make necessary cuts, or fill, to bring grades up to required elevations. Dirt fill for this shall be approved sandy soil borrowed fill, free from foreign matter, well tamped and water soaked to prevent future settlement. Submit sample or borrowed fill for approval.
- C. Slopes shall be verified at the site by the Contractor. Finish grades shall be gently sloped

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contours at least 1/4" to one foot left with no pockets so as to produce a finished, well drained and uniform appearing site.

- D. Surplus Earth not used to develop new contours shall be disposed of by this Contractor. The Contractor shall remove from the site and dispose of all scrap, debris, etc., that are required to be removed because of this work.

3.05 FINE GRADING

- A. Contractor shall perform all fine grading required to bring ground to finished elevations within work area. Set grade stakes not over 25 feet on centers. Use blade grader on open areas and handwork around structures. Grades not otherwise indicated shall be of uniform slopes between points where elevations are given, or between such points and existing grades. The fine graded areas around building Contractor shall repair surfaces damaged by wash erosion prior to final inspection.
- B. Fill outside building shall be such as to produce required surfaces and shall be compacted to 90% maximum density.
- C. Hand rake all topsoil to grades indicated.

END OF SECTION



SECTION 02.295      EROSION CONTROL

PART 1      GENERAL

1.01      This work shall consist of designing, supplying, constructing and maintaining through construction erosion and dust control items as required by applicable regulations. The Contractor must obtain and sign a storm water control agreement with the City of Pass Christian. The Contractor is responsible for abiding by MDEQ Regulations throughout the construction of the project, and must understand that the City will issue a stop work order at any time these measures are not in compliance until the site is in compliance. The Contractor should obtain a copy of these prior to bid so that the requirements are known.

1.02      Specified Elsewhere:  
            Demolition  
            Earthwork

PART 2      PRODUCTS

2.01      Silt Fence materials shall be in accordance with Section 234.02, MDOT Standard Specifications for Road and Bridge Construction.

2.02      Erosion Checks (Hay Bales) shall be in accordance with Section 235.02, MDOT Standard Specifications for Road and Bridge Construction.

2.03      Seeding and Mulching shall be in accordance with these specifications.

PART 3      EXECUTION

3.01      After demolition and prior to placement of fill, the silt fences shall be constructed at locations as required.

A. All posts shall be installed so that no more than three (3) feet of the post shall protrude above the ground. Extra post for bracing shall be installed as directed by the Engineer. The woven wire shall be securely fastened to the wood posts with staples. When metal posts are used, the wire shall be fastened to the post with wire or other approved means. The fabric shall be attached to the wire fence by wire or other approved means. The bottom edge of the fabric shall be buried 6" below ground surface to prevent undermining. When splicing of the fabric is

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necessary, two posts shall be installed approximately 18" apart and each piece of fabric shall be fastened to both posts.

- B. The fabric will be rejected if it has defects, rips, holes, flaws, deterioration, or damage incurred during manufacture, transportation, storage or installation.
- C. Silt fence may be installed without woven wire provided that all of the conditions stated in paragraph 234.03.1, MDOT Specifications are met.

- 3.02 The Erosion Checks shall be constructed at the locations as required. Erosion checks required along the toe of fill slopes shall be constructed prior to grading operations at the site. Erosion checks shall be placed completely around storm drainage inlets to remain. For other locations, the erosion checks shall be constructed when directed by the Architect.

The soil shall be excavated at least three inches in depth to embed the baled material. After securing in place, a sufficient quantity of the excavated material shall be placed around the erosion check and compacted to prevent undermining.

- 3.03 Seeding shall be in accordance with these specifications.

- 3.04 The Contractor shall sprinkle the entire disturbed area until the surface is wet to control dust from the site. Sprinkling shall be repeated as necessary to control dust to an acceptable level.

3.05 MAINTENANCE AND REMOVAL

- A. The Contractor shall maintain all silt fences, erosion checks and silt basin throughout the project. When silt fences become ineffective or torn, they shall be replaced.
- B. When silt has accumulated against stormwater management devices, it shall be removed and disposed of such that the device does not lose its effectiveness.
- C. When stormwater management devices are no longer needed (grass or vegetation has been established), they shall be removed and shall become the property of the Contractor. The area shall be neatly restored and given a pleasing appearance. All bare areas shall be seeded or sodded as directed by the Engineer.

END OF SECTION

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SECTION 02.410 SITE DEMOLITION AND REMOVAL

PART 1 GENERAL

- 1.01 SECTION INCLUDES: This section includes all work up to and outside of existing structures that remain as indicated on the drawings.
- 1.02 GENERAL REQUIREMENTS: Remove rubbish and debris from the station daily; do not allow accumulations inside or outside the buildings. Store materials that cannot be removed daily in secured areas.
- 1.03 SUBMITTALS: Submit procedures for careful removal and disposition of materials specified to be salvaged, coordination with other work in progress, a disconnection schedule of utility services, and a detailed description of methods and equipment to be used for each operation and of the sequence of operations.
- 1.04 REGULATORY REQUIREMENTS: Comply with all federal, state, and local hauling and disposal regulations.
- 1.05 DUST CONTROL: Prevent the spread of dust to occupied portions of the building and avoid the creation of a nuisance in the surrounding area. Do not use water if it results in hazardous or objectionable conditions, such as, but not limited to, ice, flooding, or pollution.
- 1.06 PROTECTION
- A. Traffic Control Signs: Where pedestrian and driver safety is endangered in the area of removal work, use traffic barricades with flashing lights.
  - B. Existing Work: Protect existing work which is to remain in place. Repair items which are to remain or which are to be salvaged and which are damaged during performance of the work shall be repaired to their original condition or replace with new. Do not overload structural elements or pavements to remain. Provide new supports and reinforcement for existing construction weakened by demolition or removal work. Repairs, reinforcement, or structural replacement must have Architect's approval.

- C. Trees: Protect trees within the project site that might be damaged during demolition and that are indicated to be left in place, by a 6-foot-high fence. Erect fence a minimum of 5 feet from the trunks of individual trees or follow the outer perimeter of branches of clumps of trees. Restore trees scarred or damaged by Contractor equipment or operations to a satisfactory condition or replace as determined by the Architect. The Architect shall approve restoration prior to its initiation.
- D. Facilities: Protect electrical and mechanical services and utilities that are to remain. Where removal of existing utilities and pavement is specified or indicated, provide approved barricades, temporary covering of exposed areas, and temporary services or connections for electrical and mechanical utilities.

1.07 BURNING: Burning will not be permitted.

1.08 PRODUCTS (NOT APPLICABLE)

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 EXISTING FACILITIES TO BE REMOVED

- A. Structures: Remove indicated existing structures to 1 foot below existing adjacent or new finished grade, whichever is lower.
- B. Paving and Slabs: Remove sawcut concrete and asphaltic concrete paving and slabs including aggregate base as indicated to a depth of 12 inches below existing adjacent or new finished grade, whichever is lower. Provide neat sawcuts at limits of pavement removal as indicated.
- C. Drainage Structures and Pipe: Remove completely as indicated.

- 3.02 RESTORATION OF DISTURBED AREAS: Fill areas with select fill where structures, slabs or utilities have been removed to match existing adjacent elevations. Fine grade so that restored areas do not hold water. Filling and grading shall be done in accordance with Section 02.200 Earthwork.
- 3.03 DISPOSITION OF MATERIAL
- A. Title to Materials: Except where indicated otherwise as salvage or specifically specified otherwise in other sections, all materials and equipment removed, and not reused, shall become the property of the Contractor and shall be removed from the property. Title to all materials resulting from demolition, and all materials and equipment to be removed, is vested in the Contractor. The Owner will not be responsible for the condition or loss of, or damage to, such property after notice to proceed. Materials and equipment shall not be viewed by prospective purchasers or sold on the site.
- 3.04 CLEANUP
- A. Debris and Rubbish: Remove and transport debris and rubbish in a manner that will prevent spillage on streets or adjacent areas. Clean up spillage from streets and adjacent areas.
- B. Regulations: Comply with federal, state, and local hauling and disposal regulations.

END OF SECTION



SECTION 02.610 GRANULAR BASE COURSE

PART 1 GENERAL

1.01 DESCRIPTION

A. This work consists of furnishing granular materials and the construction of a base course over all excavated areas, in reasonably close conformity with existing grades and site drainage. Work primarily involves limestone cover at areas of demolished foundations or other earthwork.

PART 2 PRODUCTS

2.01 MATERIALS

A. Unless otherwise specified, materials used in this work shall conform to the requirements of ASTM 610 Crushed Limestone.

B. Thickness of crushed limestone base course shall be a minimum of 3".

2.02 EQUIPMENT

A. Equipment shall be of sufficient number, type, size, and weight to accomplish the required compaction.

PART 3 EXECUTION

3.01 PREPARATION OF GRADE

A. The foundation on which granular material is to be placed shall be prepared as set out in Section 321, Mississippi Standard Specifications for Road and Bridge Construction, 1990 edition.

3.02 PLACING OF MATERIALS

A. The Contractor shall be responsible for furnishing a material that meets the requirements of the contract and in such quantity to produce the specified compacted thickness. All material placed in excess of the tolerances allowed in Section 321 shall be removed and placed at other approved locations, or removed and hauled off the project without compensation. A course whose compacted thickness is designated to be more than eight inches shall be constructed in two or more layers of approximately equal thickness. The maximum compacted thickness of any one layer shall not exceed eight inches.

B. No granular materials shall be placed while frozen or placed on frozen materials.

C. When the Architect determines that in-place material, including the top portion of the design soil, is wet

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to the degree that there is a possibility of rutting, deforming, or displacing the underlying material, the hauling operation shall be suspended.

- D. The Contractor shall produce such material as is necessary to meet the specifications for gradation, liquid limit and plasticity index and shall make such corrections as are necessary or shall remove and replace, at no additional cost to the Owner, any deficient material placed in the work. In all cases of correcting deficiencies on the roadbed, the Contractor shall be fully responsible for any damage to the underlying course(s) and other work.

3.03 SHAPING, COMPACTING, AND FINISHING

- A. Each course OR layer of material shall be shaped to the required section, watered or aerated as necessary to provide the needed moisture content for compaction, and compacted. Throughout the compaction operation, the shape of the course or layer shall be maintained by blading and rolling so that the aggregates are uniformly distributed and firmly keyed.
- B. Shaping and compaction shall be carried out in a manner that will prevent lamination and shall continue until the entire depth and width of the course or layer has reached the required density. Surface compaction and finishing shall be performed so as to produce a smooth, closely knit surface that is free from lamination, cracks, ridges or loose material.
- C. The finished surface shall conform (within allowable tolerances) to the required section and established lines and grades. Allowable tolerances are set out in Section 321, of Mississippi Standard Specifications for Road and Bridge Construction, 1990 edition.
- D. Prior to subsequent construction or release of maintenance, all irregularities, depressions, soft spots, and other deficiencies found by the Architect shall be corrected to meet the requirements of these specifications without additional compensation.
- E. After compaction and finishing, if the mixture contains plus No. 4 aggregate and the course is to serve as a base for bituminous pavement, at least one complete coverage shall be made with a steel wheel roller. The resulting surface shall be sprinkled as necessary to maintain the required moisture content and shall be thoroughly compacted and sealed with a pneumatic roller.
- F. In addition to the requirements for density and correction of deficiencies, the Contractor shall be

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responsible for constructing and maintaining a course which will remain firm and stable under construction equipment and other traffic which the course will be subjected to prior to release of maintenance.

