

# PROJECT MANUAL

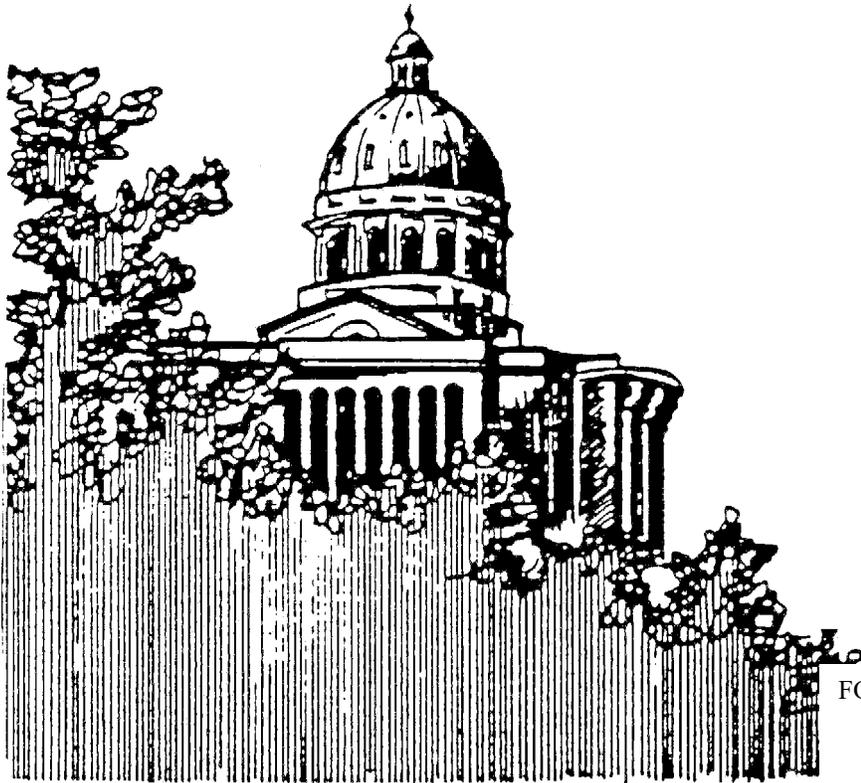
## REBID

### Repair Parking Lots and Driveways Troop C Headquarters Weldon Springs, St. Charles County, Missouri

DESIGNED BY: MECO Engineering Company Inc.  
3120 Palmyra Rd  
Hannibal, MO 63401

DATE ISSUED: 6/21/2019

PROJECT NO.: R1905-01



FOR: State of Missouri  
Office of Administration  
Division of Facilities Management,  
Design and Construction

**SECTION 000107 - PROFESSIONAL SEALS AND CERTIFICATIONS**

**PROJECT NUMBER: R1905-01**

**MECO No: 248-034**

**THE FOLLOWING DESIGN PROFESSIONALS HAVE SIGNED AND SEALED THE ORIGINAL PLANS AND SPECIFICATIONS FOR THIS PROJECT, WHICH ARE ON FILE WITH THE DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION:**

**Scott E. Vogler, P.E.**

**MECO Engineering Company, Inc.**

**State of Mo Professional Engineer: MO/E-22510**



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**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

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

**1.2 SUMMARY**

- A. This Section provides a comprehensive list of the drawings that comprise the Bid Documents for this project.

**PART 2 - PRODUCTS (NOT APPLICABLE)**

**PART 3 - EXECUTION**

**3.1 LIST OF DRAWINGS**

- A. The following list of drawings is a part of the Bid Documents:

	<u>TITLE</u>	<u>SHEET #</u>	<u>DATE</u>	<u>CAD #</u>
1.	Cover Sheet/Location Map	Sheet G-001	6/21/2019	
2.	Existing Site Conditions and Removal	Sheet C-101	6/21/2019	
3.	Pavement Marking Plan	Sheet C-102	6/21/2019	
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**END OF SECTION 000115**

## SECTION 001116 - INVITATION FOR BID

### 1.0 OWNER:

- A. The State of Missouri  
Office of Administration,  
Division of Facilities Management, Design and Construction  
Jefferson City, Missouri

### 2.0 PROJECT TITLE AND NUMBER:

REBID  
Repair Parking Lots and Driveways  
Troop C Headquarters  
Weldon Springs, St. Charles County, Missouri  
**Project No.: R1905-01**

### 3.0 BIDS WILL BE RECEIVED:

- A. Until: 1:30 PM, Thursday, June 11, 2020
- B. **Only electronic bids on MissouriBUYS shall be accepted: <https://missouribuys.mo.gov>. Bidder must be registered to bid.**

### 4.0 DESCRIPTION:

- A. Scope: The project includes The work consists of removing pavement, milling, reconstruction, resurfacing, inlet adjusting, rehabilitation of sidewalk sections and curbs, curb modifications for lawn mower access, replacement of the sensing cable at security access, and all items incidental to the completion of work according to the plans and specifications.
- B. Estimate: \$143,000 to \$196,000
- C. MBE/WBE/SDVE Goals: MBE 10.00%, WBE 10.00%, & SDVE 3.00%. **NOTE: Only MBE/WBE firms certified by a State of Missouri public entity as of the date of bid opening, or SDVE(s) meeting the requirements of Section 34.074, RSMo and 1 CSR 30-5.010, can be used to satisfy the MBE/WBE/SDVE participation goals for this project.**
- D. **\*\*NOTE: Bidders are provided new Good Faith Effort (GFE) forms on MissouriBUYS.**

### 5.0 PRE-BID MEETING:

- A. Place/Time: 10:00 AM; Thursday, May 28, 2020; 891 Technology Drive, Weldon Springs, MO 63304.
- B. Access to State of Missouri property requires presentation of a photo ID by all persons

### 6.0 HOW TO GET PLANS & SPECIFICATIONS:

- A. View Only Electronic bid sets are available at no cost or paper bid sets for a deposit of \$30 from American Document Solutions (ADS). MAKE CHECKS PAYABLE TO: American Document Solutions. Mail to: American Document Solutions, 1400 Forum Blvd., Suite 7A, Columbia, Missouri 65203. Phone 573-446-7768, Fax 573-355-5433, <https://www.adsplanroom.net>. NOTE: Prime contractors will be allowed a maximum of two bid sets at the deposit rate shown above. Other requesters will be allowed only one bid set at this rate. Additional bid sets or parts thereof may be obtained by any bidder at the cost of printing and shipping by request to American Document Solutions at the address shown above. **Bidder must secure at least one bid set to become a planholder.**
- B. **Refunds: Return plans and specifications in unmarked condition within 15 working days of bid opening to American Document Solutions, 1400 Forum Blvd., Suite 7A, Columbia, Missouri 65203. Phone 573-446-7768, Fax 573-355-5433. Deposits for plans not returned within 15 working days shall be forfeited.**
- C. Information for upcoming bids, including downloadable plans, specifications, Invitation for Bid, bid tabulation, award, addenda, and access to the ADS planholders list, is available on the Division of Facilities Management, Design and Construction's web site: <https://oa.mo.gov/facilities/bid-opportunities/bid-listing-electronic-plans>.

### 7.0 POINT OF CONTACT:

- A. Designer: MECO Engineering Company Inc., Scott Vogler, phone # 573-893-5558, fax # 573-893-5404
- B. Project Manager: Terry Bruns, phone # 573-526-5184, fax # 573-751-7277

### 8.0 GENERAL INFORMATION:

- A. The State reserves the right to reject any and all bids and to waive all informalities in bids. No bid may be withdrawn for a period of 20 working days subsequent to the specified bid opening time. The contractor shall pay not less than the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed, as determined by the Missouri Department of Labor and Industrial Relations and as set out in the detailed plans and specifications.
- B. Bid results will be available at <https://oa.mo.gov/facilities/bid-opportunities/bid-listing-electronic-plans> after it is verified that at least one bid is awardable and affordable.

## Very Important MissouriBUYS Instructions to Help Submit a Bid Correctly

- A. The bidder shall submit his or her bid and all supporting documentation on MissouriBUYS eProcurement System. No hard copy bids shall be accepted. Go to <https://missouribuy.mo.gov> and register. The bidder must register before access is granted to the solicitation details and bidding is possible, however, the bidder can review a summary of the project by selecting "Bid Board" and then checking off "Open" under "Status" and "OA-FMDC-Contracts Chapter 8" under "Organization" in the boxes shown on the left margin.
- B. Once registered, log in.
1. Under "Solicitation" select "View Current Solicitations." A new screen will open.
  2. Under "Filter by Agency" select "OA-FMDC-Contracts Chapter 8."
  3. Under "Filter by Opp. No." type in the State Project Number. Select "Submit."
  4. Above the dark blue bar, select "Other Active Opportunities."
  5. To see the Solicitation Summary, single click the Opp. No. (Project Number) and the summary will open. Single quick click each blue bar to open detailed information.
- C. Here are simplified instructions for uploading the bid to MissouriBUYS:
1. Find the solicitation by completing Steps 1 through 4 above.
  2. Select the three dots under "Actions." Select "Add New Response."
  3. When the Quote box opens, give the response a title and select "OK."
  4. The detailed solicitation will open. Select "Check All" for the Original Solicitation Documents, open each document, and select "Accept." If this step is not completed, a bid cannot be uploaded. Scroll to the bottom of the page and select "Add Attachments." If you do not see this command, not all documents have been opened and accepted.
  5. The Supplier Attachments box will open. Select "Add Attachment" again.
  6. The Upload Documents box will open. Read the instructions for uploading. Disregard the "Confidential" check box.
  7. Browse and attach up to 5 files at a time. Scroll to bottom of box and select "Upload." The Supplier Attachments box will open. Repeat Steps 5 through 7 if more than 5 files are to be uploaded.
  8. When the Supplier Attachments box opens again and uploading is complete, select "Done." A message should appear that the upload is successful. If it does not, go to the Bidder Response tab and select "Submit."
  9. The detailed solicitation will open. At the bottom select "Close."
- D. Any time a bidder wants to modify the bid, he or she will have to submit a new one. FMDC will open the last response the bidder submits. The bidder may revise and submit the bid up to the close of the solicitation (bid date and time). Be sure to allow for uploading time so that the bid is successfully uploaded prior to the 1:30 PM deadline; we can only accept the bid if it is uploaded before the deadline.
- E. If you want to verify that you are uploading documents correctly, we encourage you to submit a fake bid early. Label the fake bid as such to distinguish it from the real bid. The contracts person you contact will let you know if your "bid" was received successfully. Please contact Kelly Copeland: 573-522-2283, [kelly.copeland@oa.mo.gov](mailto:kelly.copeland@oa.mo.gov), or Paul Girouard: 573-751-4797, [paul.girouard@oa.mo.gov](mailto:paul.girouard@oa.mo.gov).
- F. If you are experiencing login issues, please contact Web Procure Support (Proactis) at 866-889-8533 anytime from 7:00 AM to 7:00 PM Central Time, Monday through Friday. If you try using a userid or password several times that is incorrect, the system will lock you out. Web Procure Support is the only option to unlock you! If you forget your userid or password, Web Procure Support will provide a temporary userid or password. Also, if it has been a while since your last successful login and you receive an "inactive" message, contact Web Procure (Proactis). If you are having a registration issue, you may contact Cathy Holliday at 573-751-3491 or by email: [cathy.holliday@oa.mo.gov](mailto:cathy.holliday@oa.mo.gov).

## IMPORTANT INFORMATION REGARDING REQUIREMENT FOR OEO CERTIFICATION

### SPECIFICATION CHANGES:

A. SECTION 002113 – INSTRUCTIONS TO BIDDERS: Article 14.0, Section B.1. (bottom of page 6 of 8): Delete: “an MBE or WBE must be certified by the State of Missouri, Office of Equal Opportunity and”.

To allow MBE, WBE, or MBE/WBE contractors, subcontractors, and suppliers to have ample time to register with the Office of Equal Opportunity, this requirement will not take effect until July 1, 2020. Until then, we will continue to accept certifications from the Office of Equal Opportunity and other Missouri certifying agencies.

## **SECTION 002113 – INSTRUCTIONS TO BIDDERS**

### **1.0 - SPECIAL NOTICE TO BIDDERS**

- A. If awarded a contract, the Bidder's employees, and the employees of all subcontractors, who perform the work on the project, will be required to undergo a fingerprint background check and obtain a State of Missouri identification badge prior to beginning work on site. The Bidder should review the information regarding this requirement in Section 013513 – Site Security and Health Requirements prior to submitting a bid.
- B. The Bidder's prices shall include all city, state, and federal sales, excise, and similar taxes that may lawfully be assessed in connection with the performance of work, and the purchased of materials to be incorporated in the work. THIS PROJECT IS NOT TAX EXEMPT.

### **2.0 - BID DOCUMENTS**

- A. The number of sets obtainable by any one (1) party may be limited in accordance with available supply.
- B. For the convenience of contractors, sub-contractors and suppliers, copies of construction documents are on file at the office of the Director, Division of Facilities Management, Design and Construction and on the Division's web site - <https://oa.mo.gov/facilities/bid-opportunities/bid-listing-electronic-plans>.

### **3.0 - BIDDERS' OBLIGATIONS**

- A. Bidders must carefully examine the entire site of the work and shall make all reasonable and necessary investigations to inform themselves thoroughly as to the facilities available as well as to all the difficulties involved in the completion of all work in accordance with the specifications and the plans. Bidders are also required to examine all maps, plans and data mentioned in the specifications. No plea of ignorance concerning observable existing conditions or difficulties that may be encountered in the execution of the work under this contract will be accepted as an excuse for any failure or omission on the part of the contractor to fulfill in every detail all of the requirements of the contract, nor accepted as a basis for any claims for extra compensation.
- B. Under no circumstances will contractors give their plans and specifications to another contractor. Any bid received from a contractor whose name does not appear on the list of plan holders may be subject to rejection.

### **4.0 - INTERPRETATIONS**

- A. No bidder shall be entitled to rely on oral interpretations as to the meaning of the plans and specifications or the acceptability of alternate products, materials, form or type of construction. Every request for interpretation shall be made in writing and submitted with all supporting documents not less than five (5) working days before opening of bids. Every interpretation made to a bidder will be in the form of an addendum and will be sent as promptly as is practicable to all persons to whom plans and specifications have been issued. All such addenda shall become part of the contract documents.
- B. Approval for an "acceptable substitution" issued in the form of an addendum as per Paragraph 4A above, and as per Article 3.1 of the General Conditions; ACCEPTABLE SUBSTITUTIONS shall constitute approval for use in the project of the product.
- C. An "acceptable substitution" requested after the award of bid shall be approved if proven to the satisfaction of the Owner and the Designer as per Article 3.1, that the product is acceptable in design, strength, durability, usefulness, and convenience for the purpose intended. Approval of the substitution after award is at the sole discretion of the Owner.
- D. A request for "Acceptable Substitutions" shall be made on the Section 006325 Substitution Request Form. The request shall be sent directly to the project Designer. A copy of said request should also be mailed to the Owner, Division of Facilities Management, Design and Construction, Post Office Box 809, Jefferson City, Missouri 65102.

### **5.0 - BIDS AND BIDDING PROCEDURE**

- A. Bidders shall submit all submission forms and accompanying documents listed in SECTION 004113 – BID FORM, Article 5.0, ATTACHMENTS TO BID by the stated time or their bid will be rejected for being non-responsive.