- G. Compaction by vibration shall not be performed on any course or layer placed over a previously chemically treated course(s).
- H. Density test will be performed in accordance with the methods as provided in 700.03 and 700.04, Mississippi Standard Specifications for Road and Bridge Construction, 1990 edition.
- I. The minimum density for subbases shall be 95%. The minimum density for granular base course shall be 98%, Standard Proctor Density, ASTM D-698.
- J. Subbases

Granular Material (Class)	Lot Average	Individual Test
10	94.0	90.0
7, 8, or 9	95.0	91.0
5 or 6	96.0	92.0
3 or 4	97.0	93.0
1 or 2	98.0	94.0

- K. A finished course shall be continually maintained until a subsequent course is placed thereon or the work is released from maintenance.

END OF SECTION

GRANULAR BASE COURSE

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SECTION 02.620      SIDEWALKS

PART 1      GENERAL

1.01      RELATED WORK SPECIFIED ELSEWHERE

A. Earthwork    02.200

1.02      EXTENT

A. Includes concrete walks and necessary related items as required to complete project.

PART 2      PRODUCTS

2.01      MATERIALS

A. Concrete for walks shall be 3000 psi. Walks shall have broom finish, as indicated. All walks and paving shall be pitched to drain freely, and no depressions shall remain.

B. Broom finish on sidewalks shall be uniformly applied to texture approved by the Architect. Brooming shall be applied perpendicular to the direction of travel, or in direction of drainage.

C. Joints for walks shall be as indicated on the Drawings.

PART 3      EXECUTION

3.01      CONCRETE

A. Walks shall be formed and constructed to shapes indicated on Drawings. Walks shall be 4" thick.

B. Finish shall be floated, worked and brushed until a dense and approved surface is produced. No depressions shall remain. All walks shall be pitched to drain freely. Divide surfaces into layout indicated on the Drawings with construction joints as specified. Surfaces shall be finished uniformly throughout.

C. Curing of all concrete shall conform to that required in 03.300.

D. Reinforcing for walks shall be 6 x 6 #10 welded wire mesh.

END OF SECTION

SIDEWALKS

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SECTION 02.711      TEMPORARY CONSTRUCTION CHAIN LINK  
FENCES AND GATES

PART 1      GENERAL

1.01      RELATED DOCUMENTS: Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work specified in this section.

1.02      DESCRIPTION OF WORK: Provide chain link (construction) fencing and gates around project site and as herein specified. Provide perimeter fencing as directed by Architect.

1.03      QUALITY ASSURANCE

A. Standards: Materials and methods of construction shall meet requirements and recommendations of applicable portions of the following industry standards:

1. ASTM A392 Zinc-Coated Steel Chain Link Fence Fabric.
2. ASTM F552 Standard Definitions of Terms Relating to Chain Link Fencing.
3. ASTM F567 Installation of Chain Link Fence.
4. ASTM F626 Fence Fittings.
5. ASTM F669 Strength Requirements of Metal Posts and Rails for Industrial Chain Link Fences.
6. ASTM F900 Industrial and Commercial Swing Gates.

B. Provide chain link fences and gates as complete units produced by a single manufacturer including necessary erection accessories, fittings and fastenings.

1.04      SUBMITTALS

A. Product Data: Submit manufacturer's technical data and installation instructions for metal fencing and gates.

B. Submit a site plan indicating proposed fencing layout. This must be approved by local governing authorities prior to installing.

PART 2      PRODUCTS

2.01      MATERIALS

A. General: Posts, gate frames, braces, post brackets, tension wire, stretcher bars, and truss rods shall be of steel. Gate hinges, stretcher bar bands, and other

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parts shall be of steel, malleable iron, ductile iron or equal except that ties and clips may be of aluminum.

- B. Posts: All posts shall be produced to conform with ASTM A-120, except the hydrostatic testing requirement is waived, standard weight (schedule 40) steel, hot dip galvanized.
  - 1. End and intermediate posts shall be 2.375 inch minimum outside diameter, weighing no less than 3.65 lbs. per foot.
  - 2. Gate posts shall be 4.00 inch minimum outside diameter, weighing no less than 9.10 lbs. per foot.
- C. Fabric: Hot dip galvanized steel chain link fence fabric, 2 inch mesh, 11 gage wire, 72 inches high. Conform to ASTM A392. Class 2 zinc coating.
- D. Gates: 2 Pairs of swing gates, complete with latches (to accept padlock), stops, keepers and hinges. Conform to ASTM F900.
  - 1. Gate frames shall be constructed of tubular members welded at all corners or assembled with fittings. Welds shall be painted with zinc based paint. Where corner fittings are used, gates shall have truss rods of 5/16 inch minimum nominal diameter to prevent sag or twist. (Gate leaves shall have vertical intermediate bracing as required, spaced so that no such members are more than 8 feet apart). Gate frames shall be constructed of 1.90 minimum outside diameter pipe, weighing no less than 2.72 lbs. per foot.
  - 2. Gate fabric shall be same as used in fence construction. Securely attach to gate frame at intervals not exceeding 15 inches.
  - 3. Gate hinges shall be of adequate strength for gate, and with large bearing surfaces for clamping in position. Hinges shall not twist or turn under the action of the gate. The gates shall be capable of being opened and closed easily by one person.
  - 4. Gate latches, stops and keepers shall be provided for all gates. Latches shall have a plunger-bar arranged to engage the center stop. Latches shall be arranged for locking. Center stops shall consist of a device arranged to be set in concrete and to engage a plunger bar of the latch. Keepers shall consist of a mechanical device for securing the free end of the gate when in the full open position.
- E. Fittings: Conform to ASTM F626.
- F. Tension bars shall be not less than 3/16 x 3/4 inch and not less than 2 inches shorter than the nominal

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height of the fabric with which they are to be used. One tension bar shall be provided for each end post.

- G. Ties or clips of adequate strength shall be provided in sufficient number for attaching the fabric to line post at intervals not exceeding 15 inches; and not exceeding 24 inches for attaching fabric to top and bottom rail.
- H. Bands or clips of adequate strength shall be provided in sufficient number for attaching the fabric and stretcher bars to all terminal posts at intervals not exceeding 15 inches. Tension bands shall be formed from flat or beveled steel and shall have a minimum thickness after galvanizing of 0.078 inch, and minimum width of 3/4 inch. Brace bands shall be formed from flat or beveled steel and shall have a minimum thickness of 0.108 after galvanizing, and minimum width of 3/4 inch. Bands shall be subject to standard mill tolerances. Attachment bolts shall be 5/16 x 1-1/4 inch galvanized carriage bolts with galvanized nuts.
- I. Tension Wire shall be Marcellled (spiraled or crimped) #7 gage (.177 inches) plus or minus 0.005 inches in diameter, conforming to ASTM A-824. Zinc coated tension wire shall be Class 2 (1.20 oz. of zinc per sq. ft. of uncoated wire surface). Aluminum coated tension wire shall have 0.40 oz. of aluminum per sq. ft. of uncoated wire surface. Use tension wire at top of fence without top rail.
- J. Finish: Unless otherwise specified, framework shall be galvanized steel, ASTM A120, with not less than 1.8 ounces of zinc per square foot; and hardware and accessories shall be galvanized, ASTM A152 with zinc weights as per Table I.

## PART 3 EXECUTION

### 3.01 INSTALLATION

- A. General: Unless otherwise indicated, install fence in accordance with ASTM F567. Layout complete fence line and mark post locations before construction begins.
- B. Post Anchorage: Provide galvanized pipe sleeves (8" long for line and intermediate posts; 16" long for gate posts), with inside diameter approximately 1 inch greater than post outside diameter, set in building concrete slab and grade beam. Sleeve bottoms shall be closed.
- C. In lieu of pipe sleeves posts may be set in core drilled holes of same depth.
- D. Setting Posts: Center and plumb posts in pipe sleeves or cored holes and fill around posts solidly with non-shrink, non-metallic grout recommended for

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exterior locations (Minwax Super Por-Rok, or equal), mixed and placed to comply with grout manufacturer's directions.

- E. Attach posts to masonry piers near top, with pipe brackets.
  - F. Pull fabric taut and tie to posts and tension wire. Install fabric on security side of fence, and anchor to framework so that fabric remains in tension after pulling force is released.
  - G. Stretcher Bars: Thread through or clamp to fabric 4 inches on center and secure to posts with metal bands spaced 15 inches on center.
  - H. Gates: Install gates plumb, level, and secure for full opening without interference. Install ground-set items in concrete for anchorage, as recommended by fence manufacturer. Adjust hardware for smooth operation and lubricate where necessary.
  - I. Tie Wires: Use U-shaped wire, conforming to diameter of pipe to which attached, clasping pipe and fabric firmly with ends twisted at least two full turns. Bend wire ends to minimize hazard to persons or clothing.
- 
- J. Fasteners: Install nuts for tension bands and hardware bolts on side of fence opposite fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

END OF SECTION

SECTION 02.920    LAWNS AND GRASSES

PART 1        GENERAL

1.01        RELATED DOCUMENTS

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

1.02        SUMMARY

A. This Section includes the following:

1. HydroSeeding. Provide over all the disturbed areas.
2. Provide Hydroseed as per the drawings on slopes as soon as they are graded.

1.03        DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Manufactured Soil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- C. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.
- D. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath planting soil.

1.04        SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
- C. Product Certificates: For fertilizers, signed by product manufacturer.

- D. Qualification Data: For landscape Installer.
- E. Material Test Reports: For existing surface soil and imported topsoil.
- F. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of lawns during a calendar year. Submit before expiration of required maintenance periods.
- G. Provide 1 year warranty (grass bond)

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape Business with 5 years experience whose work has resulted in successful lawn establishment on a minimum of 10 projects of comparable or larger size.
  - 1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when planting is in progress.
- B. Topsoil Analysis: Furnish soil analysis by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; sodium absorption ratio; deleterious material; pH; and mineral and plant-nutrient content of topsoil.
  - 1. Report suitability of topsoil for lawn growth. State recommended quantities of nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce a satisfactory topsoil.

1.06 SCHEDULING

- A. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

1.07 LAWN MAINTENANCE

- A. Begin maintenance immediately after each area is planted and continue until acceptable lawn is established, but for not less than the following periods:
  - 1. Seeded Lawns: 30 days after Substantial Completion.
- B. Maintain and establish lawn by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, and replant bare or eroded areas and mulch to produce a uniformly smooth lawn.