Depending on the specific project requirements, **the following is a GENERIC list** of all possible bid forms that may be due with bid submittals and times when they may be due. Please check for specific project requirements on the proposal form (Section 004113). ***Not all of the following bid forms may be required to be submitted.***

**Bid Submittal – due before stated date and time of bid opening (see IFB):**

004113	Bid Form (all pages are always required)
004322	Unit Prices Form
004336	Proposed Subcontractors Form
004337	MBE/WBE/SDVE Compliance Evaluation Form
004338	MBE/WBE/SDVE Eligibility Determination for Joint Ventures
004339	MBE/WBE/SDVE GFE Determination
004340	SDVE Business Form
004541	Affidavit of Work Authorization

- B. All bids shall be submitted without additional terms and conditions, modification or reservation on the bid forms with each space properly filled. Bids not on these forms will be rejected.
- C. All bids shall be accompanied by a bid bond executed by the bidder and a duly authorized surety company, certified check, cashier's check or bank draft made payable to the Division of Facilities Management, Design and Construction, State of Missouri, in the amount indicated on the bid form, Section 004113. Failure of the contractor to submit the full amount required shall be sufficient cause to reject his bid. The bidder agrees that the proceeds of the check, draft or bond shall become the property of the State of Missouri, if for any reason the bidder withdraws his bid after closing, or if on notification of award refuses or is unable to execute tendered contract, provide an acceptable performance and payment bond, provide evidence of required insurance coverage and/or provide required copies of affirmative action plans within ten (10) working days after such tender.
- D. The check or draft submitted by the successful bidder will be returned after the receipt of an acceptable performance and payment bond and execution of the formal contract. Checks or drafts of all other bidders will be returned within a reasonable time after it is determined that the bid represented by same will receive no further consideration by the State of Missouri. Bid bonds will only be returned upon request.

**6.0 - SIGNING OF BIDS**

- A. A bid from an individual shall be signed as noted on the Bid Form.
- B. A bid from a partnership or joint venture shall require only one signature of a partner, an officer of the joint venture authorized to bind the venture or an attorney-in-fact. If the bid is signed by an officer of a joint venture or an attorney-in-fact, a document evidencing the individual's authority to execute contracts should be included with the bid form.
- C. A bid from a limited liability company (LLC) shall be signed by a manager or a managing member of the LLC.
- D. A bid from a corporation shall have the correct corporate name thereon and the signature of an authorized officer of the corporation manually written. Title of office held by the person signing for the corporation shall appear, along with typed name of said individual. Corporate license number shall be provided and, if a corporation organized in a state other than Missouri, a Certificate of Authority to do business in the State of Missouri shall be attached. In addition, for corporate proposals, the President or Vice-President should sign as the bidder. If the signator is other than the corporate president or vice president, the bidder must provide satisfactory evidence that the signator has the legal authority to bind the corporation.
- E. A bid should contain the full and correct legal name of the Bidder. If the Bidder is an entity registered with the Missouri Secretary of State, the Bidder's name on the bid form should appear as shown in the Secretary of State's records.
- F. The Bidder should include its corporate license number on the Bid Form and, if the corporation is organized in a state other than Missouri, a Certificate of Authority to do business in the State of Missouri shall be attached to the bid form.

## **7.0 - RECEIVING BID SUBMITTALS**

- A. It is the bidder's sole responsibility to assure receipt by Owner of bid submittals by the date and time specified in the Invitation for Bid. Bids received after the date and time specified shall not be considered by the Owner.
- B. Bids must be submitted through the MissouriBUYS statewide eProcurement system (<https://www.missouribuys.mo.gov/>) in accordance with the instructions for that system. The Owner shall only accept bids submitted through MissouriBUYS. Bids received by the Owner through any other means, including hard copies, shall not be considered and will be discarded by the Owner unopened.
- C. To respond to an Invitation for Bid, the Bidder must first register with MissouriBUYS by going through the MissouriBUYS Home Page (<https://www.missouribuys.mo.gov/>), clicking the "Register" button at the top of the page, and completing the Vendor Registration. Once registered, the Bidder accesses its account by clicking the "Login" button at the top of the MissouriBUYS Home Page. Enter your USERID and PASSWORD, which the Bidder will select. Under Solicitations, select "View Current Solicitations." A new screen will open. Under "Filter by Agency" select "OA-FMDC-Contracts Chapter 8." Under "Filter by Opp. No." type in the State Project Number. Select "Submit." Above the dark blue bar, select "Other Active Opportunities." To see the Solicitation Summary, single click the Opp. No. (Project Number) and the summary will open. Single quick click each blue bar to open detailed information. The Bidder must read and accept the Original Solicitation Documents and complete all identified requirements. The Bidder should download and save all of the Original Solicitation Documents on its computer so that the Bidder can prepare its response to these documents. The Bidder should upload its completed response to the downloaded documents as an attachment to the electronic solicitation response.
- D. Step-by-step instructions for how a registered vendor responds to a solicitation electronically are provided in Section 001116 – Invitation For Bid.
- E. The Bidder shall submit its bid on the forms provided by the Owner on MissouriBUYS with each space fully and properly completed, including all amounts required for alternate bids, unit prices, cost accounting data, etc. The Owner may reject bids that are not on the Owner's forms or that do not contain all requested information.
- F. No Contractor shall stipulate in his bid any conditions not contained in the specifications or standard bid form contained in the contract documents. To do so may subject the Contractor's bid to rejection.
- G. The completed forms shall be without interlineations, alterations or erasures.

## **8.0 - MODIFICATION AND WITHDRAWAL OF BIDS**

- A. Bidder may withdraw his bid at any time prior to scheduled closing time for receipt of bids, but no bidder may withdraw his bid for a period of twenty (20) working days after the scheduled closing time for receipt of bids.
- B. The Bidder shall modify his or her original bid by submitting a revised bid on MissouriBUYS.

## **9.0 - AWARD OF CONTRACT**

- A. The Owner reserves the right to reject any and/or all bids and further to waive all informalities in bidding when deemed in the best interest of the State of Missouri.
- B. The Owner reserves the right to let other contracts in connection with the work, including but not by way of limitation, contracts for the furnishing and installation of furniture, equipment, machines, appliances and other apparatus.
- C. In awarding the contract the Owner may take into consideration the bidder's skill, facilities, capacity, experience, responsibility, previous work record, financial standing and the necessity of prompt and efficient completion of work herein described. Inability of any bidder to meet the requirements mentioned above may be cause for rejection of his bid. However, no contract will be awarded to any individual,

partnership or corporation, who has had a contract with the State of Missouri declared in default within the preceding twelve months.

- D. Award of alternates, if any, will be made in numerical order unless all bids received are such that the order of acceptance of alternates does not affect the determination of the low bidder.
- E. No bid shall be considered binding upon the Owner until the written contract has been properly executed, a satisfactory bond has been furnished, evidence of required insurance coverage, submittal of executed Section 004541, Affidavit of Work Authorization form, documentation evidencing enrollment and participation in a federal work authorization program has been received and an affirmative action plan submitted. Failure to execute and return the contract and associated documents within the prescribed period of time shall be treated, at the option of the Owner, as a breach of bidder's obligation and the Owner shall be under no further obligation to bidder.
- F. If the successful bidder is doing business in the State of Missouri under a fictitious name, he shall furnish to Owner, attached to the Bid Form, a properly certified copy of the certificate of Registration of Fictitious Name from the State of Missouri, and such certificate shall remain on file with the Owner.
- G. Any successful bidder which is a corporation organized in a state other than Missouri shall furnish to the Owner, attached to the Bid Form, a properly certified copy of its current Certificate of Authority to do business in the State of Missouri, such certificate to remain on file with the Owner. No contract will be awarded by the Owner unless such certificate is furnished by the bidder.
- H. Any successful bidder which is a corporation organized in the State of Missouri shall furnish at its own cost to the Owner, if requested, a Certificate of Good Standing issued by the Secretary of State, such certificate to remain on file with the Owner.
- I. Transient employers subject to Sections 285.230 and 285.234, RSMo, (out-of-state employers who temporarily transact any business in the State of Missouri) may be required to file a bond with the Missouri Department of Revenue. No contract will be awarded by the Owner unless the successful bidder certifies that he has complied with all applicable provisions of Section 285.230-234.
- J. Sections 285.525 and 285.530, RSMo, require business entities to enroll and participate in a federal work authorization program in order to be eligible to receive award of any state contract in excess of \$5,000. Bidders should submit with their bid an Affidavit of Work Authorization (Section 004541) along with appropriate documentation evidencing such enrollment and participation. Section-004541, Affidavit of Work Authorization is located on the MissouriBUYS solicitation for this project. Bidders must also submit an E-Verify Memorandum before the Owner may award a contract to the Bidder. Information regarding a E-Verify is located at <https://www.uscis.gov/e-verify/>. The contractor shall be responsible for ensuring that all subcontractors and suppliers associated with this contract enroll in E-Verify.

#### **10.0 - CONTRACT SECURITY**

- A. The successful bidder shall furnish a performance/payment bond as set forth in General Conditions Article 6.1 on a condition prior to the State executing the contract and issuing a notice to proceed.

#### **11.0 - LIST OF SUBCONTRACTORS**

- A. If required by "Section 004113 – Bid Form," each bidder must submit as part of their bid a list of subcontractors to be used in performing the work (Section 004336). The list must specify the name of the single designated subcontractor, for each category of work listed in "Section 004336 - Proposed Subcontractors Form." If work within a category will be performed by more than one subcontractor, the bidder must provide the name of each subcontractor and specify the exact portion of the work to be done by each. Failure to list the Bidder's firm, or a subcontractor for each category of work identified on the Bid Form or the listing of more than one subcontractor for any category without designating the portion of work to be performed by each shall be cause for rejection of the bid. If the bidder intends to perform any of the designated subcontract work with the use of his own employees, the bidder shall make that fact clear, by listing his own firm for the subject category. **If any category of work is left vacant, the bid shall be rejected.**

#### **12.0 - WORKING DAYS**

- A. Contract duration time is stated in working days and will use the following definition in determining the actual calendar date for contract completion:

1. Working days are defined as all calendar days except Saturdays, Sundays and the following State of Missouri observed holidays: New Year's Day, Martin Luther King, Jr. Day, Lincoln Day, Washington's Birthday, Truman Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day and Christmas Day.

### **13.0 - AMERICAN AND MISSOURI - MADE PRODUCTS AND FIRMS**

- A. By signing the bid form and submitting a bid on this project, the Bidder certifies that it will use American and Missouri products as set forth in Article 1.7 of the General Conditions. Bidders are advised to review those requirements carefully prior to bidding.
- B. A preference shall be given to Missouri firms, corporations or individuals, or firms, corporations or individuals that maintain Missouri offices or places of business, when the quality of performance promised is equal or better and the price quoted is the same or less.
- C. Pursuant to Section 34.076, RSMo, a contractor or Bidder domiciled outside the boundaries of the State of Missouri shall be required, in order to be successful, to submit a bid the same percent less than the lowest bid submitted by a responsible contractor or Bidder domiciled in Missouri as would be required for such a Missouri domiciled contractor or Bidder to succeed over the bidding contractor or Bidder domiciled outside Missouri on a like contract or bid being let in the person's domiciliary state and, further, the contractor or Bidder domiciled outside the boundaries of Missouri shall be required to submit an audited financial statement as would be required of a Missouri domiciled contractor or Bidder on a like contract or bid being let in the domiciliary state of that contractor or Bidder.

### **14.0 - MBE/WBE/SDVE INSTRUCTIONS**

#### **A. Definitions:**

1. "MBE" means a Minority Business Enterprise.
2. "MINORITY" has the same meaning as set forth in 1 C.S.R. 10-17.010.
3. "MINORITY BUSINESS ENTERPRISE" has the same meaning as set forth in section 37.020, RSMo.
4. "WBE" means a Women's Business Enterprise.
5. "WOMEN'S BUSINESS ENTERPRISE" has the same meaning as set forth in section 37.020, RSMo.
6. "SDVE" means a Service-Disabled Veterans Enterprise.
7. "SERVICE-DISABLED VETERAN" has the same meaning as set forth in section 34.074, RSMo.
8. "SERVICE-DISABLED VETERAN ENTERPRISE" has the same meaning as "Service-Disabled Veteran Business" set forth in section 34.074, RSMo.

#### **B. MBE/WBE/SDVE General Requirements:**

1. For all bids greater than \$100,000, the Bidder shall obtain MBE, WBE and SDVE participation in an amount equal to or greater than the percentage goals set forth in the Invitation for Bid and the Bid Form, unless the Bidder is granted a Good Faith Effort waiver by the Director of the Division, as set forth below. If the Bidder does not meet the MBE, WBE and SDVE goals, or make a good faith effort to do so, the Bidder shall be non-responsive, and its bid shall be rejected.
2. The Bidder should submit with its bid all of the information requested in the MBE/WBE/SDVE Compliance Evaluation Form for every MBE, WBE, or SDVE subcontractor or material supplier the Bidder intends to use for the contract work. The Bidder is required to submit all appropriate

MBE/WBE/SDVE documentation before the stated time and date set forth in the Invitation for Bid. If the Bidder fails to provide such information by the specified date and time, the Owner shall reject the bid.

3. The Director reserves the right to request additional information from a Bidder to clarify the Bidder's proposed MBE, WBE, and/or SDVE participation. The Bidder shall submit the clarifying information requested by the Owner within two (2) Working Days of receiving the request for clarification.
4. Pursuant to section 34.074, RSMo, a Bidder that is a SDVE doing business as Missouri firm, corporation, or individual, or that maintains a Missouri office or place of business, shall receive a three-point bonus preference in the contract award evaluation process. The bonus preference will be calculated and applied by reducing the bid amount of the eligible SDVE by three percent of the apparent low responsive bidder's bid. Based on this calculation, if the eligible SDVE's evaluation is less than the apparent low responsive bidder's bid, the eligible SDVE's bid becomes the apparent low responsive bid. This reduction is for evaluation purposes only, and will have no impact on the actual amount(s) of the bid or the amount(s) of any contract awarded. In order to be eligible for the SDVE preference, the Bidder must complete and submit with its bid the Missouri Service Disabled Veteran Business Form, and any information required by the form. The form is available on the MissouriBUYS solicitation for this project.

**A. Computation of MBE/WBE/SDVE Goal Participation:**

1. A Bidder who is a MBE, WBE, or SDVE may count 100% of the contract towards the MBE, WBE or SDVE goal, less any amounts awarded to another MBE, WBE or SDVE. (NOTE: A MBE firm that bids as general contractor must obtain WBE and SDVE participation; a WBE firm that bids as a general contractor must obtain MBE and SDVE participation; and a SDVE firm that bids as general contractor must obtain MBE and WBE participation.) In order for the remaining contract amount to be counted towards the MBE, WBE or SDVE goal, the Bidder must complete the MBE/WBE/SDVE Compliance Evaluation Form (Section 004337) identifying itself as an MBE, WBE or SDVE.
2. The total dollar value of the work granted to a certified MBE, WBE or SDVE by the Bidder shall be counted towards the applicable goal.
3. Expenditures for materials and supplies obtained from a certified MBE, WBE, or SDVE supplier or manufacturer may be counted towards the MBE, WBE and SDVE goals, if the MBE, WBE, or SDVE assumes the actual and contractual responsibility for the provision of the materials and supplies.
4. The total dollar value of the work granted to a second or subsequent tier subcontractor or a supplier may be counted towards a Bidder's MBE, WBE and SDVE goals, if the MBE, WBE, or SDVE properly assumes the actual and contractual responsibility for the work.
5. The total dollar value of work granted to a certified joint venture equal to the percentage of the ownership and control of the MBE, WBE, or SDVE partner in the joint venture may be counted towards the MBE/WBE/SDVE goals.
6. Only expenditures to a MBE, WBE, or SDVE that performs a commercially useful function in the work may be counted towards the MBE, WBE and SDVE goals. A MBE, WBE, or SDVE performs a commercially useful function when it is responsible for executing a distinct element of the work and carrying out its responsibilities by actually performing, managing and supervising the work or providing supplies or manufactured materials.