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1. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch. Anchor as required to prevent displacement.
- C. Watering: Provide and maintain temporary piping, hoses, and lawn-watering equipment to convey water from sources and to keep lawn uniformly moist to a depth of 4 inches (100 mm).
  1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
  2. Water lawn at a minimum rate of 1 inch (25 mm) per week.
- D. Mow lawn as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 40 percent of grass height. Remove no more than 40 percent of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:
- E. Lawn Post-fertilization: Apply fertilizer after initial mowing and when grass is dry.
  1. Use fertilizer that will provide actual nitrogen of at least 1/2 lb/1000 sq. ft. (0.45 kg/92.9 sq. m) to lawn area. Apply twice during project.

## PART 2 PRODUCTS

### 2.01 SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.
- B. Seed Species to be State-certified seed of grass species.
- C. Seed Species: Seed of grass species as follows, with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed:
  1. 60% Bermudagrass 40% ryegrass or recommended mixture for the time of year the planting is to be done that is approved by the Owner and Architect

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2.02 TOPSOIL

A. Topsoil: ASTM D 5268, pH range of 5.5 to 7, a minimum of 4 percent organic material content; free of stones 1 inch (25 mm) or larger in any dimension and other extraneous materials harmful to plant growth.

1. Topsoil Source: Reuse surface soil stockpiled on-site if suitability. Verify suitability of stockpiled surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth. Top soil not meeting lower PH limits to be amended with the addition of lime at rate recommended based on soils test.

a. Supplement with imported or manufactured topsoil from off-site sources when quantities are insufficient. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches (100 mm) deep; do not obtain from agricultural land, bogs or marshes.

2.03 INORGANIC SOIL AMENDMENTS

A. Lime: ASTM C 602, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent and as follows:

1. Class: Class O, with a minimum 95 percent passing through No. 8 (2.36-mm) sieve and a minimum 55 percent passing through No. 60 (0.25-mm) sieve.

2.04 PLANTING ACCESSORIES

A. Selective Herbicides: EPA registered and approved, of type recommended by manufacturer for application.

2.05 FERTILIZER

A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

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2.06 MULCHES

- A. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic; free of plant-growth or germination inhibitors; with maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.
- B. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.
- C. Asphalt Emulsion: ASTM D 977, Grade SS-1; nontoxic and free of plant-growth or germination inhibitors.

2.07 EROSION-CONTROL MATERIALS

- A. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches (150 mm) long.
- B. Erosion-Control Fiber Mesh: Biodegradable twisted jute or spun-coir mesh, a minimum of 0.92 lb/sq. yd. (0.5 kg/sq. m), with 50 to 65 percent open area. Include manufacturer's recommended steel wire staples, 6 inches (150 mm) long.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine areas to receive lawns and grass for compliance with requirements and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
  - 1. Protect adjacent and adjoining areas from hydroseeding overspray.
- B. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.03 LAWN PREPARATION

- A. Limit lawn subgrade preparation to areas to be planted.
- B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 4 inches (100 mm). Remove stones larger than 1-1/2 inches (38 mm) in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
  - 1. Reduce elevation of planting soil to allow for soil thickness of sod.
- C. Finish Grading: Provide a minimum 4 inches of topsoil. Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch (13 mm) of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to areas that can be planted in the immediate future.
- D. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- E. Restore areas if eroded or otherwise disturbed after finish grading and before planting.

3.04 SEEDING

- A. Sow seed at the rate of 3 to 4 lb/1000 sq. ft. (1.4 to 1.8 kg/92.9 sq. m).
- B. Rake seed lightly into top 1/8 inch (3 mm) of topsoil, roll lightly, and water with fine spray.
- C. Protect seeded areas with slopes exceeding 1:6 with erosion-control fiber mesh and 1:4 with erosion-control blankets installed and stapled according to manufacturer's written instructions.
- D. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre (42 kg/92.9 sq. m) to form a continuous blanket 1-1/2 inches (38 mm) in loose depth over seeded areas. Spread by hand, blower, or other suitable equipment.
  - 1. Bond straw mulch by spraying with asphalt emulsion at the rate of 10 to 13 gal./1000 sq.ft. (38 to 49 L/92.9 sq. m). Take precautions to prevent damage or staining of structures or other plantings adjacent to mulched areas. Immediately clean damaged or stained areas.

3.05 HYDROSEEDING

- A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
1. Mix slurry with nonasphaltic tackifier.
  2. Apply slurry uniformly to all areas to be seeded in a one-step process. Apply mulch at a minimum rate of 1500-lb/acre (15.3-kg/92.9 sq. m) dry weight but not less than the rate required to obtain specified seed-sowing rate.

3.06 SATISFACTORY LAWNS

- A. Satisfactory Seeded Lawn: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. (0.92 sq. m) and bare spots not exceeding 5 by 5 inches (125 by 125 mm).

3.07 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris created by lawn work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Erect barricades and warning signs as required to protect newly planted areas from traffic. Maintain barricades throughout maintenance period and remove after lawn is established.
- C. Remove erosion-control measures after grass establishment period.

END OF SECTION

LAWNS AND GRASSES

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DIVISION 3  
CONCRETE



PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. The work includes the provision of cast-in-place concrete. In the ACI publications referred to herein, the advisory provisions shall be considered to be mandatory, as though the word "shall" has been substituted for "should" wherever it appears; reference to the "Building Official," the "Structural Engineer," and the "Architect/Engineer" shall be interpreted to mean the Architect.

1.02 SUBMITTALS

A. Shop Drawings: Reproductions of contract drawings are unacceptable. Submit for approval one sepia and one blueline to the Architect prior to fabrication. The sepia will be marked and returned. Distribution copies shall be made from the sepia including one copy for the Architect.

1. Shop Drawings for Reinforcing Steel: ACI 315. Indicate bending diagrams, assembly diagrams, splicing and laps of bars, shapes, dimensions, and details of bar reinforcing, accessories, and concrete cover. Do not scale dimensions from structural drawings to determine lengths of reinforcing rods. Submit to the Architect for approval.

2. Shop Drawings for Reinforcing Steel Placement: The contract drawings shall not be used to prepare placement drawings. Prepare sections, details, elevations and other drawings for field personnel to properly place reinforcing. Indicate spacings, clearances, cover, bolsters and any other information for correct placing of the reinforcement. Submit for approval to the Architect with reinforcing steel shop drawings.

B. Contractor Mix Design: Thirty (30) days minimum prior to concrete placement, submit for Architect approval a mix design for each strength and type of concrete. Proportioning of mix and submittal of mix design shall conform to ACI 318-95 Section 5.3. Cylinder break data used shall be submitted with the

mix design submittal. Mix designs submitted without supporting cylinder break data will be rejected without review. If required cylinder break data is not available as required by ACI and the Standard Building Code, then increase design strength shown on the drawings by 1200 psi. Furnish complete list of materials including type, brand, source and amount of cement, fly ash, pozzolan, ground slag, and admixtures, and applicable reference specifications. Provide fly ash and pozzolan test results performed within 6 months of submittal date. Obtain approval before concrete placement. Submit additional data regarding concrete aggregates if the source of aggregate changes.

C. Certificates of Compliance:

1. Aggregates
2. Admixtures
3. Reinforcement
4. Cement
5. Fly ash
6. Pozzolan
7. Ground slag

D. Catalog Data:

1. Materials for curing concrete
2. Joint sealant
3. Joint filler
4. Vapor barrier
5. Reinforcing bolsters

1.03 DELIVERY

- A. Do not deliver concrete until vapor barrier, forms, reinforcement, embedded items, and chamfer strips are in place and ready for concrete placement.

1.04 STORAGE

- A. ACI 301 for job site storage of concrete aggregates. Store reinforcement of different sizes and shapes in separate piles or racks raised above the ground to avoid excessive rusting. Protect from contaminants such as grease, oil, and dirt. Provide for accurate identification after bundles are broken and tags removed.

PART 2 PRODUCTS

2.01 CONCRETE

A. Contractor-Furnished Mix Design: ACI 211.1 and ACI 301 and ACI 211.2. Concrete shall have a 28-day compressive strength of indicated or specified below.

<u>Location</u>	<u>Strength</u>	<u>Max W/C Ratio</u>	<u>Air Entr.</u>	<u>Slump*</u>
Found/slab	4000 psi	.45	4-6%	2-4"
Sidewalks	3000 psi	.50	4-6%	3-5"

\*Slump requirement is before the addition of superplasticizer. Maximum slump after addition of superplasticizer is 8-inches. Use of superplasticizer for slab on grade is required. Slump shall be checked before and after the addition of superplasticizer.

2.02 MATERIALS

A. Cement: ASTM C150, Type I or II or ASTM C595, Type IP blended cement, except as modified herein. The blended cement shall consist of a mixture of ASTM C 150 cement and one of the following materials: ASTM C 618 pozzolan or fly ash, or ASTM C 989 ground iron blast furnace slag. The pozzolan/fly ash content shall not exceed 25 percent by weight of the total cementitious material and the ground iron blast furnace slag shall not exceed 50 percent by weight of total cementitious material. For exposed concrete, use one manufacturer for each type of cement, ground slag, fly ash, and pozzolan.

1. Fly Ash and Pozzolan: ASTM C 618, Class F, except that the maximum allowable loss on ignition shall be 6 percent for Type F. Add with cement.
2. Ground Iron Blast-Furnace slag: ASTM C 989, Grade 120.

B. Water: Water shall be fresh, clean, and potable.

C. Aggregates: ASTM C 33, except as modified herein. Obtain aggregates for exposed concrete surfaces from one source. Aggregates shall not contain any substance which may be deleteriously reactive with the alkalies in the cement.

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- D. Nonshrink Grout: COE CRD-C-621.
- E. Admixtures
  - 1. Air-Entraining: ASTM C 260.
  - 2. Accelerating: ASTM C 494, Type C.
  - 3. Retarding: ASTM C 494, Type B, D, or G.
  - 4. Water Reducing: ASTM C 494, Type A, E, or F.
- F. Materials for Forms: Provide wood, plywood, or steel. Use plywood or steel forms where a smooth form finish is required. Lumber shall be square edged or tongue-and-groove boards, free of raised grain, knotholes, or other surface defects. Plywood: PS 1, B-B concrete form panels or better. Steel form surfaces shall not contain irregularities, dents, or sags.
- G. Reinforcement:
  - 1. Reinforcing Bars: ACI 301 unless otherwise specified.
  - 2. Welded Wire Fabric: ASTM A185 or ASTM A497. Provide flat sheets only of welded wire fabric for slabs.
  - 3. Wire: ASTM A82 or ASTM A496.
  - 4. Dowels: Plain steel; ASTM A 675, Grade 80 or ASTM A 499.
- H. Vapor Barrier: ASTM C 171 polyethylene sheeting, minimum 6mil thickness, unless indicated otherwise.
- I. Materials for Curing Concrete:
  - 1. Impervious Sheeting: ASTM C 171; waterproof paper, clear or white polyethylene sheeting, or polyethylene-coated burlap.
  - 2. Pervious Sheeting: AASHTO M 182.
  - 3. Liquid Membrane-Forming Compound: ASTM C 309, Type 2, Class B.
  - 4. Liquid Chemical Sealer-Hardener Compound: Shall be a magnesium fluosilicate compound which when mixed with water penetrates the concrete and seals and hardens the surface of the concrete. Do not use on exterior slabs exposed to freezing conditions. Compound shall not reduce the adhesion of resilient flooring, tile, paint, roofing, waterproofing, or other material applied to concrete.
- J. Expansion/Contraction Joint Filler: ASTM D 1751 or ASTM D 1752, 1/2-inch thick, unless otherwise indicated.