**B. Certification of MBE/WBE/SDVE Subcontractors:**

1. In order to be counted towards the goals, an MBE or WBE must be certified by the State of Missouri, Office of Equal Opportunity and an SDVE must be certified by the State of Missouri, Office of Administration, Division of Purchasing and Material Management or by the Department of Veterans Affairs.

2. The Bidder may determine the certification status of a proposed MBE or WBE subcontractor or supplier by referring to the Office of Equal Opportunity (OEO)'s online MBE/WBE directory (<https://apps1.mo.gov/oeo/>). The Bidder may determine the eligibility of a SDVE subcontractor or supplier by referring to the Division of Purchasing and Materials Management's online SDVE directory (<http://oa.mo.gov/purchasing/vendor-information/missouri-service-disabled-veteran-business-enterprise-sdve-information>) or the Department of Veterans Affairs' directory (<https://www.vip.vetbiz.gov/>).
3. Additional information, clarifications, etc., regarding the listings in the directories may be obtained by calling the Division at (573)751-3339 and asking to speak to the Contract Specialist of record as shown in the Supplementary Conditions (Section 007300).

**C. Waiver of MBE/WBE/SDVE Participation:**

1. If a Bidder has made a good faith effort to secure the required MBE, WBE and/or SDVE participation and has failed, the Bidder shall submit with its bid the information requested in MBE/WBE/SDVE Good Faith Effort (GFE) Determination form. The GFE forms are located on the MissouriBUYS solicitation for this project. The Director will determine if the Bidder made a good faith effort to meet the applicable goals. If the Director determines that the Bidder did not make a good faith effort, the bid shall be rejected as being nonresponsive to the bid requirements. Bidders who demonstrate that they have made a good faith effort to include MBE, WBE, and/or SDVE participation will be determined to be responsive to the applicable participation goals, regardless of the percent of actual participation obtained, if the bid is otherwise acceptable.
2. In determining whether a Bidder has made a good faith effort to obtain MBE, WBE and/or SDVE participation, the Director may evaluate the factors set forth in 1 CSR 30-5.010(6)(C) and the following:
  - a. The amount of actual participation obtained;
  - b. How and when the Bidder contacted potential MBE, WBE, and SDVE subcontractors and suppliers;
  - c. The documentation provided by the Bidder to support its contacts, including whether the Bidder provided the names, addresses, phone numbers, and dates of contact for MBE/WBE/SDVE firms contacted for specific categories of work;
  - d. If project information, including plans and specifications, were provided to MBE/WBE/SDVE subcontractors;
  - e. Whether the Bidder made any attempts to follow-up with MBE, WBE or SDVE firms prior to bid;
  - f. Amount of bids received from any of the subcontractors and/or suppliers that the Bidder contacted;
  - g. The Bidder's stated reasons for rejecting any bids;
3. If no bidder has obtained any participation in a particular category (MBE/WBE/SDVE) or made a good faith effort to do so, the Director may waive that goal rather than rebid.

**D. Contractor MBE/WBE/SDVE Obligations**

1. If awarded a contract, the Bidder will be contractually required to subcontract with or obtain materials from the MBE, WBE, and SDVE firms listed in its bid, in amounts equal to or greater than the dollar amount bid, unless the amount is modified in writing by the Owner.
2. If the Contractor fails to meet or maintain the participation requirements contained in the Contractor's bid, the Contractor must satisfactorily explain to the Director why it cannot comply

with the requirement and why failing meeting the requirement was beyond the Contractor's control. If the Director finds the Contractor's explanation unsatisfactory, the Director may take any appropriate action including, but not limited to:

- a. Declaring the Contractor ineligible to participate in any contracts with the Division for up to twelve (12) months (suspension); and/or
  - b. Declaring the Contractor be non-responsive to the Invitation for Bid, or in breach of contract and rejecting the bid or terminating the contract.
3. If the Contractor replaces an MBE, WBE, or SDVE during the course of this contract, the Contractor shall replace it with another MBE, WBE, or SDVE or make a good faith effort to do so. All MBE, WBE and SDVE substitutions must be approved by the Director.
  4. The Contractor shall provide the Owner with regular reports on its progress in meeting its MBE/WBE/SDVE obligations. At a minimum, the Contractor shall report the dollar-value of work completed by each MBE, WBE, or SDVE during the preceding month and the cumulative total of work completed by each MBE, WBE or SDVE to date with each monthly application for payment. The Contractor shall also make a final report, which shall include the total dollar-value of work completed by each MBE, WBE, and SDVE during the entire contract.

**STATE OF MISSOURI  
DIVISION OF FACILITIES MANAGEMENT,  
DESIGN AND CONSTRUCTION  
*MBE/WBE/SDVE DIRECTORY***

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The MBE/WBE Directory for goods and services is maintained by the Office of Equal Opportunity (OEO). The current Directory can be accessed at the following web address:

<https://apps1.mo.gov/MWBCertifiedFirms/>

Please note that you may search by MBE, WBE, or both as well as by region, location of the business by city or state, as well as by commodity or service.

The SERVICE DISABLED VETERAN ENTERPRISE (SDVE) Directory (s) may be accessed at the following web addresses:

<https://oa.mo.gov/sites/default/files/sdvelisting.pdf>

<https://www.vip.vetbiz.va.gov>



# State of Missouri Construction Contract

THIS AGREEMENT, made (DATE) by and between:

## *Contractor Name and Address*

hereinafter called the "Contractor,"

and the **State of Missouri**, hereinafter called the "**Owner**", represented by the Office of Administration, Division of Facilities Management, Design and Construction, on behalf of the Department of Public Safety, Missouri State Highway Patrol.

WITNESSETH, that the Contractor and the Owner, for the consideration stated herein agree as follows:

## **ARTICLE 1. STATEMENT OF WORK**

The Contractor shall furnish all labor and materials and perform all work required for furnishing and installing all labor, materials, equipment and transportation and everything necessarily inferred from the general nature and tendency of the plans and specifications for the proper execution of the work for:

**Project Name:** **REBID  
Repair Parking Lots and Driveways  
Troop C Headquarters  
Weldon Springs, St. Charles County, Missouri**

**Project Number:** **R1905-01**

in strict accordance with the Contract Documents as enumerated in Article 7, all of which are made a part hereof.

## **ARTICLE 2. TIME OF COMPLETION**

The contract performance time is **45** working days from the transmittal date of this agreement. The contract completion date is **MONTH, DAY, YEAR**. This time includes ten (10) working days for the Contractor to receive, sign and return the contract form along with required bonding and insurance certificates. Failure of the Contractor to provide correct bonding and insurance within the ten (10) working days shall not be grounds for a time extension. Receipt of proper bonding and insurance is a condition precedent to the formation of the contract and if not timely received, may result in forfeiture of the Contractor's bid security. Work may not commence until the Owner issues a written Notice to Proceed and must commence within seven (7) working days thereafter.

## **ARTICLE 3. LIQUIDATED DAMAGES**

Whenever time is mentioned in this contract, time shall be and is of the essence of this contract. The Owner would suffer a loss should the Contractor fail to have the work embraced in this contract fully completed on or before the time above specified. THEREFORE, the parties hereto realize in order to adjust satisfactorily the damages on account of such failure that it might be impossible to compute accurately or estimate the amount of such loss or damages which the Owner would sustain by reason of failure to complete fully said work within the time required by this contract. The Contractor hereby covenants and agrees to pay the Owner, as and for **liquidated damages, the sum of \$500** per day for each and every day, Sunday and legal holidays excepted, during which the work remains incomplete and unfinished. Any sum which may be due the Owner for such damages shall be deducted and retained by the Owner from any balance which may be due the Contractor when said work shall have been finished and accepted. But such provisions shall not release the Bond of the Contractor from liability according to its terms. In case of failure to complete, the Owner will be under no obligation to show or prove any actual or specific loss or damage.

**ARTICLE 4. CONTRACT SUM**

The Owner shall pay the Contractor for the prompt, faithful and efficient performance of the conditions and undertakings of this contract, subject to additions, and deductions as provided herein, in current funds the sum of:

Base Bid: \$

**DELETE THE ALTERNATE INFORMATION IF NOT USED**

The Owner accepts the following Alternate Bids:

Alternate One: \$

**TOTAL CONTRACT AMOUNT: (\$CONTRACT AMOUNT)**

**UNIT PRICES:** The Owner accepts the following Unit Prices:

For changing specified quantities of work from those indicated by the contract drawings and specifications, upon written instructions of Owner, the following unit prices shall prevail. The unit prices include all labor, overhead and profit, materials, equipment, appliances, bailing, shoring, shoring removal, etc., to cover the finished work of the several kinds of work called for. Only a single unit price shall be given and it shall apply for either MORE or LESS work than that shown on the drawings and called for in the specifications or included in the Base Bid. In the event of more or less units than so indicated or included, change orders may be issued for the increased or decreased amount.

***INSERT UNIT PRICE DESCRIPTIONS AND QUANTITY INCLUDED IN THE BASE BID FROM SECTION 01026***

**OR**

**IF NO Unit Prices are used, type "NOT APPLICABLE"**

**ARTICLE 5. PREVAILING WAGE RATE**

It is understood and agreed by and between the parties that not less than the prevailing hourly rate of wages shall be paid for work of a similar character in the locality in which the work is performed, and not less than the prevailing hourly rate of wages for legal holiday and overtime work in the locality in which the work is performed, both as determined by the Department of Labor and Industrial Relations or as determined by the court on appeal, to all workmen employed by or on behalf of the Contractor or any subcontractor, exclusive of maintenance work. Only such workmen as are directly employed by the Contractor or his subcontractors, in actual construction work on the site shall be deemed to be employed.

When the hauling of materials or equipment includes some phase of the construction other than the mere transportation to the site of the construction, workmen engaged in this dual capacity shall be deemed to be employed directly on the project and entitled to the prevailing wage.

**ARTICLE 6. MINORITY/WOMEN/SERVICE DISABLED VETERAN BUSINESS ENTERPRISE PARTICIPATION**

The Contractor has been granted a waiver of the 10% MBE and 10% WBE and 3% SDVE participation goals. The Contractor agrees to secure the MBE/WBE/SDVE participation amounts for this project as follows: (OR)

The Contractor has met the MBE/WBE/SDVE participation goals and agrees to secure the MBE/WBE/SDVE participation amounts for this project as follows:

MBE/WBE/SDVE Firm: Subcontract Amt:\$  
MBE/WBE/SDVE Firm: Subcontract Amt:\$  
MBE/WBE/SDVE Firm: Subcontract Amt:\$

Total \$

MBE/WBE/SDVE assignments identified above shall not be changed without a Contract Change signed by the Owner.

The Director of the Division of Facilities Management, Design and Construction or his Designee shall be the final authority to resolve disputes and disagreements between the Contractor and the MBE/WBE/SDVE firms listed above when such disputes impact the subcontract amounts shown above.

**ARTICLE 7. CONTRACT DOCUMENTS**

Contract documents shall consist of the following component parts:

- 1. Division 0, with executed forms
- 2. Division 1
- 3. Executed Construction Contract Form
- 4. The Drawings
- 5. The Technical Specifications
- 6. Addenda
- 7. Contractor's Proposal as accepted by the Owner

By signature below, the parties hereby execute this contract document.

**APPROVED:**

\_\_\_\_\_  
 Mark Hill, P.E., Director  
 Division of Facilities Management,  
 Design and Construction

\_\_\_\_\_  
 Contractor's Authorized Signature

DELETE IF PRIVATE OR PARTNERSHIP

I, Corporate Secretary, certify that I am Secretary of the corporation named above and that (CONTRACTOR NAME), who signed said contract on behalf of the corporation, was then (TITLE) of said corporation and that said contract was duly signed for and in behalf of the corporation by authority of its governing body, and is within the scope of its corporate powers.

\_\_\_\_\_  
*Corporate Secretary*



STATE OF MISSOURI  
 OFFICE OF ADMINISTRATION  
 DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION  
**AFFIDAVIT FOR AFFIRMATIVE ACTION**

PROJECT NUMBER
----------------

NAME
------

First being duly sworn on oath states: that

he/she is the  sole proprietor  partner  officer or  manager or managing member of

NAME
------

a  sole proprietorship  partnership  
 limited liability company (LLC)

or  corporation, and as such, said proprietor, partner, or officer is duly authorized to make this

affidavit on behalf of said sole proprietorship, partnership, or corporation; that under the contract known as

PROJECT TITLE
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Less than 50 persons in the aggregate will be employed and therefore, the applicable Affirmative Action requirements as set forth in Article 1.4 of the General Conditions of the State of Missouri have been met.

PRINT NAME & SIGNATURE
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DATE
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**NOTARY INFORMATION**

NOTARY PUBLIC EMBOSSER SEAL
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STATE OF
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COUNTY (OR CITY OF ST. LOUIS)
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USE RUBBER STAMP IN CLEAR AREA BELOW
--------------------------------------

SUBSCRIBED AND SWORN BEFORE ME, THIS
--------------------------------------

DAY OF
--------

YEAR
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NOTARY PUBLIC SIGNATURE
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MY COMMISSION EXPIRES
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NOTARY PUBLIC NAME (TYPED OR PRINTED)
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**SECTION 006113 - PERFORMANCE AND PAYMENT BOND FORM**

KNOW ALL MEN BY THESE PRESENTS, THAT we \_\_\_\_\_

as principal, and \_\_\_\_\_

\_\_\_\_\_ as Surety, are held and firmly bound unto the

STATE OF MISSOURI. in the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ )

for payment whereof the Principal and Surety bind themselves, their heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

WHEREAS, the Principal has, by means of a written agreement dated the \_\_\_\_\_

day of \_\_\_\_\_, 20\_\_\_\_\_, enter into a contract with the State of Missouri for

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(Insert Project Title and Number)

NOW, THEREFORE, if the Principal shall faithfully perform and fulfill all the undertakings, covenants, terms, conditions and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the State of Missouri, with or without notice to the Surety and during the life of any guaranty required under the contract; and shall also faithfully perform and fulfill all undertakings, covenants, terms, conditions and agreements of any and all duly authorized modifications of said contract that may hereafter be made with or without notice to the Surety; and shall also promptly make payment for materials incorporated, consumed or used in connection with the work set forth in the contract referred to above, and all insurance premiums, both compensation and all other kinds of insurance, on said work, and for all labor performed on such work, whether by subcontractor or otherwise, at not less than the prevailing hourly rate of wages for work of a similar character (exclusive of maintenance work) in the locality in which the work is performed and not less than the prevailing hourly rate of wages for legal holiday and overtime work (exclusive of maintenance work) in the locality in which the work is performed both as determined by the Department of Labor and Industrial Relations or determined by the Court of Appeal, as provided for in said contract and in any and all duly authorized modifications of said contract that may be hereafter made, with or without notice to the Surety, then, this obligation shall be void and of no effect, but it is expressly understood that if the Principal should make default in or should fail to strictly, faithfully and efficiently do, perform and comply with any or more of the covenants, agreements, stipulations, conditions, requirements or undertakings, as specified in or by the terms of said contract, and with the time therein named, then this obligation shall be valid and binding upon each of the parties hereto and this bond shall remain in full force and effect; and the same may be sued on at the instance of any material man, laborer, mechanic, subcontractor, individual, or otherwise to whom such payment is due, in the name of the State of Missouri, to the use of any such person.

AND, IT IS FURTHER specifically provided that any modifications which may hereinafter be made in the terms of the contract or in the work to be done under it or the giving by the Owner of any extension of the time for the performance of the contract or any other forbearance on the part of either the Owner or the Principal to the other, shall not in any way release the Principal and the Surety, or either or any of them, their heirs, executors, administrators and successors, from their liability hereunder, notice to the Surety of any such extension, modifications or forbearance being hereby waived.