- K. Joint Sealants
  - 1. Horizontal Surfaces (3 percent slope, maximum):
    - a. Outside Buildings: ASTM D 1190.
    - b. Inside Buildings: ASTM D 1190 or ASTM D 1850.
  - 2. Vertical Surfaces (greater than 3 percent slope):  
ASTM C920, Type M, Grade NS, Class 25, Use T.
- L. Release Agent for Fiberglass Forms: Nox-Crete as manufactured by The Kinsman Corp., Omaha, Nebraska.

PART 3 EXECUTION

3.01 FORMS

- A. ACI 301. Provide forms, shoring, and scaffolding for concrete placement unless indicated or specified otherwise. Concrete for footings may be placed in excavations without forms upon inspection and approval by the Architect. Excavation width shall be a minimum of 4-inches greater than indicated. Set forms mortar-tight and true to line and grade. Chamfer above grade exposed joints, edges, and external corners of concrete 0.75 inch unless otherwise indicated. Provide formwork with clean-out openings to permit inspection and removal of debris. Forms submerged in water shall be watertight.
- B. Coating: Before concrete placement, coat the contact surfaces of forms with a nonstaining mineral oil, nonstaining form coating compound, or two coats of nitrocellulose lacquer. Do not use mineral oil on forms for surfaces to which adhesive, paint, or other finish material is to be applied.
- C. Removal of Forms: Prevent concrete damage during form removal. After placing concrete, forms shall remain in place for the following minimum time periods, not necessarily consecutive, where minimum temperatures specified in paragraph entitled "Curing Periods and Minimum Temperatures" are maintained adjacent to the concrete and formwork. The minimum time period for removal of forms shall govern where it exceeds the minimum specified curing period. Where the formwork for one element supports the formwork for another element, the greater time period shall apply to both elements.

Time Period

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Element

(Days Minimum)

Walls, column, pedestals, slabs,  
and beams

3

3.02 PLACING REINFORCEMENT & MISCELLANEOUS MATERIALS

- A. ACI 301. Provide bars, wire fabric, wire ties, supports, and other devices necessary to install and secure reinforcement. Reinforcement shall not contain rust, scale, oil, grease, clay, and foreign substances that would reduce the bond. Rusting of reinforcement is a basis of rejection if the effective cross sectional area or the nominal weight per foot of the reinforcement has been reduced to less than specified in paragraph entitled "Reinforcing Bars." Remove loose rust prior to placing steel. Tack welding is prohibited.
- B. Vapor Barrier: Provide beneath the on-grade concrete floor slab. Use the greatest widths and lengths practicable to eliminate joints wherever possible. Lap joints a minimum of 12-inches. Remove torn, punctured, or damaged vapor barrier material and provide with new vapor barrier prior to placing concrete. Concrete placement shall not damage vapor barrier material.
- C. Tolerances: Place reinforcement and secure with galvanized or noncorrodible chairs, spacers, or metal hangers. Use concrete or other noncorrodible material for supporting reinforcement on the ground.
- D. Splicing: AWS D1.4, except as otherwise indicated or specified. Splices shall be approved prior to use. Do not splice at points of maximum stress. Overlap welded wire fabric the spacing of the cross wires, plus 2- inches.
- E. Cover: ACI 301 for minimum coverage, unless otherwise indicated.
- F. Setting Miscellaneous Material: Place and secure anchors and bolts, pipe sleeves, conduits, and other such items in position before concrete placement. Plumb anchor bolts and check location and elevation. Temporarily fill voids in sleeves with readily removable material to prevent the entry of concrete.

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- G. Construction Joints: Locate joints to least impair strength. Continue reinforcement across joints unless otherwise indicated.
- H. Expansion Joints and Contraction Joints: For slabs on grade provide as indicated. Make expansion joints 0.5-inch wide except as indicated otherwise. Fill expansion joints not exposed to weather with preformed joint filler material. Completely fill joints exposed to weather with joint filler material and joint sealant. Do not extend reinforcement or other embedded metal items bonded to the concrete through any expansion joint unless an expansion sleeve is used. Provide contraction joints, either formed or cut with a jointing tool, to the indicated depth after the surface has been finished. Protect joints from intrusion of foreign matter.
- I. Form Ties and Accessories: The use of wire alone is prohibited. Form ties and accessories shall not reduce the effective cover of the reinforcement.
- J. Waterstop: Install in strict accordance with manufacturer's recommendations and as indicated.

3.03 MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE

- A. ASTM C94, ACI 301, ACI 302.1R, and ACI 304, except as modified herein. ASTM C94. Provide mandatory batch ticket information for each load of ready mix concrete.
- B. Measuring: Make moisture, weight, and air determinations at intervals as specified in paragraph entitled "Sampling and Testing." Allowable tolerances for measuring cement and water shall be 1 percent; for aggregates, 2 percent; and for admixtures, 3 percent.
- C. Mixing: ASTM C 94. Machine mix concrete. Begin mixing within 30 minutes after the cement has been added to the aggregates. Place concrete within 90 minutes of either addition of mixing water to cement and aggregates or addition of cement to aggregates if the air temperature is less than 85 degrees F. Reduce mixing time and place concrete within 60 minutes if the air temperature is greater than 85 degrees F. Additional water may be added, provided that both the specified maximum slump and water-cement ratio are not exceeded. Dissolve admixtures in the mixing water

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and mix in the drum to uniformly distribute the admixture throughout the batch.

- D. Transporting: Transport concrete from the mixer to the forms as rapidly as practicable. Prevent segregation or loss of ingredients. Clean transporting equipment thoroughly before each batch. Do not use aluminum pipe or chutes. Remove concrete which has segregated in transporting and dispose of as directed.
- E. Placing: Place concrete as soon as practicable after the forms and the reinforcement have been inspected and approved. Do not place concrete when weather conditions prevent proper placement and consolidation; in uncovered areas during periods of precipitation; or in standing water. Prior to placing concrete, remove dirt, construction debris, water, snow, and ice from within the forms. Deposit concrete as close as practicable to the final position in the forms. Do not exceed a free vertical drop of 3 feet from the point of discharge. Place concrete in one continuous operation from one end of the structure towards the other. Position grade stakes on 10-foot centers maximum in each direction when pouring interior slabs and on 20-foot centers maximum for exterior slabs.
  - 1. Vibration: ACI 301. Furnish a spare vibrator on the job site whenever concrete is placed. Consolidate concrete slabs greater than 4-inches in depth with high frequency, internal, mechanical vibrating equipment supplemented by hand spading and tamping. Consolidate concrete slabs 4-inches or less in depth by wood tampers, spading, and settling with a heavy leveling straight edge. Operate vibrators with vibratory element submerged in the concrete, with a minimum frequency of not less than 6000 impulses per minute when submerged. Do not use vibrators to transport the concrete in the forms. Insert and withdraw vibrators approximately 18- inches apart. Penetrate the previously placed lift with the vibrator when more than one lift is required. Place concrete in 18-inch maximum vertical lifts. External vibrators shall be used on the exterior surface of the forms when internal vibrators do

not provide adequate consolidation of the concrete.

- F. Cold Weather: ACI 306R. Provide 50 degrees F minimum concrete temperature. Obtain approval prior to placing concrete when the ambient temperature is below 40 degrees F or when concrete is likely to be subjected to freezing temperatures within 24 hours. Cover concrete and provide sufficient heat to maintain 50 degrees F minimum adjacent to both the formwork and the structure while curing. Limit the rate of cooling to 5 degrees F in any one hour and 50 degrees F per 24 hours after heat application.
- G. Hot Weather: ACI 305R. Provide and maintain required concrete temperature using Figure 2.1.5 in ACI 305R to prevent the evaporation rate from exceeding 0.2 pound of water per square foot of exposed concrete per hour. Cool ingredients before mixing or use other suitable means to control concrete temperature and prevent rapid drying of newly placed concrete. Shade the fresh concrete as soon as possible after placing. Start curing when the surface of the fresh concrete is sufficiently hard to permit curing without damage. Provide water hoses, pipes, spraying equipment, and water hauling equipment (where work site is remote to water source) to maintain a moist concrete surface throughout the curing period. Provide burlap cover or other suitable, permeable material with fog spray or continuous wetting of the concrete when weather conditions prevent the use of either liquid membrane curing compound or impervious sheets. For vertical surfaces, protect forms from direct sunlight and add water to top of structure once concrete is set.

3.04 SURFACE FINISHES (EXCEPT FLOOR & SLAB FINISHES)

- A. Defects: Repair formed surfaces by removing minor honeycombs, pits greater than one square inch surface area or 0.25-inch maximum depth, or otherwise defective areas. Provide edges perpendicular to the surface and patch with nonshrink grout. Patch tie holes and defects when the forms are removed. Concrete with extensive honeycomb (including exposed steel reinforcement, cold joints, entrapped debris, separated aggregate, or other defects) which affect the serviceability or structural strength will be rejected, unless correction of defects is approved.

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Obtain approval of corrective action prior to repair. The surface of the concrete shall not vary more than the allowable tolerances of ACI 347. Exposed surfaces shall be uniform in appearance and finished to a smooth form finish unless otherwise specified.

- B. Not Against Forms (Top of Walls): Surfaces not otherwise specified shall be finished with wood floats to even surfaces. Finish shall match adjacent finishes.
- C. Formed Surfaces
  - 1. As-Cast Rough Form (for Surfaces Not Exposed to Public View): Remove fins and other projections exceeding 0.25-inch in height; level abrupt irregularities.
  - 2. As-Cast Smooth Form (for Surfaces Exposed to Public View): Form facing material shall produce a smooth, hard, uniform texture on the concrete. Remove fins and other projections. Provide light sandblast where indicated on the drawings.
  - 3. Sandblast and provide light sandblast finish where indicated on the drawings.
- D. Rubbed Finish: Provide concrete with a smooth form finish. Finish as follows:
  - 1. Smooth Rubbed: Provide on newly hardened concrete within 24 hours following form removal. Wet surfaces and rub with an abrasive tool to produce uniform color and texture. Use only the cement paste drawn from the concrete rubbing process.