IN WITNESS WHEREOF, the above bounden parties have executed the within instrument this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

**AS APPLICABLE:**

**AN INDIVIDUAL**

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

Signature: \_\_\_\_\_

**A PARTNERSHIP**

Name of Partner: \_\_\_\_\_

Signature of Partner: \_\_\_\_\_

Name of Partner: \_\_\_\_\_

Signature of Partner: \_\_\_\_\_

**CORPORATION**

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

Signature of President: \_\_\_\_\_

**SURETY**

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

Attorney-in-Fact: \_\_\_\_\_

Address of Attorney-in-Fact: \_\_\_\_\_

Telephone Number of Attorney-in-Fact: \_\_\_\_\_

Signature Attorney-in-Fact: \_\_\_\_\_

**NOTE:** Surety shall attach Power of Attorney



STATE OF MISSOURI  
 OFFICE OF ADMINISTRATION  
 DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION  
**PRODUCT SUBSTITUTION REQUEST**

PROJECT NUMBER

PROJECT TITLE AND LOCATION

CHECK APPROPRIATE BOX

- SUBSTITUTION PRIOR TO BID OPENING**  
 (Minimum of (5) working days prior to receipt of Bids as per Article 4 – Instructions to Bidders)
- SUBSTITUTION FOLLOWING AWARD**  
 (Maximum of (20) working days from Notice to Proceed as per Article 3 – General Conditions)

FROM: BIDDER/CONTRACTOR (PRINT COMPANY NAME)

TO: ARCHITECT/ENGINEER (PRINT COMPANY NAME)

Bidder/Contractor hereby requests acceptance of the following product or systems as a substitution in accordance with provisions of Division One of the Bidding Documents:

SPECIFIED PRODUCT OR SYSTEM

SPECIFICATION SECTION NO.

SUPPORTING DATA

- Product data for proposed substitution is attached (include description of product, standards, performance, and test data)
- Sample                       Sample will be sent, if requested

**QUALITY COMPARISON**

	SPECIFIED PRODUCT	SUBSTITUTION REQUEST
NAME, BRAND		
CATALOG NO.		
MANUFACTURER		
VENDOR		

**PREVIOUS INSTALLATIONS**

PROJECT	ARCHITECT/ENGINEER	DATE INSTALLED
LOCATION		

**SIGNIFICANT VARIATIONS FROM SPECIFIED PRODUCT**

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**REASON FOR SUBSTITUTION**

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**DOES PROPOSED SUBSTITUTION AFFECT OTHER PARTS OF WORK?**

YES     NO

IF YES, EXPLAIN

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**SUBSTITUTION REQUIRES DIMENSIONAL REVISION OR REDESIGN OF STRUCTURE OR A/E WORK**

YES     NO

**BIDDER'S/CONTRACTOR'S STATEMENT OF CONFORMANCE OF PROPOSED SUBSTITUTION TO CONTRACT REQUIREMENT:**

We have investigated the proposed substitution. We believe that it is equal or superior in all respects to specified product, except as stated above; that it will provide the same Warranty as specified product; that we have included complete implications of the substitution; that we will pay redesign and other costs caused by the substitution which subsequently become apparent; and that we will pay costs to modify other parts of the Work as may be needed, to make all parts of the Work complete and functioning as a result of the substitution.

BIDDER/CONTRACTOR

DATE

**REVIEW AND ACTION**

Resubmit Substitution Request with the following additional information:

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Substitution is accepted.

Substitution is accepted with the following comments:

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Substitution is not accepted.

ARCHITECT/ENGINEER

DATE



STATE OF MISSOURI  
 OFFICE OF ADMINISTRATION  
 DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION  
**FINAL RECEIPT OF PAYMENT AND RELEASE**

PROJECT NUMBER

KNOW ALL MEN BY THESE PRESENT THAT:                    hereinafter called "Subcontractor" who heretofore entered into an agreement with                    hereinafter called "Contractor", for the performance of work and/or furnishing of material for the construction of the project entitled

(PROJECT TITLE, PROJECT LOCATION, AND PROJECT NUMBER)

at

(ADDRESS OF PROJECT)

for the State of Missouri (Owner) which said subcontract is by this reference incorporated herein, in consideration of such final payment by Contractor.

DOES HEREBY:

1. ACKNOWLEDGE that they have been **PAID IN FULL** all sums due for work and materials contracted or done by their Subcontractors, Material Vendors, Equipment and Fixture Suppliers, Agents and Employees, or otherwise in the performance of the Work called for by the aforesaid Contract and all modifications or extras or additions thereto, for the construction of said project or otherwise.
2. RELEASE and fully, finally, and forever discharge the Owner from any and all suits, actions, claims, and demands for payment for work performed or materials supplied by Subcontractor in accordance with the requirements of the above referenced Contract.
1. REPRESENT that all of their Employees, Subcontractors, Material Vendors, Equipment and Fixture Suppliers, and everyone else has been **paid in full** all sums due them, or any of them, in connection with performance of said Work, or anything done or omitted by them, or any of them in connection with the construction of said improvements, or otherwise.

DATED this                    day of                    , 20                    .

NAME OF SUBCONTRACTOR

BY (TYPED OR PRINTED NAME)

SIGNATURE

TITLE

ORIGINAL: FILE/Closeout Documents



STATE OF MISSOURI  
 OFFICE OF ADMINISTRATION  
 DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION  
**MBE/WBE/SDVE PROGRESS REPORT**  
 SUBMIT WITH **ALL** INVOICES: (PLEASE CHECK APPROPRIATE BOX BELOW)  
CONSULTANT      CONSTRUCTION

INVOICE NO.	PROJECT NUMBER
CHECK IF FINAL <input type="checkbox"/> <b>FINAL</b>	DATE

PROJECT TITLE
PROJECT LOCATION
FIRM
TOTAL CONTRACT AMOUNT \$

THE PERCENTAGE AND DOLLAR AMOUNT OF THIS PROJECT THAT ARE TO BE MBE/WBE/SDVE AS INDICATED IN THE ORIGINAL CONTRACT:      % and \$ .

<b>CHECK</b> MBE WBE SDVE	ITEM OF WORK	TOTAL AMOUNT OF SUBCONTRACT	\$ AMOUNT & % COMPLETE (PAID-TO-DATE)	CONSULTANT/SUBCONSULTANT OR CONTRACTOR/SUBCONTRACTOR/SUPPLIER NAME, ADDRESS, CONTACT, AND PHONE NUMBER
MBE <input type="checkbox"/> WBE <input type="checkbox"/> SDVE <input type="checkbox"/>		\$	\$  %	- -
MBE <input type="checkbox"/> WBE <input type="checkbox"/> SDVE <input type="checkbox"/>		\$	\$  %	- -
MBE <input type="checkbox"/> WBE <input type="checkbox"/> SDVE <input type="checkbox"/>		\$	\$  %	- -
MBE <input type="checkbox"/> WBE <input type="checkbox"/> SDVE <input type="checkbox"/>		\$	\$  %	- -
MBE <input type="checkbox"/> WBE <input type="checkbox"/> SDVE <input type="checkbox"/>		\$	\$  %	- -

ORIGINAL: Attach to ALL Progress and Final Payments



STATE OF MISSOURI  
 OFFICE OF ADMINISTRATION  
 DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION  
**AFFIDAVIT – COMPLIANCE WITH PREVAILING WAGE LAW**

PROJECT NUMBER

Before me, the undersigned Notary Public, in and for the County of \_\_\_\_\_

State of \_\_\_\_\_ personally came and appeared \_\_\_\_\_

(NAME)

of the \_\_\_\_\_

(POSITION)

(NAME OF THE COMPANY)

(a corporation) (a partnership) (a proprietorship) and after being duly sworn did depose and say that all provisions and requirements set out in Chapter 290, Sections 290.210 through and including 290.340, Missouri Revised Statutes, pertaining to the payment of wages to workmen employed on public works project have been fully satisfied and there has been no exception to the full and completed compliance with said provisions and requirements

and with Wage Determination No: \_\_\_\_\_ issued by the

Department of Labor and Industrial Relations, State of Missouri on the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_

in carrying out the contract and working in connection with \_\_\_\_\_

(NAME OF PROJECT)

Located at \_\_\_\_\_ in \_\_\_\_\_ County

(NAME OF THE INSTITUTION)

Missouri, and completed on the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_

SIGNATURE

**NOTARY INFORMATION**

NOTARY PUBLIC EMBOSSEY OR BLACK INK RUBBER STAMP SEAL

STATE

COUNTY (OR CITY OF ST. LOUIS)

SUBSCRIBED AND SWORN BEFORE ME, THIS

**USE RUBBER STAMP IN CLEAR AREA BELOW**

DAY OF

YEAR

NOTARY PUBLIC SIGNATURE

MY COMMISSION EXPIRES

NOTARY PUBLIC NAME (TYPED OR PRINTED)

FILE: Closeout Documents

# GENERAL CONDITIONS

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## SECTION 007213 - GENERAL CONDITIONS

- A. These General Conditions apply to each section of these specifications. The Contractor is subject to the provisions contained herein.
- B. The General Conditions are intended to define the relationship of the Owner, the Designer and the Contractor thereby establishing certain rules and provisions governing the operation and performance of the work so that the work may be performed in a safe, orderly, expeditious and workmanlike manner.

## ARTICLE 1 – GENERAL PROVISIONS

### ARTICLE 1.1 - DEFINITIONS

- A. As used in these contract documents, the following terms shall have the meanings and refer to the parties designated in these definitions.
  - 1. **"COMMISSIONER"**: The Commissioner of the Office of Administration.
  - 2. **"CONSTRUCTION DOCUMENTS"**: The "Construction Documents" shall consist of the Project Manual, Drawings and Addenda.
  - 3. **"CONSTRUCTION REPRESENTATIVE:"** Whenever the term "Construction Representative" is used, it shall mean the Owner's Representative at the work site.
  - 4. **"CONTRACTOR"**: Party or parties who have entered into a contract with the Owner to furnish work under these specifications and drawings.
  - 5. **"DESIGNER"**: When the term "Designer" is used herein, it shall refer to the Architect, Engineer, or Consultant of Record specified and defined in Paragraph 2.0 of the Supplemental Conditions, or his duly authorized representative. The Designer may be either a consultant or state employee.
  - 6. **"DIRECTOR"**: Whenever the term "Director" is used, it shall mean the Director of the Division of Facilities Management, Design and Construction or his Designee, representing the Office of Administration, State of Missouri. The Director is the agent of the Owner.
  - 7. **"DIVISION"**: Shall mean the Division of Facilities Management, Design and Construction, State of Missouri.

- 8. **"INCIDENTAL JOB BURDENS"**: Shall mean those expenses relating to the cost of work, incurred either in the home office or on the job-site, which are necessary in the course of doing business but are incidental to the job. Such costs include office supplies and equipment, postage, courier services, telephone expenses including long distance, water and ice and other similar expenses.
- 9. **"JOINT VENTURE"**: An association of two (2) or more businesses to carry out a single business enterprise for profit for which purpose they combine their property, capital, efforts, skills and knowledge.
- 10. **"OWNER"**: Whenever the term "Owner" is used, it shall mean the State of Missouri.
- 11. **"PROJECT"**: Wherever the term "Project" is used, it shall mean the work required to be completed by the construction contract.
- 12. **"PROJECT MANUAL"**: The "Project Manual" shall consist of Introductory Information, Invitation for Bid, Instructions to Bidders, Bid Documents, Additional Information, Standard Forms, General Conditions, Supplemental General Conditions, General Requirements and Technical Specifications.
- 13. **"SUBCONTRACTOR"**: Party or parties who contract under, or for the performance of part or this entire Contract between the Owner and Contractor. The subcontract may or may not be direct with the Contractor.
- 14. **"WORK"**: Labor, material, supplies, plant and equipment required to perform and complete the service agreed to by the Contractor in a safe, expeditious, orderly and workmanlike manner so that the project shall be complete and finished in the best manner known to each respective trade.
- 15. **"WORKING DAYS"**: are all calendar days except Saturdays, Sundays and the following holidays: New Year's Day, Martin Luther King, Jr. Day, Lincoln Day, Washington's Birthday (observed), Truman Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans Day (observed), Thanksgiving Day, Christmas Day.

### ARTICLE 1.2 DRAWINGS AND SPECIFICATIONS

- A. In case of discrepancy between drawings and specifications, specifications shall govern. Should discrepancies in architectural drawings, structural drawings and mechanical drawings occur, architectural drawings shall govern and, in case of

conflict between structural and mechanical drawings, structural drawings shall govern.

- B. Specifications are separated into titled divisions for convenience of reference only and to facilitate letting of contracts and subcontracts. The Contractor is responsible for establishing the scope of work for subcontractors, which may cross titled divisions. Neither the Owner nor Designer will establish limits and jurisdiction of subcontracts.
- C. Figured dimensions take precedence over scaled measurements and details over smaller scale general drawings. In the event of conflict between any of the documents contained within the contract, the documents shall take precedence and be controlling in the following sequence: addenda, supplementary general conditions, general conditions, division 1 specifications, technical division specifications, drawings, bid form and instructions to bidders.
- D. Anything shown on drawings and not mentioned in these specifications or vice versa, as well as any incidental work which is obviously necessary to complete the project within the limits established by the drawings and specifications, although not shown on or described therein, shall be performed by the Contractor at no additional cost as a part of his contract.
- E. Upon encountering conditions differing materially from those indicated in the contract documents, the Contractor shall promptly notify the Designer and Construction Representative in writing before such conditions are disturbed. The Designer shall promptly investigate said conditions and report to the Owner, with a recommended course of action. If conditions do materially differ and cause an increase or decrease in contract cost or time required for completion of any portion of the work, a contract change will be initiated as outlined in Article 4 of these General Conditions.
- E. Only work included in the contract documents is authorized, and the Contractor shall do no work other than that described therein or in accordance with appropriately authorized and approved contract changes.

### **ARTICLE 1.3 - COMPLIANCE WITH LAWS, PERMITS, REGULATIONS AND INSPECTIONS**

- A. Since the Owner is the State of Missouri, municipal or political subdivisions, zoning ordinances, construction codes (other than licensing of trades), and other like ordinances are not applicable to construction on Owner's property, and Contractor will not be required to submit drawings and specifications to any municipal or political subdivision, authority, obtain construction permits or any other licenses (other

than licensing of trades) or permits from or submit to inspections by any municipality or political subdivision relating to the construction for this project. All permits or licenses required by municipality or political subdivision for operation on property not belonging to Owner shall be obtained by and paid for by Contractor. Each Contractor shall comply with all applicable laws, ordinances, rules and regulations that pertain to the work of this contract.

- B. Contractors, subcontractors and their employees engaged in the businesses of electrical, mechanical, plumbing, carpentry, sprinkler system work, and other construction related trades shall be licensed to perform such work by the municipal or political subdivision where the project is located, if such licensure is required by local code. Local codes shall dictate the level (master, journeyman, and apprentice) and the number, type and ratio of licensed tradesmen required for this project within the jurisdiction of such municipal or political subdivision.
- C. Equipment and controls manufacturers and their authorized service and installation technicians that do not maintain an office within the jurisdiction of the municipal or political subdivision but are a listed or specified contractor or subcontractor on this project are exempt from Paragraph 1.3 B above.
- D. The Contractor shall post a copy of the wage determination issued for the project and included as a part of the contract documents, in a prominent and easily accessible location at the site of construction for the duration of the project.
- E. Any contractor or subcontractor to such contractor at any tier signing a contract to work on this project shall provide a ten-hour Occupational Safety and Health Administration (OSHA) construction safety program for their on-site employees which includes a course in construction safety and health approved by OSHA or a similar program approved by the Department of Labor and Industrial Relations which is at least as stringent as an approved OSHA program. The contractor shall forfeit as a penalty to the public body on whose behalf the contract is made or awarded, two thousand five hundred dollars plus one hundred dollars for each employee employed by the contractor or subcontractor, for each calendar day, or portion thereof, such employee is employed without the required training.