3.05 FLOOR, SLAB & MISCELLANEOUS CONSTRUCTION

- A. ACI 302.1R, unless otherwise specified. Slope floors uniformly to drains where drains are provided. Depress the concrete base slab where ceramic tile is indicated. Provide interior floor slabs with a steel troweled finish. After troweling is completed, apply a liquid chemical sealer-hardener compound on interior floor slabs that do not receive floor covering.
- B. Finish: Place, consolidate, and immediately strike off concrete to obtain proper contour, grade, and elevation before bleedwater appears. Permit concrete to attain a set sufficient for floating and supporting the weight of the finisher and equipment. If bleedwater is present prior to floating the surface, drag the excess water off or remove by

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absorption with porous materials. Do not use dry cement to absorb bleedwater.

1. Floated: Provide for machinery pads and other exterior slabs where not otherwise specified. Float the surface by hand with a wood or magnesium float, or use a power-driven float.
  2. Steel Troweled: First, provide a floated finish. When slab attains a proper set, trowel to a smooth, hard, dense finish. Finished surfaces shall be free of troweled marks, uniform in texture, and a true plane, level and flat within specified tolerance; hand-finish portions of the slab not accessible to power finishing equipment (e.g., edges, corners) to match the remainder of the slab. Power trowel once and finally hand trowel where a finished floor covering (e.g., tile, carpet) is specified. Power trowel twice and finally hand trowel for exposed concrete floors.
  3. Broomed: Provide for exterior walks, platforms, patios, and ramps, unless otherwise indicated. Provide a floated finish, then finish with a flexible bristle broom. Permit surface to harden sufficiently to retain the scoring or ridges. Broom transverse to traffic or at right angles to the slope of the slab.
- C. Concrete Walks: Provide 4-inches thick minimum. Provide contraction joints spaced every 5 linear feet unless otherwise indicated. Cut contraction joints 3/4-inch deep with a jointing tool after the surface has been finished. Provide 0.5-inch thick transverse expansion joints at changes in direction where sidewalk abuts curb, steps, rigid pavement, or other similar structures; space expansion joints every 20 feet maximum apart. Provide walks with a broomed finish. Provide a transverse slope of 1/4-inch per foot. Limit variation in cross section to 1/4-inch in 5 feet.
- D. Pits and Trenches: Place bottoms and walls monolithically or provide waterstops and keys.
- E. Curbs: Reinforce as indicated. Provide contraction joints spaced every 10 feet maximum unless otherwise indicated. Cut contraction joints 3/4-inch deep with a jointing tool after the surface has been finished. Provide expansion joints 1/2-inch thick and spaced as indicated. Provide a pavement finish.

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3.06

CURING AND PROTECTION

- A. ACI 301 unless otherwise specified. Begin curing immediately following form removal. Protect concrete from injurious action by sun, rain, flowing water, frost, mechanical injury, tire marks, and oil stains. Do not allow concrete to dry out from time of placement until the expiration of the specified curing period. Do not use membrane-forming compound on surfaces where appearance would be objectionable, on any surface to be painted, where coverings are to be bonded to the concrete, or on concrete to which other concrete is to be bonded. If forms are removed prior to the expiration of the curing period, provide another curing procedure specified herein for the remaining portion of the curing period.
- B. Moist Curing: Provide for the removal of water without erosion or damage to the structure.
1. Ponding or Immersion: Continually immerse the concrete throughout the curing period. Water shall not be more than 20 degrees F less than the temperature of the concrete. For temperatures between 40 and 50 degrees F, increase the curing period by 50 percent.
  2. Fog Spraying or Sprinkling: Provide uniform and continuous application of water throughout the curing period. For temperatures between 40 and 50 degrees F, increase the curing period by 50 percent.
  3. Pervious Sheeting: Completely cover surface and edges of the concrete with two thicknesses of wet sheeting. Overlap sheeting 6-inches over adjacent sheeting. Sheeting shall be at least as long as the width of the surface to be cured. During application, do not drag the sheeting over the finished concrete nor over sheeting already placed. Wet sheeting thoroughly and keep continuously wet throughout the curing period.
  4. Impervious Sheeting: Wet the entire exposed surface of the concrete thoroughly with a fine spray of water and cover with impervious sheeting throughout the curing period. Lay sheeting directly on the concrete surface and overlap edges 12-inches minimum. Provide sheeting not less than 18-inches wider than the concrete surface to be cured. Secure edges and transverse laps to form

closed joints. Repair torn or damaged sheeting or provide new sheeting. Cover or wrap columns, walls, and other vertical structural elements from the top down with impervious sheeting, overlap and continuously tape sheeting joints, and introduce sufficient water to soak the entire surface prior to completely enclosing.

- C. Liquid Membrane-Forming Compound Curing: Seal or cover joint openings prior to application of curing compound. Prevent curing compound from entering the joint. Provide and maintain compound on the concrete surface throughout the curing period. Do not use this method of curing where the use of Figure 2.1.5 in ACI 305R indicates that hot weather conditions will cause an evaporation rate exceeding 0.2 pound of water per square foot per hour.
1. Application: Unless the manufacturer recommends otherwise, apply compound immediately after the surface loses its water sheen and has a dull appearance, and before joints are sawed. Mechanically agitate curing compound thoroughly during use. Use approved power-spraying equipment to uniformly apply two coats of compound in a continuous operation. The total coverage for the two coats shall be 200 square feet maximum per gallon of undiluted compound unless otherwise recommended by the manufacturer's written instructions. The compound shall form a uniform, continuous, coherent film that will not check, crack, or peel. Immediately apply an additional coat of compound to areas where the film is defective. Respray concrete surfaces subjected to rainfall within 3 hours after the curing compound application.
  2. Protection of Treated Surfaces: Prohibit foot and vehicular traffic and other sources of abrasion for not less than 72 hours after compound application. Maintain continuity of the coating for the entire curing period and immediately repair any damage.
- D. Liquid Chemical Sealer-Hardener Curing: Apply to interior floors that do not receive a floor covering. Apply the sealer-hardener in accordance with manufacturer's recommendations. Seal or cover joints and openings in which joint sealant is to be applied

as required by the joint sealant manufacturer. The sealer-hardener shall not be applied until the concrete has cured for a minimum of 30 days. Apply a minimum of two coats of sealer-hardener.

- E. Curing Periods and Minimum Temperatures: After placing concrete, maintain air temperature adjacent to the concrete at 50 degrees F minimum for the specified time period, or 70 degrees F minimum for a period of 3 days after placing, and 40 degrees F minimum for the remainder of the specified time period.

<u>Time Period</u> (Days Minimum)	<u>Concrete Structure or Cement Type</u>
7	ASTM C 150, Type I or II, either with or without fly ash, pozzolan, or ground slag; and ASTM C 595 cement for concrete not specified otherwise.
10	Retaining walls that will be subjected to frost action or similar deteriorating conditions; pavement not under a roof.
1.	Additional Curing: Double the required curing period if either one or the average of both 7-day test cylinders indicate less than 75 percent of the strength specified (f'c).

### 3.07 SAMPLING AND TESTING

A. Sampling: ASTM C 172. Collect samples of fresh concrete to perform tests specified. ASTM C 31 for making test specimens.

B. Testing:

1. Slump Tests: ASTM C 143. Take concrete samples during concrete placement. The maximum slump may be increased as specified with the addition of an approved admixture provided that the water-cement ratio is not exceeded. Perform tests at commencement of concrete placement, when test cylinders are made, and for each batch (minimum) or every 10 cubic yards (maximum) of concrete. Perform slump test before and after addition of superplasticizer.

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2. Temperature Tests: Test the concrete delivered and the concrete in the forms. Perform tests in hot or cold weather conditions (below 50 degrees F and above 80 degrees F) for each batch (minimum) or every 10 cubic yards (maximum) of concrete, until the specified temperature is obtained, and whenever test cylinders and slump tests are made.
3. Compressive Strength Tests: ASTM C39. Make five test cylinders for each set of tests in accordance with ASTM C31. Test two cylinders at 7 days, two cylinders at 28 days, and hold one cylinder in reserve. Samples for strength tests of each mix design of concrete placed each day shall be taken not less than once a day, nor less than once for each 100 cubic yards of concrete, nor less than once for each 5000 square feet of surface area for slabs or walls. For the entire project, there shall be no less than five sets of samples taken and strength tests performed for each mix design of concrete placed. Each strength test result shall be the average of two cylinders from the same concrete sample tested at 28 days. If the average of any three consecutive strength test results is less than  $f'c$  or if any strength test result falls below  $f'c$  by more than 500 psi, take a minimum of three ASTM C 42 core samples from the in-place work represented by the low test cylinder results and test. Concrete represented by core tests shall be considered structurally adequate if the average of three cores is equal to at least 85 percent of  $f'c$  and if no single core is less than 75 percent of  $f'c$ . Locations represented by erratic core strengths shall be retested. Remove concrete not meeting strength criteria and provide new acceptable concrete. Repair core holes with nonshrink grout. Match color and finish of adjacent concrete.
4. Air Content: ASTM C 173 or ASTM C 231. Test air-entrained concrete for air content at the same frequency as specified for slump tests.

END OF SECTION

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DIVISION 15  
MECHANICAL



SECTION 15000

MECHANICAL GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. The general provisions of the Contract, including General and Supplementary Conditions, DIVISION 1 - GENERAL REQUIREMENTS, apply to the work specified in this Division, with additions and modifications specified herein.

1.02 APPLICATION:

- A. This section applies to all sections of Division 15 - Mechanical Work of these specifications, including modifications and additions specified in each individual section.

1.03 DESCRIPTIONS OF WORK:

- A. Scope: The work covered by this Division of these Specifications consist of furnishing all labor, equipment and materials, and in performing all operations in connection with the mechanical work, including all items of special equipment specified herein, complete in strict accordance with this Division of these Specifications and the applicable Drawings.
- B. Work Included: The work involves removal and capping and re-routing of existing utilities in conjunction with the demolition of these buildings.
- C. Related Work Specified Elsewhere: Generally the following work is specified under other Divisions of the project Specifications.

Changes to electrical power wiring and power disconnection of equipment.

General demolition work.

1.04 SITE CONDITIONS:

- A. Before submitting a proposal for the work contemplated in these Specifications and accompanying Drawings, each bidder shall examine the site and familiarize himself with all the existing conditions and limitations. No extras will be allowed because of the Contractor's misunderstandings as to the amount of work involved or his lack of knowledge of any condition in connection with the work.

1.05 FEES, PERMITS AND INSPECTIONS:

- A. This Contractor shall secure and pay all fees, permits and inspections required on work performed under this section of the contract Specifications. He shall assume full responsibility for all assessments and taxes necessary for completion and acceptance of this work.