### **ARTICLE 1.4 - NONDISCRIMINATION IN EMPLOYMENT**

- A. The Contractor and his subcontractors will not discriminate against individuals based on race, color, religion, national origin, sex, disability, or

age, but may use restrictions which relate to bona fide occupational qualifications. Specifically, the Contractor and his subcontractors shall not discriminate:

1. Against recipients of service on the basis of race, color, religion, national origin, sex, disability or age.
2. Against any employee or applicant, for employment on the basis of race, color, religion, national origin, sex or otherwise qualified disability status.
3. Against any applicant for employment or employee on the basis of age, where such applicant or employee is between ages 40 and 70 and where such Contractor employs at least 20 persons.
4. Against any applicant for employment or employee on the basis of that person's status as a disabled or Vietnam-era veteran.

The Contractor and his Subcontractors will take affirmative action to insure applicants for employment and employees are treated equally without regard to race, color, religion, national origin, sex, disability, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion and transfer; recruitment or recruitment advertising; and selection for training, including apprenticeship. The Contractor and his Subcontractors will give written notice of their commitments under this clause to any labor union with which they have bargaining or other agreements.

- B. The Contractor and his Subcontractors shall develop, implement, maintain and submit in writing to the Owner an affirmative action program if at least fifty (50) persons in the aggregate are employed under this contract. If less than fifty (50) persons in the aggregate are to be employed under this contract, the Contractor shall submit, in lieu of the written affirmative action program, a properly executed Affidavit for Affirmative Action in the form included in the contract specifications. For the purpose of this section, an "affirmative action program" means positive action to influence all employment practices (including, but not limited to, recruiting, hiring, promoting and training) in providing equal employment opportunity regardless of race, color, sex, national origin, religion, age (where the person affected is between age 40 and 70), disabled and Vietnam-era veteran status, and disability. Such "affirmative action program" shall include:

1. A written policy statement committing the total organization to affirmative action and

assigning management responsibilities and procedures for evaluation and dissemination;

2. The identification of a person designated to handle affirmative action;
3. The establishment of non-discriminatory selection standards, objective measures to analyze recruitment, an upward mobility system, a wage and salary structure, and standards applicable to lay-off, recall, discharge, demotion and discipline;
4. The exclusion of discrimination from all collective bargaining agreements; and
5. Performance of an internal audit of the reporting system to monitor execution and to provide for future planning.

In the enforcement of this non-discrimination clause, the Owner may use any reasonable procedures available, including, but not limited to: requests, reports, site visits and inspection of relevant documents of contractors and subcontractors.

- C. In the event of the Contractor's or his subcontractor's noncompliance with any provisions of this Article of the Contract, the Owner may cancel this contract in whole or in part or require the Contractor to terminate his contract with the subcontractor.

#### **ARTICLE 1.5 - ANTI-KICKBACK**

- A. No employee of the division, shall have or acquire any pecuniary interest, whether direct or indirect, in this contract or in any part hereof. No officer, employee, designer, attorney, or administrator of or for the Owner who is authorized in such capacity and on behalf of the Owner to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the project, shall have or acquire any pecuniary interest, whether direct or indirect, in this contract, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the project.

#### **ARTICLE 1.6 - PATENTS AND ROYALTIES**

- A. The Contractor shall hold and save the Owner and its officers, agents, servants and employees harmless from liabilities of any nature or kind, including cost and expenses, for, or on account of, any patented or unpatented invention, process, article or appliance manufactured or used in the performance of this contract, including its use by the Owner, unless otherwise specifically stipulated in the contract documents.
- B. If the Contractor uses any design, device or materials covered by letters, patent or copyright,

the Contractor shall provide for such use by suitable agreement with the Owner of such patented or copyrighted design, device or material. It is mutually agreed and understood, without exception, that the contract prices shall include all royalties or costs arising from the use of such design, device or materials, in any way involved in the work. The Contractor and/or his sureties shall indemnify and save harmless the Owner of the project from any and all claims for infringement by reason of the use of such patented or copyrighted design, device or materials or any trademark or copyright in connection with work agreed to be performed under this contract and shall indemnify the Owner for any cost, expense or damage it may be obliged to pay by reason of such infringement at any time during the prosecution of the work or after completion of the work.

#### **ARTICLE 1.7 - PREFERENCE FOR AMERICAN AND MISSOURI PRODUCTS AND SERVICES**

- A. By virtue of statutory authority a preference will be given to Missouri labor and to products of mines, forests and quarries of the state of Missouri when they are found in marketable quantities in the state, and all such materials shall be of the best quality and suitable character that can be obtained at reasonable market prices, all as provided for in Section 8.280, Missouri Revised Statutes and Cumulative Supplements.
- B. Furthermore, pursuant to Section 34.076 Missouri Revised Statutes and Cumulative Supplements, a preference shall be given to those persons doing business as Missouri firms, corporations, or individuals, or which maintain Missouri offices or places of business, when the quality of performance promised is equal or better and the price quoted is the same or less. In addition, in order for a non-domiciliary bidder to be successful, his bid must be that same percentage lower than a domiciliary Missouri bidder's bid, as would be required for a Missouri bidder to successfully bid in the non-domiciliary state.
- C. In accordance with the Missouri Domestic Products Procurement Act Section 34.350 RSMo and Cumulative Supplements any manufactured goods or commodities used or supplied in the performance of this contract or any subcontract thereto shall be manufactured, assembled or produced in the United States, unless the specified products are not manufactured, assembled or produced in the United States in sufficient quantities to meet the agency's requirements or cannot be manufactured, assembled or produced in the United States within the necessary time in sufficient quantities to meet the contract requirements, or if obtaining the specified products manufactured, assembled or produced in the

United States would increase the cost of this contract for purchase of the product by more than ten percent.

#### **ARTICLE 1.8 - COMMUNICATIONS**

- A. All notices, requests, instructions, approvals and claims must be in writing and shall be delivered to the Designer and copied to the Construction Representative for the project except as required by Article 1.12 Disputes and Disagreements, or as otherwise specified by the Owner in writing as stated in Section 012600. Any such notice shall be deemed to have been given as of the time of actual receipt.
- B. The Contractor shall attend on-site progress and coordination meetings, as scheduled by the Construction Representative, no less than once a month.
- C. The Contractor shall ensure that major subcontractors and suppliers shall attend monthly progress meetings as necessary to coordinate the work, and as specifically requested by the Construction Representative.

#### **ARTICLE 1.9 - SEPARATE CONTRACTS AND COOPERATION**

- A. The Owner reserves the right to let other contracts in connection with this work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work and shall properly connect and coordinate his work with theirs.
- B. The Contractor shall consult the drawings for all other contractors in connection with this work. Any work conflicting with the above shall be brought to the attention of the Owner's Representative before the work is performed. If the Contractor fails to do this, and constructs any work which interferes with the work of another contractor, the Contractor shall remove any part so conflicting and rebuild same, as directed by the Owner's Representative at no additional cost to the Owner.
- C. Each contractor shall be required to coordinate his work with other contractors so as to afford others reasonable opportunity for execution of their work. No contractor shall delay any other contractor by neglecting to perform contract work at the proper time. If any contractor causes delay to another, they shall be liable directly to that contractor for such delay in addition to any liquidated damages which might be due the Owner.
- D. Should the Contractor or project associated subcontractors refuse to cooperate with the instructions and reasonable requests of other Contractors or other subcontractors in the overall

coordinating of the work, the Owner may take such appropriate action and issue directions, as required, to avoid unnecessary and unwarranted delays.

- E. Each Contractor shall be responsible for damage done to Owner's or other Contractor's property by him/her or workers in his employ through their fault or negligence.
- F. Should a Contractor sustain any damage through any act or omission of any other Contractor having a contract with the Owner, the Contractor so damaged shall have no claim or cause of action against the Owner for such damage, but shall have a claim or cause of action against the other Contractor to recover any and all damages sustained by reason of the acts or omissions of such Contractor. The phrase "acts or omissions" as used in this section shall be defined to include, but not be limited to, any unreasonable delay on the part of any such contractors.

#### **ARTICLE 1.10 - ASSIGNMENT OF CONTRACT**

- A. No assignment by Contractor of any amount or any part of this contract or of the funds to be received there under will be recognized unless such assignment has had the written approval of the Director and the surety has been given due notice of such assignment and has furnished written consent thereto. In addition to the usual recitals in assignment contracts, the following language must be set forth: "It is agreed that the funds to be paid to the assignee under this assignment are subject to performance by the Contractor of this contract and to claims or liens for services rendered or materials supplied for the performance of the work called for in said contract in favor of all persons, firms or corporations rendering such services or supplying such materials."

#### **ARTICLE 1.11 - INDEMNIFICATION**

- A. Contractor agrees to indemnify and save harmless Owner and its respective commissioners, officers, officials, agents, consultants and employees and Designer, their agents, servants and employees, from and against any and all liability for damage arising from injuries to persons or damage to property occasioned by any acts or omissions of Contractor, any subcontractors, agents, servants or employees, including any and all expense, legal or otherwise, which may be incurred by Owner or Designer, its agents, servants or employees, in defense of any claim, action or suit.
- B. The obligations of the Contractor under this paragraph shall not extend to the liability of the Designer, his agents or employees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, contract changes, design or specifications, or (2) giving of or the failure to

give directions or instructions by the Designer, his agents or employees as required by this contract documents provided such giving or failure to give is the primary cause of the injury or damage.

#### **ARTICLE 1.12 - DISPUTES AND DISAGREEMENTS**

- A. It is hereby expressly agreed and understood that in case any controversy or difference of opinion arises during construction, best efforts will be given to resolution at the field level. Should those efforts be unsuccessful, the Contractor has the right to appeal in writing, the decision of the Director's Designee to the Director at Room 730 Truman Building, P.O. Box 809, Jefferson City, Missouri 65102. The decision of the Director shall be final and binding on all parties.

#### **ARTICLE 2 -- OWNER/DESIGNER RESPONSIBILITIES**

- A. The Owner shall give all orders and directions contemplated under this contract relative to the execution of the work. During progress of work the Owner will be represented at the project site by the Construction Representative and/or Designer, whose responsibilities are to see that this contract is properly fulfilled.
- B. The Owner shall at all times have access to the work whenever it is in preparation or progress. The Contractors shall provide proper facilities for such access and for inspection and supervision.
- C. All materials and workmanship used in the work shall be subject to the inspection of the Designer and Construction Representative, and any work which is deemed defective shall be removed, rebuilt or made good immediately upon notice. The cost of such correction shall be borne by the Contractor. Contractor shall not be entitled to an extension of the contract completion date in order to remedy defective work. All rejected materials shall be immediately removed from the site of the work.
- D. If the Contractor fails to proceed at once with the correction of rejected defective materials or workmanship, the Owner may, by separate contract or otherwise, have the defects remedied or rejected. Materials removed from the site and charge the cost of the same against any monies which may be due the Contractor, without prejudice to any other rights or remedies of the Owner.
- E. Failure or neglect on the part of Owner to observe faulty work, or work done which is not in accordance with the drawings and specifications shall not relieve the Contractor from responsibility

for correcting such work without additional compensation.

- F. The Owner shall have the right to direct the Contractor to uncover any completed work.
  - 1. If the Contractor fails to adequately notify the Construction Representative and/or Designer of an inspection as required by the Contract Documents, the Contractor shall, upon written request, uncover the work. The Contractor shall bear all costs associated with uncovering and again covering the work exposed.
  - 2. If the Contractor is directed to uncover work, which was not otherwise required by the Contract Documents to be inspected, and the work is found to be defective in any respect, no compensation shall be allowed for this work. If, however, such work is found to meet the requirements of this contract, the actual cost of labor and material necessarily involved in the examination and replacement plus 10% shall be allowed the Contractor.
- G. The Designer shall give all orders and directions contemplated under this contract relative to the scope of the work and shall give the initial interpretation of the contract documents.
- H. The Owner may file a written notice to the Contractor to dismiss immediately any subcontractors, project managers, superintendents, foremen, workers, watchmen or other employees whom the Owner may deem incompetent, careless or a hindrance to proper or timely execution of the work. The Contractor shall comply with such notice as promptly as practicable without detriment to the work or its progress.
- I. If in the Owner's judgment it becomes necessary at any time to accelerate work, when ordered by the Owner in writing, the Contractor shall redirect resources to such work items and execute such portions of the work as may be required to complete the work within the current approved contract schedule.

### **ARTICLE 3 -- CONTRACTOR RESPONSIBILITIES**

#### **ARTICLE 3.1 -- ACCEPTABLE SUBSTITUTIONS**

- A. The Contractor may request use of any article, device, product, material, fixture, form or type of construction which in the judgment of the Owner and Designer is equal in all respects to that named. Standard products of manufacturers other than those specified will be accepted when, prior to the ordering or use thereof, it is proven to the satisfaction of the Owner and Designer that they are equal in design, strength, durability, usefulness and convenience for the purpose intended.

- B. Any changes required in the details and dimensions indicated on the drawings for the substitution of products other than those specified shall be properly made at the expense of the Contractor requesting the substitution or change.
- C. The Contractor shall submit a request for such substitutions in writing to the Owner and Designer within twenty (20) working days after the date of the "Notice to Proceed." Thereafter no consideration will be given to alternate forms of accomplishing the work. This Article does not preclude the Owner from exercising the provisions of Article 4 hereof.
- D. Any request for substitution by the Contractor shall be submitted in accordance with SECTION 002113 - INSTRUCTIONS TO BIDDERS.
- E. When a material has been approved, no change in brand or make will be permitted unless:
  - 1. Written verification is received from the manufacturer stating they cannot make delivery on the date previously agreed, or
  - 2. Material delivered fails to comply with contract requirements.

#### **ARTICLE 3.2 -- SUBMITTALS**

- A. The Contractor's submittals must be submitted with such promptness as to allow for review and approval so as not to cause delay in the work. The Contractor shall coordinate preparation and processing of submittals with performance of construction activities.

Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

Submit four (4) copies to the Designer and additional copies as required for the subcontractors and material suppliers. Also provide copies to meet the requirements for maintenance manuals.
- B. All subcontractors' shop drawings and schedules shall be submitted by the Contractor and shall bear evidence that Contractor has received, reviewed, and approved them. Any shop drawings and schedules submitted without this evidence will be returned to the Contractor for resubmission.
- C. The Contractor shall include with the shop drawing, a letter indicating any and all deviations from the drawings and/or specifications. Failure to notify the Designer of such deviations will be grounds for subsequent rejection of the related work or materials. If, in the opinion of the Designer, the deviations are not acceptable, the Contractor will be required to furnish the item as specified and indicated on the drawings.

- D. The Designer shall check shop drawings and schedules with reasonable promptness and approve them only if they conform to the design concept of the project and comply with the information given in the contract documents. The approval shall not relieve the Contractor from the responsibility to comply with the drawings and specifications, unless the Contractor has called the Designer's attention to the deviation, in writing, at the time of submission and the Designer has knowingly approved thereof. An approval of any such modification will be given only under the following conditions:
1. It is in the best interest of the Owner
  2. It does not increase the contract sum and/or completion time
  3. It does not deviate from the design intent
  4. It is without prejudice to any and all rights under the surety bond.
- E. No extension of time will be granted because of the Contractor's failure to submit shop drawings and schedules in ample time to allow for review, possible resubmission, and approval. Fabrication of work shall not commence until the Contractor has received approval. The Contractor shall furnish prints of approved shop drawings and schedules to all subcontractors whose work is in any way related to the work under this contract. Only prints bearing this approval will be allowed on the site of construction
- F. The Contractor shall maintain a complete file on-site of approved shop drawings available for use by the Construction Representative.

**ARTICLE 3.3 – AS-BUILT DRAWINGS**

- A. The Contractor shall update a complete set of the construction drawings, shop drawings and schedules of all work monthly by marking changes, and at the completion of their work (prior to submission of request for final payment) note all changes and turn the set over to the Construction Representative. The updates shall show all addenda, all field changes that were made to adapt to field conditions, changes resulting from contract changes or supplemental instructions, and all locations of structures, buried installations of piping, conduit, and utility services. All buried and concealed items both inside and outside shall be accurately located as to depth and referenced to permanent features such as interior or exterior wall faces and dimensions shall be given in a neat and legible manner in a contrasting colored pencil or ink. If approved by the Designer, an electronic file format may be provided.

**ARTICLE 3.4 – GUARANTY AND WARRANTIES**

A. General Guaranty

1. Neither the final certificate of payment nor any provision in the contract documents nor partial use or occupancy of the premises by the Owner shall constitute an acceptance of work not done in accordance with contract requirements.
2. The Contractor or surety shall remedy any defects in the work and pay for any damage to property resulting there from which shall appear within a period of one (1) year from the date of substantial completion unless a longer period is otherwise specified or a differing guaranty period has been established in the substantial completion certificate. The Owner will give notice of observed defects with reasonable promptness.
3. In case of default on the part of the Contractor in fulfilling this part of this contract, the Owner may correct the work or repair the damage and the cost and expense incurred in such event shall be paid by or recoverable from the Contractor or surety.
4. The work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's guaranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear under normal usage. If required by the Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment

B. Extended Warranty

Manufacturer's certificates of warranty shall be obtained for all major equipment. Warranty shall be obtained for at least one year. Where a longer period is offered at no additional cost or called for in the specific equipment specifications, the longer period shall govern.

**ARTICLE 3.5 -- OPERATION AND MAINTENANCE MANUALS**

- A. Immediately after equipment submittals are approved and no later than ten (10) working days prior to the substantial completion inspection, the Contractor shall provide to the Designer three (3)

copies of operating instructions and service manuals, containing the following:

1. Start-up and Shut-down Procedures: Provide a step-by-step write up of all major equipment. When manufacturer's printed start-up, trouble shooting and shut-down procedures are available; they may be incorporated into the operating manual for reference.
  2. Operating Instructions: Written operating instructions shall be included for the efficient and safe operation of all equipment.
  3. Equipment List: List of all major equipment as installed shall be prepared to include model number, capacities, flow rate, name plate data, shop drawings and air and water balance reports.
  4. Service Instructions: Provide the following information for all pieces of equipment.
    - a. Recommended spare parts including catalog number and name of local supplier or factory representative.
    - b. Belt sizes, types, and lengths.
    - c. Wiring diagrams.
  5. Manufacturer's Certificate of Warranty as described in Article 3.4.
  6. Prior to the final payment, furnish to the Designer three (4) copies of parts catalogs for each piece of equipment furnished by him/her on the project with the components identified by number for replacement ordering.
- B. Submission of operating instructions shall be done in the following manner.
1. Manuals shall be in quadruplicate, and all materials shall be bound into volumes of standard 8½" x 11" hard binders. Large drawings too bulky to be folded into 8½" x 11" shall be separately bound or folded and in envelopes, cross referenced and indexed with the manuals.
  2. The manuals shall identify project name, project number, and include the name and address of the Contractor, subcontractors and manufacturers who were involved with the activity described in that particular manual.
  3. Internally subdivide the binder contents with permanent page dividers, logically organized with tab titles clearly printed under reinforced laminated plastic tabs.
  4. Contents: Prepare a Table of Contents for each volume, with each product or system description identified.

### **ARTICLE 3.6 – OTHER CONTRACTOR RESPONSIBILITIES**

- A. The Contractor shall keep on site, during progress of the work, a competent superintendent satisfactory to the Construction Representative. The superintendent shall represent the Contractor and all agreements made by the superintendent shall be binding. The superintendent shall carefully study and compare all drawings, specifications and other instructions and shall promptly notify the Construction Representative and Designer, in writing, any error, inconsistency or omission which may be discovered. The superintendent shall coordinate all work on the project. Any change of the superintendent shall be approved by the Construction Representative.
- B. Contractor shall, at all times, enforce strict discipline and good order among his employees, and shall not employ on the work any unfit person or anyone not skilled in the work assigned to him/her.
- C. The Contractor shall supply sufficient labor, material, plant and equipment and pay when due any laborer, subcontractor or supplier for supplies furnished and otherwise prosecute the work with diligence to prevent work stoppage and insure completion thereof within the time specified.
- D. The Contractor and each of his subcontractors shall submit to the Construction Representative, through the Designer such schedules of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as the Owner may request concerning work performed or to be performed under this contract.
- E. The Contractor, subcontractors, and material suppliers shall upon written request, give the Owner access to all time cards, material invoices, payrolls, estimates, profit and loss statements, and all other direct or indirect costs related to this work.
- F. The Contractor shall be responsible for laying out all contract work such as layout of architectural, structural, mechanical and electrical work, which shall be coordinated with layouts of subcontractors for general construction work. The Contractor is also responsible for unloading, uncrating and handling of all materials and equipment to be erected or placed by him/her, whether furnished by Contractor or others. No extra charges or compensation will be allowed as a result of failure to verify dimensions before ordering materials or fabricating items.
- G. The Contractor must notify the Construction Representative at least one working day before

placing concrete or burying underground utilities, pipelines, etc.

- H. Contractors shall prearrange time with the Construction Representative for the interruption of any facility operation. Unless otherwise specified in these documents, all connections, alterations or relocations as well as all other portions of the work will be performed during normal working hours.
- I. The Contractor shall coordinate all work so there will not be prolonged interruptions of existing equipment operation. Any existing plumbing, heating, ventilating, air conditioning or electrical disconnections necessary for the project, which affect portions of this construction or building or any other building must be scheduled with the Construction Representative to minimize or avoid any disruption of facility operations. In no case, unless previously approved in writing by the Construction Representative, shall utilities be left disconnected at the end of a work day or over a weekend. Any interruption of utilities either intentionally or accidentally shall not relieve the Contractor responsible for the interruption from the responsibility to repair and restore the utility to normal service. Repairs and restoration shall be made before the workers responsible for the repair and restoration leave the job.
- J. Contractors shall limit operations and storage of materials to the area within the project, except as necessary to connect to existing utilities, and shall not encroach on neighboring property. The Contractor shall be responsible for repair of their damage to property on or off the project site occurring during construction of project. All such repairs shall be made to the satisfaction of the property owner.
- K. Unless otherwise permitted, all materials shall be new and both workmanship and materials shall be of the best quality.
- L. Unless otherwise provided and stipulated within these specifications, the Contractor shall furnish, construct, and/or install and pay for materials, devices, mechanisms, equipment, all necessary personnel, utilities including, but not limited to water, heat, light and electric power, transportation services, applicable taxes of every nature, and all other facilities necessary for the proper execution and completion of the work.
- M. Contractor shall carefully examine the plans and drawings and shall be responsible for the proper fitting of his material, equipment and apparatus into the building.
- N. The Contractor or subcontractors shall not overload, or permit others to overload, any part of

any structure during the performance of this contract.

- O. All temporary shoring, bracing, etc., required for the removal of existing work and/or for the installation of new work shall be included in this contract. The Contractor shall make good, at no cost to the Owner, any damage caused by improper support or failure of shoring in any respect. Each Contractor shall be responsible for shoring required to protect his work or adjacent property and improvements of Owner and shall be responsible for shoring or for giving written notice to adjacent property owners. Shoring shall be removed only after completion of permanent supports.
- P. The Contractor shall provide at the proper time such material as is required for support of the work. If openings are required, whether shown on drawings or not, the Contractor shall see that they are properly constructed.
- Q. During the performance of work the Contractor shall be responsible for providing and maintaining warning signs, lights, signal devices, barricades, guard rails, fences and other devices appropriately located on site which will give proper and understandable warning to all persons of danger of entry onto land, structure or equipment.
- R. The Contractor shall be responsible for protection, including weather protection, and proper maintenance of all equipment and materials.
- S. The Contractor shall be responsible for care of the finished work and shall protect same from damage or defacement until substantial completion by the Owner. If the work is damaged by any cause, the Contractor shall immediately begin to make repairs in accordance with the drawings and specifications. Contractor shall be liable for all damage or loss unless attributable to the acts or omissions of the Owner or Designer. Any claim for reimbursement shall be submitted in accordance with Article 4. After substantial completion the Contractor will only be responsible for damage resulting from acts or omissions of the Contractor or subcontractors through final warranty.
- T. In the event the Contractor encounters an unforeseen hazardous material, the Contractor shall immediately stop work in the area affected and report the condition to the Owner and Designer in writing. The Contractor shall not be required, pursuant to Article 4, to perform, any work relating to hazardous materials.
- U. In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation

or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 4.

- V. Before commencing work, Contractors shall confer with the Construction Representative and facility representative and review any facility rules and regulations which may affect the conduct of the work.
- W. Project signs will only be erected on major projects and only as described in the specifications. If no sign is specified, none shall be erected.

### **ARTICLE 3.7 -- SUBCONTRACTS**

- A. Subcontractor assignments as identified in the bid form shall not be changed without written approval of the Owner. The Owner will not approve changes of a listed subcontractor unless the Contractor documents, to the satisfaction of the Owner that the subcontractor cannot or will not perform the work as specified.
- B. The Contractor is fully responsible to the Owner for the acts and omissions of all subcontractors and of persons either directly or indirectly employed by them.
- C. Every subcontractor shall be bound by the applicable terms and provisions of these contract documents, but no contractual relationship shall exist between any subcontractor and the Owner unless the right of the Contractor to proceed with the work is suspended or this contract is terminated as herein provided, and the Owner in writing elects to assume the subcontract.
- D. The Contractor shall upon receipt of "Notice to Proceed" and prior to submission of the first payment request, notify the Designer and Construction Representative in writing of the names of any subcontractors to be used in addition to those identified in the bid form and all major material suppliers proposed for all parts of the work.

### **ARTICLE 4 -- CHANGES IN THE WORK**

#### **4.1 CHANGES IN THE WORK**

- A. The Construction Representative, without giving notice to the surety and without invalidating this contract, may order extra work or make changes by altering, adding to or deducting from the work, this contract sum being adjusted accordingly. All such work shall be executed under the conditions of the original contract. A claim for extension of time caused by any change must be adjusted at the time of ordering such change. No future request for time will be considered.
- B. Each Contract Change shall include all costs required to perform the work including all labor,

material, equipment, overheads and profit, delay, disruptions, or other miscellaneous expenses. No subsequent requests for additional compensation including claims for delay, disruption, or reduced efficiency as a result of each change will be considered. Values from the Schedule of Values will not be binding as a basis for additions to or deductions from the contract price.

- C. The amount of any adjustment in this contract price for authorized changes shall be agreed upon before such changes become effective and shall be determined, through submission of a request for proposal, as follows:

1. By an acceptable fixed price proposal from the Contractor. Breakdowns shall include all takeoff sheets of each Contractor and subcontractor. Breakdown shall include a listing of each item of material with unit prices and number of hours of labor for each task. Labor costs per hour shall be included with labor burden identified, which shall be not less than the prevailing wage rate, etc. Overhead and profit shall be shown separately for each subcontractor and the Contractor.
2. By a cost-plus-fixed-fee (time and material) basis with maximum price, total cost not to exceed said maximum. Breakdown shall include a listing of each item of material with unit prices and number of hours of labor for each task. Labor costs per hour shall be included with labor burden identified, which shall be not less than the prevailing wage rate, etc. Overhead and profit shall be shown separately for each subcontractor and the Contractor.
3. By unit prices contained in Contractor's original bid form and incorporated in the construction contract.

- D. Overhead and Profit on Contract Changes shall be applied as follows:

1. The overhead and profit charge by the Contractor and all subcontractors shall be considered to include, but is not limited to: incidental job burdens, small truck (under 1 ton) expense, mileage, small hand tools, warranty costs, company benefits and general office overhead. Project supervision including field supervision and job site office expense shall be considered a part of overhead and profit unless a compensable time extension is granted.
2. The percentages for overhead and profit charged on Contract Changes shall be negotiated, and may vary according to the nature, extent, and complexity of the work

involved. However, the overhead and profit for the Contractor or subcontractor actually performing the work shall not exceed 14%. When one or more tiers of subcontractors are used, in no event shall any Contractor or subcontractor receive as overhead and profit more than 3% of the cost of the work performed by any of his subcontractors. In no case shall the total overhead and profit paid by the Owner on any Contract Changes exceed twenty percent (20%) of the cost of materials, labor and equipment (exclusive of Contractor or any Subcontractor overhead and profit) necessary to put the contract change work in place.

3. The Contractor will be allowed to add the cost of bonding and insurance to their cost of work. This bonding and insurance cost shall not exceed 2% and shall be allowed on the total cost of the added work, including overhead and profit.
  4. On proposals covering both increases and decreases in the amount of this contract, the application of overhead and profit shall be on the net change in the cost of the work.
  5. The percentage for overhead and profit to be credited to the Owner on Contract Changes that are solely decreases in the quantity of work or materials shall be negotiated, and may vary according to the nature, extent and complexity of the work involved, but in no case shall be less than ten percent (10%). If the percentage for overhead and profit charged for work added by Contract Changes for this contract has been negotiated to less than 10%, the negotiated rate shall then apply to credits as well.
- E. No claim for an addition to this contract sum shall be valid unless authorized as aforesaid in writing by the Owner. In the event that none of the foregoing methods are agreed upon, the Owner may order the Contractor to perform work on a time and material basis. The cost of such work shall be determined by the Contractor's actual labor and material cost to perform the work plus overhead and profit as outlined herein. The Designer and Construction Representative shall approve the Contractor's daily time and material invoices for the work involved.
- F. If the Contractor claims that any instructions involve extra cost under this contract, the Contractor shall give the Owner's Representative written notice thereof within a reasonable time after the receipt of such instructions, and in any event before proceeding to execute the work. No

such claim shall be valid unless so made and authorized by the Owner, in writing.

- G. In an emergency affecting the safety of life or of the structure or of adjoining property, the Contractor, without special instruction or authorization from the Construction Representative, is hereby permitted to act at their discretion to prevent such threatened loss or injury. The Contractor shall submit a claim for compensation for such emergency work in writing to the Owner's Representative.

#### **ARTICLE 4.2 – CHANGES IN COMPLETION TIME**

- A. Extension of the number of work days stipulated in the Contract for completion of the work with compensation may be made when:
1. The contractor documents that proposed Changes in the work, as provided in Article 4.1, extends construction activities critical to contract completion date, OR
  2. The Owner suspends all work for convenience of the Owner as provided in Article 7.3, OR
  3. An Owner caused delay extends construction activities critical to contract completion (except as provided elsewhere in these General Conditions). The Contractor is to review the work activities yet to begin and evaluate the possibility of rescheduling the work to minimize the overall project delay.
- B. Extension of the number of work days stipulated in the Contract for completion of the work without compensation may be made when:
1. Weather-related delays occur, subject to provisions for the inclusion of a specified number of "bad weather" days when provided for in Section 012100-Allowances, OR
  2. Labor strikes or acts of God occur, OR
  3. The work of the Contractor is delayed on account of conditions which were beyond the control of the Contractor, subcontractors or suppliers, and were not the result of their fault or negligence.
- C. No time extension or compensation will be provided for delays caused by or within the control of the Contractor, subcontractors or suppliers and for concurrent delays caused by the Owner.
- D. The Contractor shall notify the Owner promptly of any occurrence or conditions which in the Contractor's opinion results in a need for an extension of time. The notice shall be in writing and shall include all necessary supporting materials with details of any resultant costs and be submitted in time to permit full investigation and

evaluation of the Contractor's claim. The Owner shall promptly acknowledge the Contractor's notice and, after recommendation from the Owner's Representative and/or Designer, shall provide a decision to the Contractor. Failure on the part of the Contractor to provide such notice and to detail the costs shall constitute a waiver by the Contractor of any claim. Requests for extensions of time shall be for working days only.