1.06 APPLICABLE CODES AND STANDARDS:

- A. All materials, arrangements, and workmanship shall comply with all applicable codes, specifications, federal and state laws, local ordinances, industry standards and utility company regulations. In case of difference between building codes, Specifications, Federal and State laws, local ordinances, standards and utility company regulations and the Contract Documents, the most stringent requirement shall govern. The Contractor shall promptly notify the Architect in writing of such difference. Should the Contractor perform any work that does not comply with requirements of the applicable building codes, Federal and State laws, local ordinances, industry standards, and utility company regulations, he shall bear all costs arising in correcting the deficiencies. Applicable Codes and Standards shall include all state laws, State Board Health and State Rating Bureau, local ordinances, industry standards, and utility company regulations. Comply with applicable requirements of the following national accepted codes and standards as though they were copied herein fully:

ARI	Air Conditioning and Refrigeration Institute
ADC	Air Diffusion Council
AMCA	Air Moving & Control Association
AABC	American Air Balance Council
AGA	American Gas Association
ANSI	American National Standards Institute
ASHRAE	American Society of Heating, Refrigeration & Air Conditioning Engineers - Handbook
ASME	American Society of Mechanical Engineers
ASSE	American Society of Sanitary Engineers
ASTM	American Society of Testing Materials
AWS	American Welding Society
AWWA	American Water Works Association
CISPI	Cast-Iron Soil Pipe Institute
CTI	Cooling Tower Institute
FM	Factory Mutual System
HI	Hydronics Institute
IBC	International Building Code
IFC	International Fire Code
IPC	International Plumbing Code
IEEE	Institute of Electrical and Electronic Engineers
MSS	Manufacturer's Standardization Society

MPTA	Mechanical Power Transmission Association
NBS	National Bureau of Standards
NEMA	National Electrical Manufacturers Association
NEBB	National Environmental Balancing Bureau
NFPA	National Fire Protection Association - Fire Codes
NSF	National Sanitation Foundation
OSHA	Occupational Safety and Health Act Standards
PDI	Plumbing and Drainage Institute
SMACNA	Sheet Metal & Air Conditioning Contractors National Association
SAE	Society of Automotive Engineers
UL	Underwriters' Laboratories

1.07 APPROVAL OF MATERIALS AND EQUIPMENT:

- A. Quality Standards: Whenever a material, article or piece of equipment is identified on the Drawings or in the Specifications by reference to manufacturers' or vendors' names, trade names, catalog numbers, or the like, it is so identified for the purpose of establishing a standards of quality and shall not be construed as limiting competition. Any material, article or piece of equipment of other manufacturers or vendors which will perform adequately the duties impose by the design will be considered equally acceptable provided the material, article, or piece of equipment so proposed is, in the opinion of the Architect, of equal substance, appearance and function. It shall not be purchased or installed by the Contractor without the Architect's written approval. In order that all bidders, manufacturers, and vendors receive fair and equal consideration, the procedures described hereinafter shall be complied with.

1.08 COOPERATION:

- A. Cooperate and coordinate with other contractors on the site.

1.09 OPERATING AND MAINTENANCE INSTRUCTIONS:

- A. Not applicable.

1.10 RECORD DRAWINGS:

- A. Not applicable.

1.11 CONNECTION OF EQUIPMENT FIXTURES FURNISHED BY OTHERS:

- A. Not applicable.

1.12 ELECTRICAL:

- A. Refer to the Electrical Drawings and Division 16, ELECTRICAL WORK.

1.13 WORKMANSHIP:

- A. All work shall be executed in a neat and substantial manner by skilled workmen well qualified and regularly engaged in the type of work required. Substandard work shall be removed and replaced by the Contractor at no cost to the Owner.

1.14 CUTTING AND PATCHING:

- A. This Contractor shall provide all cutting, digging, etc., incident to his work and shall make all required repairs thereafter to the satisfaction of the Architect. Pavements, sidewalks, roads, curbs, walls, ceilings, floors and roofs shall be cut, patched, repaired and/or replaced as required. This work shall be the responsibility of and paid for by the Contractor.

1.15 CLEANING:

- A. The respective Contractors or Sub-contractors for the various phases of the work shall clear away all debris, surplus materials, etc., resulting from their work or operations, unless otherwise arranged with the General Contractor.

1.16 MECHANICAL DEMOLITION:

- A. Contractor shall visit the building to determine the existing conditions and review the items of work required to establish the planned and specified construction work. The Mechanical Contractor shall coordinate his demolition with the General Contractor, in establishing his schedule and shall consider the requirements that all activities of the existing building shall, during normal operating hours, with designated representatives of the Owner, and The Architect. All utility outages shall be approved through the Owner's Engineering Department. Contractor shall terminate and cap all active utility lines to the demolished areas, except that the Contractor shall maintain active lines that supply or drain the existing building to remain. Any damage during this contract, to existing utility lines serving existing buildings to remain, shall be properly repaired and reactivated at no expense to the Owner. Removal shall be done without undue noise, dust, and shall be accomplished without interfering with normal plant operations.

1.17 EQUIPMENT SAFETY:

- A. Provide positive means of locking out equipment so that it cannot be accidentally started during procedures. All required safety procedures and regulations shall be followed.

1.18 DELIVERY AND STORAGE:

- A. Equipment and materials shall be handled, stored, and protected to prevent damage before and during installation in accordance with the manufacturer's recommendations, and as approved by the Architect/Engineer. Damaged or defective items shall be replaced.

1.19 STANDARD PRODUCTS:

- A. Materials and Equipment: Materials and equipment shall be standard products of a manufacturer regularly engaged in the manufacture of such products, which are of a similar material, design and workmanship. The standard products shall have been in satisfactory commercial or industrial use for two years prior to bid opening. The two-year use shall include applications of equipment and materials under similar circumstances and of similar size.

1.20 EXISTING UTILITIES, STRUCTURES AND OTHER PROPERTY:

- A. Prior to any excavation, it shall be the responsibility of the Contractor to locate and avoid damage to any and all existing water, gas, sewer, electric, telephone and all other underground utilities or structures. The Contractor shall contact the various local utility departments or other responsible agencies and obtain location Drawings, or other assistance in the locations of existing underground work. The Contractor shall repair or pay for all damage caused by his operations to all existing property, public or private, whether it is below or above ground, and shall settle in total cost all damage suits which may arise as a result of his operations.

1.21 GUARANTEE:

- A. This Contractor shall guarantee to Owner, all work performed under this contract to be free from defects in workmanship and materials for a period of one year from date of final acceptance by Architect and Owner. Any defects arising during this period will be promptly remedied by the Contractor without cost to the Owner.

\\ PART 2 - NOT APPLICABLE

\\ PART 3 - NOT APPLICABLE

END OF SECTION



## SECTION 15100

### BASIC MATERIALS AND METHODS

#### PART 1 - GENERAL

##### 1.01 RELATED DOCUMENTS:

- A. Section 15000 - Mechanical General Requirements, with modifications and additions specified herein, apply to the work specified in this Section.

##### 1.02 SECTION INCLUDES:

- A. Basic Piping Materials and Installation Procedures For All Piping Systems.
- B. Identification, Labeling, and Marking.
- C. Testing.

##### 1.03 RELATED WORK SPECIFIED ELSEWHERE:

- A. Type of pipe and fittings are specified under each piping system.

##### 1.04 SUBMITTALS:

- A. Submit product data and shop drawings under provisions of Section 15000.
- B. Submit final test report.

#### PART 2 - PRODUCTS

##### 2.01 BASIC PIPING MATERIALS (as needed):

- A. Gate Valves: Valves shall have bronze body, bronze trim, inside screw, rising stem with handwheel, single wedge or disc, solder or threaded ends, Crane No. 1324, Nibco No. S-126 or equal.
- B. Globe Valves: Valves shall have bronze body, bronze trim, rising stem and handwheel, inside screw, renewable composition disc, solder or screw ends to match adjacent piping, with backseating capacity, and repackable under pressure.
- C. Ball Valves: Valves shall have bronze or stainless steel body, stainless steel ball, teflon seats and stuffing box ring, lever handle, solder or threaded ends.

- D. Plug Cocks: Plug cocks shall have bronze body, bronze tapered plug, non-lubricated, teflon packing, threaded ends, with wrench operator.
  - E. Swing Check Valves: Valves shall have bronze body, 45 degree swing disc, solder or screwed ends.
  - F. Spring Loaded Check Valves: Iron body, bronze trim spring loaded, renewable composition disc and seat, screwed, wafer, or flanged ends.
  - G. Strainers: Strainers shall screwed brass or iron body, Y-pattern with stainless steel screen.
  - H. Escutcheon Plates: One piece or split hinge type metal chromium-plated plates for piping passing through floors, walls, and ceilings in exposed spaces, and with set screws to anchor plates in place securely.
  - I. Unions: Use 150 psig malleable iron unions for threaded ferrous piping; bronze unions with solder joints for copper pipe.
  - J. Flanges: Forged steel slip-on flanges conforming to ANSI B16.1, Class 125, for use in ferrous piping; Bronze flanges conforming to ANSI B16.22 or B16.24 for use in copper tubing. Gaskets shall be full face flat type synthetic rubber, except use neoprene gaskets for gas service that conforms with ANSI B16.21.
  - K. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, except both ends threaded for gas service, water impervious isolation. Use unions as manufactured by EPCO.
  - L. Access Doors: Not applicable.
  - M. Pipe Sleeves: Not applicable.
  - N. Flashing: Not applicable.
  - O. Pipe Hangers and Supports: Not applicable.
- 2.02 IDENTIFICATION:
- A. Identify underground utilities per Chevron criteria.
- 2.03 TESTING, ADJUSTING, AND BALANCING:
- A. All equipment and apparatus necessary for testing, adjusting, and balancing shall be furnished by the contractor for this Division.

## PART 3 - EXECUTION

### 3.01 INSTALLATION OF PIPING:

#### A. Installation:

1. Provide non-conducting dielectric connections whenever jointing dissimilar metals. Locate in accessible locations.
2. Install piping to conserve building space and not interfere with use of space. Group piping whenever practical at common elevations. Route piping in an orderly manner, plumb, and parallel with the lines of the structure, and maintain gradient.
3. Provide clearance for installation of insulation and access to valves and fittings.
4. Install specialties and equipment in accordance with manufacturer's instructions.
5. Install brass male adapters each side of valves in copper piped systems. Sweat solder adapters to pipe.
6. Threaded Connections: Jointing compound for pipe threads shall be polytetrafluoroethylene (PTFE) pipe thread tape, pipe cement and oil, or PTFE powder and oil; apply only on male threads. Provide exposed ferrous pipe threads with one coat of primer applied to a minimum dry film thickness of 1.0 mil.
7. Solder End Valves: Remove stems and washers and other items subject to damage by heat during installation. Reassemble valve after soldering is completed. Valves without heat sensitive parts do not require disassembly but shall be opened at least two turns during soldering.
8. Pipe Hangers and Supports: Not applicable.
9. Pipe Sleeves: Not applicable.
10. Flashing: Not applicable.
11. Flanges and Unions: Except where copper tubing is used, union or flange joints shall be provided in each line preceding the connection to each piece of equipment or material requiring maintenance such as coils, pumps, control valves, and other similar items. A union or flange shall be installed on the down stream of each valve.
12. Service Valves: Not applicable.