## **ARTICLE 5 - CONSTRUCTION AND COMPLETION**

### **ARTICLE 5.1 – CONSTRUCTION COMMENCEMENT**

- A. Upon receipt of the "Intent to Award" letter, the Contractor must submit the following properly executed instruments to the Owner:
  1. Contract;
  2. Performance/payment bond as described in Article 6.1;
  3. Certificates of Insurance, or the actual policies themselves, showing that the Contractor has obtained the insurance coverage required by Article 6.2.
  4. Written Affirmative Action Plans as required in Article 1.4.

Above referenced items must be received by the Owner within ten (10) working days after the effective date of the contract. If not received, the Owner may treat the failure to timely submit them as a refusal by the Contractor to accept a contract for this work and may retain as liquidated damages the Contractor's bid bond, cashier's check or certified check as provided in the Instructions to Bidders. Upon receipt the Owner will issue a "Notice to Proceed" with the work to the Contractor.

- B. Within the time frame noted in Section 013200 - Schedules, following receipt of the "Notice to Proceed", the Contractor shall submit to the Owner a progress schedule and schedule of values, showing activities through the end of the contract period. Should the Contractor not receive written notification from the Owner of the disapproval of the schedule of values within fifteen (15) working days, the Contractor may consider it approved for purpose of determining when the first monthly Application and Certification for Payment may be submitted.
- C. The Contractor may commence work upon receipt of the Division of Facilities Management, Design and Construction's "Notice to Proceed" letter. Contractor shall prosecute the work with faithfulness and energy, and shall complete the

entire work on or before the completion time stated in the contract documents or pay to the Owner the damages resulting from the failure to timely complete the work as set out within Article 5.4.

### **ARTICLE 5.2 -- PROJECT CONSTRUCTION**

- A. Each Contractor shall submit for the Owner's approval, in reproducible form, a progress schedule showing the rate of progress and the order of the work proposed to carry on various phases of the project. The schedule shall be in conformance with the requirements outlined in Section 013200 – Schedules.
- B. Contractor shall employ and supply a sufficient force of workers, material, and equipment and shall pay when due, any worker, subcontractor or supplier and otherwise prosecute the work with such diligence so as to maintain the rate of progress indicated on the progress schedule, prevent work stoppage, and insure completion of the project within the time specified.

### **ARTICLE 5.3 -- PROJECT COMPLETION**

- A. Substantial Completion. A Project is substantially complete when construction is essentially complete and work items remaining to be completed can be done without interfering with the Owner's ability to use the Project for its intended purpose.
  1. Once the Contractor has reached what they believe is Substantial Completion, the Contractor shall notify the Designer and the Construction Representative of the following:
    - a. That work is essentially complete with the exception of certain listed work items. The list shall be referred to as the "Contractor's Punch."
    - b. That all Operation and Maintenance Manuals have been assembled and submitted in accordance with Article 3.5A.
    - c. That the Work is ready for inspection by the Designer and Construction Representative. The Owner shall be entitled to a minimum of ten working days notice before the inspection shall be performed.
  2. If the work is acceptable, the Owner shall issue a Certificate of Substantial Completion, which shall set forth the responsibilities of the Owner and the Contractor for utilities, security, maintenance, damage to the work and risk of loss. The Certificate shall also identify those remaining items of work to be

performed by the Contractor. All such work items shall be complete within 30 working days of the date of the Certificate, unless the Certificate specifies a different time. If the Contractor shall be required to perform tests that must be delayed due to climatic conditions, it is understood that such tests and affected equipment will be identified on the Certificate and shall be accomplished by the Contractor at the earliest possible date.

Performance of the tests may not be required before Substantial Completion can be issued. The date of the issuance of the Certificate of Substantial Completion shall determine whether or not the work was completed within the contract time and whether or not Liquidated Damages are due.

3. If the work is not acceptable, and the Owner does not issue a Certificate of Substantial Completion, the Owner shall be entitled to charge the Contractor with the Designer's and Owner's costs of re-inspection, including time and travel.
- B. Partial Occupancy. Contractor agrees that the Owner shall be permitted to occupy and use any completed or partially completed portions of the Project, when such occupancy and use is in the Owner's best interest. Owner shall notify Contractor of its desire and intention to take Partial Occupancy as soon as possible but at least ten (10) working days before the Owner intends to occupy. If the Contractor believes that the portion of the work the Owner intends to occupy is not ready for occupancy, the Contractor shall notify the Owner immediately. The Designer shall inspect the work in accordance with the procedures above. If the Contractor claims increased cost of the project or delay in completion as a result of the occupancy, he shall notify the Owner immediately but in all cases before occupancy occurs.
- C. Final Completion. The Project is finally complete when the Certificate of Substantial Completion has been issued and all work items identified therein as incomplete have been completed, and when all administrative items required by the contract have been completed. Final Completion entitles the Contractor to payment of the outstanding balance of the contract amount including all change orders and retainage. Within five (5) working days of the date of the Certificate of Substantial Completion, the Contractor shall identify the cost to complete any outstanding items of work. The Designer shall review the Contractor's estimate and either approve it or provide an independent estimate for all such items. If the Contractor fails to complete the remaining items within the time specified in the Certificate, the Owner may terminate the

contract and go to the surety for project completion in accordance with Article 7.2 or release the contract balance to the Contractor less 150% of the approved estimate to complete the outstanding items. Upon completion of the outstanding items, when a final cost has been established, any monies remaining shall be paid to the Contractor. Failure to complete items of work does not relieve the Contractor from the obligation to complete the administrative requirements of the contract, such as the provisions of Article 5.3 FAILURE TO COMPLETE ALL ITEMS OF WORK UNDER THE CONTRACT SHALL BE CONSIDERED A DEFAULT AND BE GROUNDS FOR CONTRACT TERMINATION AND DEBARMENT.

- D. Liquidated Damages. Contractor agrees that the Owner may deduct from the contract price and retain as liquidated damages, and not as penalty or forfeiture, the sum stipulated in this contract for each work day after the Contract Completion Day on which work is not Substantially Complete. Assessment of Liquidated Damages shall not relieve the Contractor or the surety of any responsibility or obligation under the Contract. In addition, the Owner may, without prejudice to any other rights, claims, or remedies the Owner may have including the right to Liquidated Damages, charge the Contractor for all additional expenses incurred by the Owner and/or Designer as the result of the extended contract period through Final Completion. Additional Expenses shall include but not be limited to the costs of additional inspections.
- E. Early Completion. The Contractor has the right to finish the work before the contract completion date; however, the Owner assumes no liability for any hindrances to the Contractor unless Owner caused delays result in a time extension to the contract completion date. The Contractor shall not be entitled to any claims for lost efficiencies or for delay if a Certificate of Substantial Completion is given on or before the Contract Completion Date.

#### **ARTICLE 5.4 -- PAYMENT TO CONTRACTOR**

- A. Payments on account of this contract will be made monthly in proportion to the work which has been completed. Request for payment must be submitted on the Owner's forms. No other pay request will be processed. Supporting breakdowns must be in the same format as Owner's forms and must provide the same level of detail. The Designer will, within 5 working days from receipt of the contractor's request for payment either issue a Certificate for Payment to the Owner, for such amount as the Designer determines is properly due, or notify the Contractor in writing of reasons for withholding a Certificate. The Owner shall make

payment within 30 calendar days after the "Application and Certification for Payment" has been received and certified by the Designer. The following items are to be attached to the contractor's pay request:

1. Updated construction schedule
  2. Certified payrolls consisting of name, occupation and craft, number of hours worked and actual wages paid for each individual employee, of the Contractor and all subcontractors working on the project
- B. The Owner shall retain 5 percent of the amount of each such payment application, except as allowed by Article 5.4, until final completion and acceptance of all work covered by this contract.
- C. Each payment made to Contractor shall be on account of the total amount payable to Contractor and all material and work covered by paid partial payment shall thereupon become the sole property of Owner. This provision shall not be construed as relieving Contractor from sole responsibility for care and protection of materials and work upon which payments have been made or restoration of any damaged work or as a waiver of the right of Owner to require fulfillment of all terms of this contract.
- D. Materials delivered to the work site and not incorporated in the work will be allowed in the Application and Certification for Payment on the basis of one hundred (100%) percent of value, subject to the 5% retainage providing that they are suitably stored on the site or in an approved warehouse in accordance with the following requirements:
1. Material has previously been approved through submittal and acceptance of shop drawings conforming to requirements of Article 3.2 of General Conditions.
  2. Delivery is made in accordance with the time frame on the approved schedule.
  3. Materials, equipment, etc., are properly stored and protected from damage and deterioration and remain so - if not, previously approved amounts will be deleted from subsequent pay applications.
  4. The payment request is accompanied by a breakdown identifying the material equipment, etc. in sufficient detail to establish quantity and value.
- E. The Contractor shall be allowed to include in the Application and Certification for Payment, one hundred (100%) of the value, subject to retainage, of major equipment and material stored off the site if all of the following conditions are met:

1. The request for consideration of payment for materials stored off site is made at least 15 working days prior to submittal of the Application for Payment including such material. Only materials inspected will be considered for inclusion on Application for Payment requests.
  2. Materials stored in one location off site are valued in excess of \$25,000.
  3. That a Certificate of Insurance is provided indicating adequate protection from loss, theft conversion or damage for materials stored off site. This Certificate shall show the State of Missouri as an additional insured for this loss.
  4. The materials are stored in a facility approved and inspected, by the Construction Representative.
  5. Contractor shall be responsible for, Owner costs to inspect out of state facilities, and any delays in the completion of the work caused by damage to the material or for any other failure of the Contractor to have access to this material for the execution of the work.
- F. The Owner shall determine the amount, quality and acceptability of the work and materials which are to be paid for under this contract. In the event any questions shall arise between the parties, relative to this contract or specifications, determination or decision of the Owner or the Construction Representative and the Designer shall be a condition precedent to the right of the Contractor to receive any money or payment for work under this contract affected in any manner or to any extent by such question.
- G. Payments Withheld: The Owner may withhold or nullify in whole or part any certificate to such extent as may be necessary to protect the Owner from loss on account of:
1. Defective work not remedied. When a notice of noncompliance is issued on an item or items, corrective action shall be undertaken immediately. Until corrective action is completed, no monies will be paid and no additional time will be allowed for the item or items. The cost of corrective action(s) shall be borne by the Contractor.
  2. A reasonable doubt that this contract can be completed for the unpaid balance.
  3. Failure of the Contractor to update as-built drawings monthly for review by the Construction Representative.
  4. Failure of the Contractor to update the construction schedule.

When the Construction Representative is satisfied the Contractor has remedied above deficiencies, payment shall be released.

- H. Final Payment: Upon receipt of written notice from the Contractor to the Designer and Project Representative that the work is ready for final inspection and acceptance, the Designer and Project Representative, with the Contractor, shall promptly make such inspection. If the work is acceptable and the contract fully performed, the Construction Representative shall complete a final acceptance report and the Contractor will be directed to submit a final Application and Certification for Payment. If the Owner approves the same, the entire balance shall be due and payable, with the exception of deductions as provided for under Article 5.4.
1. Where the specifications provide for the performance by the Contractor of (certain tests for the purpose of balancing and checking the air conditioning and heating equipment and the Contractor shall have furnished and installed all such equipment in accordance with the specifications, but said test cannot then be made because of climatic conditions, such test shall may be considered as required under the provisions of the specifications, Section 013300 and this contract may be substantial Full payment will not be made until the tests have been made and the equipment and system is finally accepted. If the tests are not completed when scheduled, the Owner may deduct 150% of the value of the tests from the final payment.
  2. The final payment shall not become due until the Contractor delivers to the Construction Representative:
    - a) A complete file of releases, on the standard form included in the contract documents as "Final Receipt of Payment and Release Form", from subcontractors and material suppliers evidencing payment in full for services, equipment and materials, as the case may require, if the Owner approves, or a consent from the Surety to final payment accepting liability for any unpaid amounts.
    - b) An Affidavit of Compliance with Prevailing Wage Law, in the form as included in this contract specifications, properly executed by each subcontractor, and the Contractor
    - c) Certified copies of all payrolls
    - d) As-built drawings

3. If any claim remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all monies that the latter may be compelled to pay in discharging such a claim including all costs and a reasonable attorney's fee.
4. Missouri statute requires prompt payment from the Owner to the Contractor within thirty calendar days and from the Contractor to his subcontractors within fifteen calendar days. Failure to make payments within the required time frame entitles the receiving party to charge interest at the rate of one and one half percent per month calculated from the expiration of the statutory time period until paid.
5. The value of all unused unit price allowances and/or 150% of the value of the outstanding work items, and/or liquidated damages may be deducted from the final pay request without executing a Contract Change. Any unit price items which exceed the number of units in the contract may be added by Contract Change.

## **ARTICLE 6 -- INSURANCE AND BONDS**

### **ARTICLE 6.1 -- BOND**

- A. Contractor shall furnish a performance/payment bond in an amount equal to 100% of the contract price to guarantee faithful performance of the contract and 100% of the contract price to guarantee the payment of all persons performing labor on the project and furnishing materials in connection therewith under this contract as set forth in the standard form of performance and payment bond included in the contract documents. The surety on such bond shall be issued by a surety company authorized by the Missouri Department of Insurance to do business in the state of Missouri.
- B. All Performance/Payment Bonds furnished in response to this provision shall be provided by a bonding company with a rating of B+ or higher as established by A.M. Best Company, Inc. in their most recent publication.

### **ARTICLE 6.2 – INSURANCE**

- A. The successful Contractor shall procure and maintain for the duration of the contract issued a policy or policies of insurance for the protection of both the Contractor and the Owner and their respective officers, officials, agents, consultants and employees. The Owner requires certification of insurance coverage from the Contractor prior to commencing work.
- B. Minimum Scope and Extent of Coverage

1. General Liability

Commercial General Liability, ISO coverage form number or equivalent CG 00 01 ("occurrence" basis), or I-SO coverage form number CG 00 02, or ISO equivalent.

If ISO equivalent or manuscript general liability coverage forms are used, minimum coverage will be as follows: Premises/Operations;Independent Contractors; Products/Completed Operations; personal Injury; Broad Form Property Damage including Completed Operations; Broad Form Contractual Liability Coverage to include Contractor's obligations under Article 1.11 Indemnification and any other Special Hazards required by the work of the contract.

2. Automobile Liability

Business Automobile Liability Insurance, ISO Coverage form number or equivalent CA 00 01 covering automobile liability, code 1 "ANY AUTO".

3. Workers' Compensation and Employer's Liability

Statutory Workers' Compensation Insurance for Missouri and standard Employer's Liability Insurance, or the authorization to self-insure for such liability from the Missouri Division of Workers' Compensation.

4. Builder's Risk or Installation Floater Insurance

Insurance upon the work and all materials, equipment, supplies, temporary structures and similar items which may be incident to the performance of the work and located at or adjacent to the site, against loss or damage from fire and such other casualties as are included in extended coverage in broad "All Risk" form, including coverage for Flood and Earthquake, in an amount not less than the replacement cost of the work or this contract price, whichever is greater, with loss payable to Contractor and Owner as their respective interests may appear.

Contractor shall maintain sufficient insurance to cover the full value of the work and materials as the work progresses, and shall furnish Owner copies of all endorsements. If Builder's Risk Reporting- Form of Endorsement is used, Contractor shall make all reports as required therein so as to keep in force an amount of insurance which will equal the replacement cost of the work, materials, equipment, supplies, temporary structures, and other property covered thereby; and if, as a result of Contractor's failure to make any such

report, the amount of insurance so recoverable shall be less than such replacement cost, Contractor's interest in the proceeds of such insurance, if any, shall be subordinated to Owner's interest to the end that Owner may receive full reimbursement for its loss.