13. Welding to Structure: Not applicable.
14. Excavation and Trenching: Trenches for all underground pipe lines shall be excavated to the required depths. The bottom of trenches shall be tamped hard and graded to secure the required fall. Bell holes shall be excavated so that pipe will set on solid ground for its entire length. Sewer, water, and gas pipes shall be laid in separate trenches.
15. Backfilling: After pipe lines have been tested, inspected, and approved by the Engineer and prior to backfilling, all forms shall be removed and the excavation shall be cleaned of all trash and debris. Material for backfilling shall consist of the excavation, or borrow of sand, gravel, or other materials approved by the Engineer and shall be free trash, lumber, roots, or other debris, except that material for backfilling for pipe lines under the building shall be clay gravel. Backfill shall be placed in horizontal layers, not exceeding 9" in thickness and properly moistened to approximate optimum requirements. Each layer shall be compacted by hand or machine tampers. Backfill for outside pipe lines shall be brought up to a suitable elevation above grade to provide for anticipated settlement and shrinkages thereof.

3.02 IDENTIFICATION, LABELING AND MARKING:

- A. General: Piping, valves, controls, and equipment shall be labeled or marked per Chevron criteria.

3.03 TESTING, ADJUSTING, AND BALANCING:

- A. General: The Mechanical Contractor shall test all utilities work to assure that there are no leak conditions. See other sections of these specifications for testing procedures.

END OF SECTION

SECTION 15400

PLUMBING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Section 15000 - Mechanical General Requirements and Section 15100 - Basic Materials and Methods, with modifications and additions specified herein, apply to the work specified in this Section.

1.02 SECTION INCLUDES: The intent is that removed or relocated plumbing systems be handled with materials to match existing or as herein specified.

- A. Sanitary Sewer and Storm Drain System.
- B. Water Mains.
- C. Water Service.
- D. Domestic Water Piping System.
- E. Compressed Air System.

1.03 SUBMITTALS:

- A. Submit product data and shop drawings under provisions of Section 15000.
- B. Include component sizes, rough-in requirements, service sizes, trim, and finishes.
- C. Include certificate of compliance of pipe, fittings, and valves.

1.04 QUALITY ASSURANCE:

- A. Welders Certification: In conformance with AWS D1.1.
- B. For each product, provide components by same manufacturer throughout.

PART 2 - PRODUCTS

2.01 SANITARY SEWER AND STORM DRAIN SYSTEM

- A. Piping Materials: Polyvinyl chloride (PVC) system conforming to ASTM D 2665 with cement joints.
- B. Exterior Cleanouts: Josam Series 56040, Zurn Z1420-27, Smith 4240-CI or approved equal. Set in 15" x 15" x 6" concrete pad.
- C. Manholes: Not applicable.
- D. Headwall and Catch Basin: Not applicable.

2.02 FIRE MAIN (if needed):

- A. Piping Materials: Ductile-iron, Class 150, conforming to AWWA C 151, with fittings conforming to AWWA C110, pipe and fittings shall have cement-mortar lining conforming to AWA C104/A21.4; joints shall be mechanical or flanged.
- B. Gate Valves: Gate valves shall conform to the requirements of UL 262, shall be inside-screw type with operating nut, shall have split wedge or double disc type gate and shall be designed for a hydraulic working pressure of 175 psi. Stuffing boxes shall have O-ring seals and shall be bolted and constructed so as to permit easy removal of parts for repair. Valve ends shall match the piping in which they are to be installed. The valves shall have an indicator post flange where a post indicator as required.
- C. Post Indicator: Not applicable.
- D. Valve Boxes: Each gate valve shall be provided with an adjustable, two-piece, cast-iron valve box of a size suitable for the valve. The head shall be round and the lid shall have the word "WATER" cast on it. The least diameter of the shaft of the box shall be 5-inches. Each box shall be given a heavy coat of bituminous paint and set in an 18"x 18" x 6" concrete pad.
- E. Fire Hydrants: Not applicable.
- F. Pipe Anchorage: Not applicable.

## 2.03 WATER SERVICE (if needed):

- A. Piping Materials: Copper tubing, soft-drawn, Type "K", Conforming to ASTM B 88 with cast-brass or wrought-copper solder joint fittings using ASTM B 32 tin-antimony or Grade Sn96 tin-silver solder, and flux containing not more than 0.2 percent lead; or with ANSI B16.26 flare joint fittings.
- B. Gate Valves: See Section 15100 Basic Materials and Methods of these Specifications. Valve ends shall match the piping in which they are to be installed.
- C. Valve Boxes: Each gate valve shall be provided with an adjustable, two-piece, cast-iron valve box of a size suitable for the valve. The head shall be round and the lid shall have the word "WATER" cast on it. The least diameter of the shaft of the box shall be 5-inches. Each box shall be given a heavy coat of bituminous paint and set in an 18"x 18" x 6" concrete pad.

## 2.04 COMPRESSED AIR PIPING SYSTEM (if needed):

- A. Compressed Air Piping: Schedule 40 black steel pipe conforming to ASTM A 53 or with malleable iron fittings conforming to ANSI B16.3 or forged steel welded type fittings conforming to ASTM A 234. Pipe 2-inch and under shall screw type joints. Pipe 2-inches and larger shall have welded joints conforming to ANSI/AWS D1.1.

## PART 3 - EXECUTION

### 3.01 INSTALLATION:

- A. General: Installation of plumbing systems including fixtures, equipment, materials, and workmanship shall be in accordance with the (IPC) International Plumbing Code. When fixtures require both hot water and cold water supplies, provide the hot water supply to the left of the cold water supply. Plastic piping shall not penetrate fire walls or fire floors and shall be used on one side of fire walls and fire floors not closer than 6 inches to the penetration.

### 3.02 PREPARATION:

- A. Prepare site to perform work.

### 3.03 INSTALLATION:

- A. Install bell and spigot pipe with bell end upstream. Slope pipe in accordance with the requirements of IPC International Plumbing Code.
- B. Install specialties in accordance with manufacturer's instructions.
- C. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Ensure clearance at cleanout for rodding of drainage system.
- D. There should be a minimum of 30 inches of cover for water mains.
- E. While under construction, unattended exposed pipelines must have the ends capped. All materials to be used in construction shall be stored above the ground in a manner that will minimize the possibility of contamination.
- F. Water mains shall be laid at least 10 feet horizontally from any sanitary sewer or manhole.
- G. Water mains shall be located on opposite sides of the street from sewer where possible.
- H. Where local conditions prevent 10 foot horizontal separation, the water main may be laid closer to the sewer line provided they are in separate trenches with adequate space for maintenance and the bottom of the water line is 18 inches above the top of the sewer line. Where this 10 foot horizontal separation cannot be maintained, the water line should be ductile iron with water line joints located at the maximum distance possible from the sewer line joints.
- I. Where water lines cross over sewer lines, the pipe segments should be centered to provide maximum spacing of joints. A vertical separation of at least 18 inches should be maintained (water over sewer).

### 3.04 FIELD TESTS:

- A. Waste and Drainage Piping: The entire drainage and venting system shall have all necessary openings plugged to permit the entire system to be filled with water to the level of the highest vent stack above the roof. The system shall hold this water for 30 minutes without showing a

drop greater than 4". Where a portion of the system is to be tested, the test shall be conducted in the same manner as described for the entire system, except that a vertical stack 10 feet above the highest horizontal line to be tested may be installed and filled with water to maintain sufficient pressure or a pump may be used to supply the required pressure. The pressure shall be maintained for thirty minutes. Contact the A/E representative for test verification.

- B. Compressed Air Piping: Pneumatically test air piping at 150 psi. Piping will be acceptable if pressure drop is less than 10 psi after 8 hours holding period.

### 3.05 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM:

- A. After completion of the construction and pressure testing of water distribution lines, they shall be flushed and disinfected using at least a 50 mg/l free chlorine solution for 24 hours or as described in the latest revision of AWWA C651. Large volume disposal of this water may require a permit from the Department of Environmental Quality/Office of Pollution Control.
- B. After completion of the construction and disinfection of water distribution lines, the contractor shall arrange for at least one microbiological water sample to be collected by a representative of the Mississippi State Department of Health or the Registered Professional Engineer in charge of the project, or the Certified Operator for the system from every dead-end line and every major looped line. Water being collected for testing shall not have chlorine residual higher than that is normally maintained in other parts of the distribution system. No chlorine shall be present which is a result of line disinfection. No coliform bacteria and no confluent growth indication shall constitute a satisfactory sample when analyzed by the Mississippi State Department of Health or a laboratory certified by the State.

END OF SECTION



DIVISION 16  
ELECTRICAL



SECTION 16000 ELECTRICAL GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

The Electrical General Requirements are supplementing and applicable to Division 16 Sections and shall apply to all phases of work specified herein, or required to provide a complete installation of electrical systems. Section 16 is sub-divided for convenience only.

A. This Section includes the following:

1. Job Conditions
2. Regulatory Requirements
3. Submittals.
4. Common electrical installation requirements.
5. Warranty of work.

1.2 JOB CONDITIONS:

A. SITE INSPECTIONS: Before submitting proposals, each bidder should visit the site and fully familiarize himself with all job conditions and shall be fully informed as to the extent of his work. No consideration will be given after bid opening date for alleged misunderstanding as to the requirements of work involved in connecting to the utilities or as to requirements of materials to be furnished.

B. SCHEDULED INTERRUPTIONS: Planned interruptions of utilities service, to any facility affected by this contract, shall be carefully planned and approved by Architect at least ten (10) days in advance of the requested interruption. The Contractor shall not interrupt services until the Architect has granted specific approval. The request shall indicate services to be affected, date and time of interruption and duration of outage. Request for interruption of service will not be approved until all equipment and materials required for the completion of that particular phase of work are on the job site. The work may have to be scheduled after normal working hours.

C. ACCIDENTAL INTERRUPTIONS: All excavation and/or remodeling work required shall be performed with care so

as not to interrupt other existing services (water, gas, electrical, sewer, sprinklers, etc.). If accidental utility interruption resulting from work performed by the Contractor occurs, service shall be immediately restored to its original condition without delay, by and at the expense of the Contractor, using skilled workmen of the trade required.

D. MAINTAINING SERVICE:

1. Any existing service (or operating system) which must be interrupted for any length of time shall be supplied with a temporary service if necessary for continuation of the normal operation of this facility.
2. Any existing system or part of an existing system currently in operation shall remain so after all additions or renovations are made and all work is completed.

1.3 REGULATORY REQUIREMENTS:

A. PERMITS, FEES, AND INSPECTIONS: This Contractor shall secure and pay for all permits, and inspections required on work performed under this section of the Specifications. He shall assume full responsibility for all assessments and taxes necessary for the completion and acceptance of the work.

B. APPLICABLE STANDARDS AND CODES: The electrical installation shall comply with all applicable building codes; local, state, and federal ordinances; and the 2005 edition of the National Electrical Code. In case of a discrepancy among these applicable regulatory codes and ordinances, the most stringent requirement shall govern. The Contractor shall notify the Architect in writing of any such discrepancy. Should the Contractor perform any work that does not comply with the applicable regulatory codes and ordinances he shall bear all cost arising in correcting the deficiencies. Application standards and codes shall include all local ordinances, all state laws, and the applicable requirements of the following:

- (1) American National Standards Institute - ANSI
- (2) National Electrical Manufacturer's Association - NEMA
- (3) National Fire Protection Association - NFPA (latest editions)

- (4) The Life Safety Code - NFPA 101, 2003 Edition
- (5) The National Fire Alarm Code - NFPA 72, 2005 Edition
- (6) International Building Code, 2003 Edition
- (7) Underwriters' Laboratories, Inc. - UL

C. LETTERS CERTIFYING COMPLIANCE AND REVIEW: The Contractor shall ensure that all work shall be as required by any legal authority having jurisdiction and by any serving utility, with no additional cost to the Owner. As soon as practical after bidding, and before any work is commenced, the Contractor shall meet with all legal authorities having jurisdiction, review all materials and details of this project and agree on any required revisions. The Contractor shall also meet with each serving utility and repeat the above procedure.

The Contractor shall after completion of the work, furnish the Architect a certificate of final inspection and approval from the applicable local inspection department.

#### 1.4 COOPERATION:

A. INTERFACING WITH OTHER CRAFTS: It shall be the responsibility of the Contractor to cooperate and coordinate with all other crafts working on this project. This Contractor shall do all cutting, trenching, backfill and structural removals to permit removal or re-routing of the electrical system and components. No claims for "extras" due to such decisions shall be allowed. When the Contractor submits for approval any item or equipment, he shall determine for himself whether or not it will fit the space provided.

B. EQUIPMENT FURNISHED UNDER OTHER SECTIONS: Not Applicable.

C. HEATING AND AIR CONDITIONING: Not Applicable.

1.5 WORKMANSHIP: All work shall be executed in a neat and substantial manner by skilled workman, well qualified, and regularly engaged in the type of work required. Substandard work shall be removed and replaced by the Contractor at no cost to the Owner.

1.6 APPROVAL OF MATERIALS AND EQUIPMENT:

A. PRIOR-SUBMITTALS: Not Applicable.

B. SUBMITTALS:

(1) Submittals: The Contractor shall submit documentation on materials to be used on the project. Provide four (4) copies of submittals and shop drawings as a minimum unless the General Conditions requires a greater number of copies.

a. Submittals Schedule: Submittals shall be submitted as soon as possible after the contract is awarded. It is not the responsibility of the Engineer to expedite the review of submittals if the contractor has not adequately prepared the submittals in a time efficient manner. The contractor bears all the responsibility for the added time requirements of resubmittals.

b. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1) Initial Review: Allow 7 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.

2) Resubmittal Review: Allow 7 days for review of each resubmittal.

c. Identification: Not Applicable.

- d. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
- 1) Include previous submittal review comments.
  - 2) For each item being resubmitted, include previous review comment and explain how resubmitted item meets the criteria of the previous review comment.
  - 3) Only one (1) resubmittal will be accepted. If the resubmittal does not meet the review comments on the initial submittal or the intent of the contract documents the contractor shall provide the original specified equipment or pay the Engineer Three Hundred Dollars (\$300.00) BEFORE another resubmittal review will be performed.

(2) Electrical and Mechanical/Plumbing/Fire Protection Equipment Coordinations: Not Applicable.

1.7 PRODUCT DELIVERY, STORAGE AND HANDLING: Not Applicable.

1.8 TESTING AND BALANCING: Not Applicable.

1.9 OPERATING AND MAINTENANCE INSTRUCTIONS/AS BUILT DRAWINGS:

- A. This Contractor shall provide as-built Drawings at the completion of the job. Drawings shall show all significant changes in equipment, wiring, routing, location, etc. All underground conduit routing shall be accurately indicated with locations dimensioned.

1.10 GUARANTEE AND SERVICE: Not Applicable.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

- A. Comply with NECA 1.

END OF SECTION



SECTION 16025 - ELECTRICAL DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

- A. This section includes the following:
1. Removal of existing electrical equipment, wiring, and conduit in site preparation area.
  2. Disposal of materials.
  3. Storage of removed materials.
  4. Identification of utilities.
  5. Protection of items to remain.
  6. Relocate existing equipment to accommodate construction.

1.2 PERFORMED WORK (Not Used)

1.3 SUBMITTALS

- A. Submit the following in accordance with Section 16 "Electrical General Requirements":
1. Project Record Documents: Record actual locations of capped conduits and equipment abandoned in place.

1.4 REGULATORY REQUIREMENTS

- A. Conform to requirements of the *National Electrical Code (NEC)*, *OSHA*, and *NFPA 70E - Standard for Electrical Safety Requirements for Employee Workplaces*.
- B. Each person performing electrical demolition shall be a "qualified person" as defined by *NFPA 70E* and the *NEC*.
- C. The following publications form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.
1. Environmental Protection Agency (EPA). 40 CFR Part 761, *Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use*

*Prohibitions. 40 CFR Part 273, Standards for Universal Waste Management.*

2. U.S. Department of Labor, Occupational Safety and Health Administration  
(OSHA) 29 CFR Part 1910.94 Subpart G, *Occupational Health and Environmental Control.*
3. Department of Transportation (DOT): 49 CFR Part 178, *Regulations for Shipping Container Specifications.*

#### 1.5 COORDINATION

- A. Conduct demolition to minimize interference with adjacent and occupied building areas.
- B. Coordinate and sequence demolition so as not to cause shutdown of operation of surrounding areas.
- C. Shut-down Periods:
  1. Do not shut down any utility without prior written approval.
- D. Identify salvage items in cooperation with Chevron.

#### PART 2 PRODUCTS

##### 2.1 PRODUCT OPTIONS AND SUBSTITUTIONS

- A. Alternate products may be accepted; follow Section 16 "Electrical General Requirements".

##### 2.2 MATERIALS AND EQUIPMENT

- A. Provide materials and equipment for patching and extending work as specified in the individual Sections.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Before work begins on the demolition or salvage of electrical equipment, wiring, or systems:
1. Inspect the site to identify any hazardous materials such as PCBs, asbestos, lead, mercury or other heavy metal, or toxic, flammable or explosive materials, or radioactive materials that may be handled, disturbed or removed. Typical locations of hazardous materials include:
    - a. Lead: Batteries in emergency lighting, exit signs, fire alarm panels, security systems; some circuit breakers.
    - b. PCBs: Transformers, capacitors, lighting ballasts.
    - c. Asbestos: The buildings have been tested and found no asbestos-containing materials. Should any suspect materials be encountered, notify the Architect.
    - d. Mercury: Fluorescent lamps, HID lamps, thermostats, silent switches, relays.
    - e. Radioactive materials: Self-luminous exit signs, smoke detectors.
  2. Have the inspection results available at the worksite, including any drawings, plans or specifications, as appropriate, to show the locations of any hazardous substances.
  3. Ensure that any hazardous materials found are safely contained or removed.
  4. During demolition work, if hazardous materials are discovered that were not identified in the initial inspection required above, stop work in the area and notify the Owner. Do not resume work in the area until directed by the Owner.
- B. Verify wiring and equipment indicated to be demolished serve only abandoned facilities.

- C. Verify termination points and lockout-tagout device locations for services, circuits, and systems to be disconnected or removed.
- D. Demolition Drawings are based on casual field observation and/or existing record documents. Report discrepancies to the Architect before disturbing existing installation.
- E. Beginning of demolition work means Contractor accepts existing conditions.

### 3.2 PREPARATION

- A. Protect existing materials, appurtenances and equipment which are not to be demolished. Repair or replace existing materials, appurtenances and equipment, building exterior and interior, and landscaping altered or damaged during demolition work to match existing undisturbed conditions at no additional cost to Owner.
- B. Erect, and maintain temporary safeguards, including warning signs and lights, barricades, and similar measures, for protection of the public, facility personnel, Contractor's employees, and existing improvements to remain.
- C. Maintain any parking areas, driveways, exterior walkways, exit paths, and landscaping in a clean, undisturbed condition.
- D. Coordinate utility service outages with the Owner and Utility Company.
  - 1. Request underground utilities to be located and marked within and surrounding construction areas.
  - 2. All work on or near energized electrical utilities will be performed or supervised by the Utility Company.
  - 3. Protect utilities indicated to remain, from damage.
- E. Provide temporary wiring and connections to maintain existing systems in service, if needed. When work must be performed on energized equipment or circuits use qualified personnel in such operations. In particular, all security and safety systems must be maintained in

operation at all times. This includes security and safety lighting.

### 3.3 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

- A. Establish an electrically safe work condition in areas where electrical work is to be removed.
  - 1. Perform work on energized equipment or circuits with qualified personnel as defined by the *National Electrical Code*.
  - 2. Verify zero-voltage before beginning demolition.
  - 3. Disconnect, remove, and cap designated utility lines within demolition areas. Mark locations of disconnected utilities. Identify utilities and indicate capping locations on Project Record Documents.
- B. Protect and retain power to existing active equipment that is to remain.
  - 1. Maintain access to existing electrical installations which remain active. Modify installation or provide access panel as appropriate.
  - 2. Install temporary wiring and connections to maintain existing systems in service during construction.
- C. Carefully remove equipment, materials, or fixtures which are to be reused. Store and protect to prevent damage.
- D. Remove electrical equipment, conduit and wiring which are not part of the final project.
  - 1. Remove items in an orderly and careful manner.
  - 2. Remove abandoned wiring to panelboard circuit breaker or source of supply.
  - 3. Remove exposed abandoned raceways.
  - 4. Cap abandoned empty conduit at both ends.

5. If certain raceways and boxes are abandoned but not scheduled for removal, identify those items on the "As Built Drawings".
- E. Provide proper and permanent support to adjacent structure for all raceways, and equipment to remain.
- F. Repair adjacent construction and finishes damaged during demolition and extension work.
  1. Patch and seal unused existing wall penetrations to match existing conditions and to restore fire rating.
- G. Investigate and measure the nature and extent of unanticipated items that conflict with intended function or design. Submit written report with accurate detailed information to Architect. While awaiting instructions from Architect, rearrange selective demolition schedule as necessary to continue overall job progress without delay.
- H. Stop work and notify Owner immediately if structure or other items to remain appear to be endangered. Do not resume work until directed by Owner.
- I. Remove demolished materials as work progresses.

#### 3.4 DISPOSITION OF MATERIAL AND EQUIPMENT

- A. Unless indicated otherwise, material removed under this Contract which is not to be salvaged or reused in the Project shall become the property of the Contractor.
- B. Upon completion, clean the entire area of demolition residue satisfactory for the continuation of the Work. Remove temporary work.

END OF SECTION