C. Minimum Limits of Insurance

1. General Liability

Contractor

\$2,000,000 combined single limit per occurrence for bodily injury, personal injury, and property damage

\$2,000,000 annual aggregate

2. Automobile Liability

\$2,000,000 combined single limit per occurrence for bodily injury and property damage

3. Workers' Compensation and Employers Liability

Workers' Compensation limits as required by applicable State Statutes (generally unlimited) and minimum of \$1,000,000 limit per accident for Employer's Liability.

General Liability and Automobile Liability insurance may be arranged under individual policies for the full limits required or by a combination of underlying policies with the balance provided by a form-following Excess or Umbrella Liability policy.

D. Deductibles and Self-Insured Retentions

All deductibles, co-payment clauses, and self-insured retentions must be declared to and approved by the Owner. The Owner reserves the right to request the reduction or elimination of unacceptable deductibles or self-insured retentions, as they would apply to the Owner, and their respective officers, officials, agents, consultants and employees. Alternatively, the Owner may request Contractor to procure a bond guaranteeing payment of losses and related investigations, claims administration, and defense expenses.

E. Other Insurance Provisions and Requirements

The respective insurance policies and coverage, as specified below, must contain, or be endorsed to contain the following conditions or provisions:

1. General Liability

The Owner, and its respective commissioners, officers, officials, agents, consultants and employees shall be endorsed as additional insured's by ISO form CG 20 26 Additional

Insured - Designated Person or Organization. As additional insured's, they shall be covered as to work performed by or on behalf of the Contractor or as to liability which arises out of Contractor's activities or resulting from the performance of services or the delivery of goods called for by the Contract.

Contractor's insurance coverage shall be primary with respect to all additional insured's. Insurance of self-insurance programs maintained by the designated additional -insured's shall be excess of the Contractor's insurance and shall not contribute with it.

Additionally, the Contractor and Contractor's general liability insurer shall agree to waive all rights of subrogation against the Owner and any of their respective officers, officials, agents, consultants or employees for claims, losses, or expenses which arise out of Contractor's activities or result from the performance of services or the delivery of goods called for by the Contract.

Contractor's failure to comply with the terms and conditions of these insurance policies shall not affect or abridge coverage for the Owner, or for any of their officers, officials, agents, consultants or employees.

## 2. Automobile Insurance

The Owner, and their respective officers, officials, agents, consultants and employees shall be endorsed as additional insured's by ISO form CG 20 26 - Additional Insured Designated Person or Organization. As additional insured's, they shall be covered as to work performed by or on behalf of the Contractor or as to liability which arises out of Contractor's activities or resulting from the performance of services or the delivery of goods called for by the Contract.

Contractor's insurance coverage shall be primary with respect to all additional insured's. Insurance or self-insurance programs maintained by the designated additional insured's shall be in excess of the Contractor's insurance and shall not contribute with it.

Additionally, the Contractor and Contractor's automobile insurer shall agree to waive all rights of subrogation against the Owner and any of their respective officers, officials, agents, consultants or employees for claims, losses, or expenses which arise out of Contractor's activities or result from the

performance of services or the delivery of goods called for by the Contract.

Contractor's failure to comply with the terms and conditions of these insurance policies shall not affect or abridge coverage for the Owner or for any of its officers, officials, agents, consultants or employees.

## 3. Workers' Compensation/Employer's Liability

Contractor's workers' compensation insurance shall be endorsed with NCCI form WC 00 03 01 A - Alternative Employer Endorsement. The Alternative Employer Endorsement shall designate the Owner as "alternate employers."

## 4. All Coverages

Each insurance policy required by this section of the Contract shall contain a stipulation, endorsed if necessary, that the Owner will receive a minimum of a thirty (30) calendar day advance notice of any policy cancellation. Ten (10) calendar days advance notice is required for policy cancellation due to non-payment of premium.

## F. Insurer Qualifications and Acceptability

Insurance required hereunder shall be issued by an A.M. Best, "B+" rated, Class IX insurance company approved to conduct insurance business in the state of Missouri.

## G. Verification of Insurance Coverage

Prior to Owner issuing a Notice to Proceed, the Contractor shall furnish the Owner with Certificate(s) of Insurance and with any applicable original endorsements evidencing the required insurance coverage. The insurance certificates and endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. All certificates and endorsements received by the Owner are subject to review and approval by the Owner. The Owner reserves the right to require certified copies of all required policies at any time. If the scope of this contract will exceed one (1) year - or, if any of Contractor's applicable insurance coverage expires prior to completion of the work or services required under this contract - the Contractor will provide a renewal or replacement certificate before continuing work or services hereunder. If the Contractor fails to provide documentation of required insurance coverage, the Owner may issue a stop work order and no additional contract completion time and/or compensation shall be granted as a result thereof.

**ARTICLE 7 – SUSPENSION OR TERMINATION OF CONTRACT**

**ARTICLE 7.1 - FOR SITE CONDITIONS**

- A. When conditions at the site of the proposed work are considered by the Owner to be unsatisfactory for prosecution of the work, the Contractor may be ordered in writing to suspend the work or any part thereof until reasonable conditions exist. When such suspension is not due to fault or negligence of the Contractor, time allowed for completion of such suspended work will be extended by a period of time equal to that lost due to delay occasioned by ordered suspension. This will be a no cost time extension.

**ARTICLE 7.2 - FOR CAUSE**

- A. Termination or Suspension for Cause:
  - 1. If the Contractor shall file for bankruptcy, or should make a general assignment for the benefit of the creditors, or if a receiver should be appointed on account of insolvency, or if the contractor should persistently or repeatedly refuse or fail to supply enough properly skilled workers or proper materials, or if the contractor should fail to make prompt payment to subcontractors or for material or labor, or persistently disregard laws, ordinances or the instructions of the Owner, or otherwise be guilty of a substantial violation of any provision of this contract, then the Owner may serve notice on the Contractor and the surety setting forth the violations and demanding compliance with this contract. Unless within ten (10) consecutive calendar days after serving such notice, such violations shall cease and satisfactory arrangements for correction be made, the Owner may suspend the Contractor's right to proceed with the work or terminate this contract.
  - 2. In the event the Owner suspends Contractor's right to proceed with the work or terminates the contract, the Owner may demand that the Contractor's surety take over and complete the work on this contract, after the surety submits a written proposal to the Owner and receives written approval and upon the surety's failure or refusal to do so within ten (10) consecutive calendar days after demand therefore, the Owner may take over the work and prosecute the same to completion by bid or negotiated contract, or the Owner may elect to take possession of and utilize in completing the work such materials, supplies, appliances and plant as may be on the site of the work, and all subcontractors, if the Owner elects, shall be bound to perform their contracts.

- B. The Contractor and its surety shall be and remain liable to the Owner for any excess cost or damages occasioned to the Owner as a result of the actions above set forth.
- C. The Contractor in the event of such suspension or termination shall not be entitled to receive any further payments under this contract until the work is wholly finished. Then if the unpaid balance under this contract shall exceed all expenses of the Owner as certified by the Director, such excess shall be paid to the Contractor; but, if such expenses shall exceed the unpaid balance as certified by the Director, the Contractor and their surety shall be liable for and shall pay the difference and any damages to the Owner.
- D. In exercising Owner's right to secure completion of the work under any of the provisions hereof, the Director shall have the right to exercise Owner's sole discretion as to the manner, methods and reasonableness of costs of completing the work.
- E. The rights of the Owner to suspend or terminate as herein provided shall be cumulative and not exclusive and shall be in addition to any other remedy provided by law.
- F. The Contractor in the event of such suspension or termination may be declared ineligible for Owner contracts for a minimal period of twelve (12) months. Further, no contract will be awarded to any Contractor who lists in their bid form any subcontractor whose prior performance has contributed, as determined by the Owner, to a breach of a contract. In order to be considered for state-awarded contracts after this period, the Contractor/subcontractor will be required to forward acceptance reports to the Owner regarding successful completion of non-state projects during the intervening twelve (12) months from the date of default. No contracts will be awarded to a subcontractor/Contractor until the ability to perform responsibly in the private sector has been proven to the Owner.

**ARTICLE 7.3 -- FOR CONVENIENCE**

- A. The Owner may terminate or suspend the Contract or any portion of the Work without cause at any time, and at the Owner's convenience. Notification of a termination or suspension shall be in writing and shall be given to the Contractor and their surety. If the Contract is suspended, the notice will contain the anticipated duration of the suspension or the conditions under which work will be permitted to resume. If appropriate, the Contractor will be requested to demobilize and re-mobilize and will be reimbursed time and costs associated with the suspension.
- B. Upon receipt of notification, the Contractor shall:

1. Cease operations when directed.
  2. Take actions to protect the work and any stored materials.
  3. Place no further subcontracts or orders for material, supplies, services or facilities except as may be necessary to complete the portion of the Contract that has not been terminated. No claim for payment of materials or supplies ordered after the termination date shall be considered.
  4. Terminate all existing subcontracts, rentals, material, and equipment orders.
  5. Settle all outstanding liabilities arising from termination with subcontractors and suppliers.
  6. Transfer title and deliver to the Owner, work in progress, completed work, supplies and other material produced or acquire for the work terminated, and completed or partially completed plans, drawings information and other property that, if the Contract had been completed, would be required to be furnished to the Owner.
- C. For termination without cause and at the Owner's convenience, in addition to payment for work completed prior to date of termination, the Contractor may be entitled to payment of other documented costs directly associated with the early termination of the contract. Payment for anticipated profit and unapplied overhead will not be allowed.

## SECTION 007300 - SUPPLEMENTARY CONDITIONS

### 1.0 GENERAL:

- A. These Supplementary General Conditions clarify, add, delete, or otherwise modify standard terms and conditions of DIVISION 0, BIDDING AND CONTRACTING REQUIREMENTS.

### 2.0 CONTACTS:

Designer: Scott Vogler  
MECO Engineering Company Inc.  
3120 Palmyra Rd.  
Hannibal, MO 63401  
Telephone: 573-893-5558; Fax: 573-893-5404  
Email: [svogler@mecoengineering.com](mailto:svogler@mecoengineering.com)

Construction Representative: Mike Howard  
Division of Facilities Management, Design and Construction  
10325 Business 21, Hillsboro, MO 63050  
Telephone: (636) 524-8503  
Email: [Mike.Howard@oa.mo.gov](mailto:Mike.Howard@oa.mo.gov)

Project Manager: Terry Bruns  
Division of Facilities Management, Design and Construction  
301 West High Street, Room 730  
Jefferson City, Missouri 65102  
Telephone: 573-526-5184; Fax: 573-751-7277  
Email: [Terry.Bruns@oa.mo.gov](mailto:Terry.Bruns@oa.mo.gov)

Contract Specialist: Mandy Roberson  
Division of Facilities Management, Design and Construction  
301 West High Street, Room 730  
Jefferson City, Missouri 65102  
Telephone: 573-522-0074; Fax: 573-751-7277  
Email: [mandy.roberson@oa.mo.gov](mailto:mandy.roberson@oa.mo.gov)

### 3.0 NOTICE: ALL BID MATERIALS ARE DUE AT THE TIME OF BID SUBMITTAL. THERE IS NO SECOND SUBMITTAL FOR THIS PROJECT.

### 4.0 FURNISHING CONSTRUCTION DOCUMENTS:

- A. The Owner will furnish the Contractor with approximately 4 complete sets of drawings and specifications at no charge.
- B. The Owner will furnish the Contractor with approximately 4 sets of explanatory or change drawings at no charge.
- C. The Contractor may make copies of the documents as needed with no additional cost to the Owner.

### 5.0 ILLEGAL IMMIGRATION REFORM AND IMMIGRANT RESPONSIBILITY ACT

The Contractor understands and agrees that by signing a contract for this project, they certify the following:

- A. The Contractor shall only utilize personnel authorized to work in the United States in accordance with applicable federal and state laws. This includes but is not limited to the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) and INA Section 274A.
- B. If the Contractor is found to be in violation of this requirement or the applicable laws of the state, federal and local laws and regulations, and if the State of Missouri has reasonable cause to believe that the Contractor has knowingly employed individuals who are not eligible to work in the United States, the state shall have the right to cancel the contract immediately without penalty or recourse and suspend or debar the contractor from doing business with the state.
- C. The Contractor agrees to fully cooperate with any audit or investigation from federal, state or local law enforcement agencies.

### 6.0 SAFETY REQUIREMENTS

Contractor and subcontractors at any tier shall comply with RSMo 292.675 and Article 1.3, E, of Section 007213, General Conditions.

# Missouri

## Division of Labor Standards

### WAGE AND HOUR SECTION



MICHAEL L. PARSON, Governor

## Annual Wage Order No. 26

Section 092

### ST. CHARLES COUNTY

In accordance with Section 290.262 RSMo 2000, within thirty (30) days after a certified copy of this Annual Wage Order has been filed with the Secretary of State as indicated below, any person who may be affected by this Annual Wage Order may object by filing an objection in triplicate with the Labor and Industrial Relations Commission, P.O. Box 599, Jefferson City, MO 65102-0599. Such objections must set forth in writing the specific grounds of objection. Each objection shall certify that a copy has been furnished to the Division of Labor Standards, P.O. Box 449, Jefferson City, MO 65102-0449 pursuant to 8 CSR 20-5.010(1). A certified copy of the Annual Wage Order has been filed with the Secretary of State of Missouri.

Original Signed by \_\_\_\_\_

Taylor Burks, Director  
Division of Labor Standards

Filed With Secretary of State: \_\_\_\_\_ **March 8, 2019**

Last Date Objections May Be Filed: **April 8, 2019**

Prepared by Missouri Department of Labor and Industrial Relations

OCCUPATIONAL TITLE	** Date of Increase	Basic Hourly Rates
Asbestos Worker		\$58.41
Boilermaker		\$26.34*
<b>Bricklayer</b>		<b>\$57.67</b>
Carpenter		\$55.56
Lather		
Linoleum Layer		
Millwright		
Pile Driver		
<b>Cement Mason</b>		<b>\$51.36</b>
Plasterer		
Communications Technician		\$55.57
Electrician (Inside Wireman)		\$64.59
Electrician Outside Lineman		\$63.98
Lineman Operator		
Lineman - Tree Trimmer		
Groundman		
Groundman - Tree Trimmer		
Elevator Constructor		\$26.34*
Glazier		\$60.07
<b>Ironworker</b>		<b>\$60.81</b>
<b>Laborer</b>		<b>\$46.68</b>
General Laborer		
First Semi-Skilled		
Second Semi-Skilled		
Mason		\$50.01
Marble Mason		
Marble Finisher		
Terrazzo Worker		
Terrazzo Finisher		
Tile Setter		
Tile Finisher		
<b>Operating Engineer</b>		<b>\$60.71</b>
Group I		
Group II		
Group III		
Group III-A		
Group IV		
Group V		
Painter		\$47.83
Plumber		\$67.90
Pipe Fitter		
Roofer		\$50.81
Sheet Metal Worker		\$66.11
<b>Sprinkler Fitter</b>		<b>\$67.39</b>
Truck Driver		\$26.34*
Truck Control Service Driver		
Group I		
Group II		
Group III		
Group IV		

\*The Division of Labor Standards received less than 1,000 reportable hours as required by RSMo 290.257.4(b). Public works contracting minimum wage is established for this occupational title using data provided by Missouri Economic Research and Information Center, in accordance with RSMo 290.257.2.

Heavy Construction Rates for  
ST. CHARLES County

Section 092

OCCUPATIONAL TITLE	** Date of Increase	Basic Hourly Rates
Carpenter		\$56.31
Millwright		
Pile Driver		
Electrician (Outside Lineman)		\$63.98
Lineman Operator		
Lineman - Tree Trimmer		
Groundman		
Groundman - Tree Trimmer		
Laborer		\$47.45
General Laborer		
Skilled Laborer		
Operating Engineer		\$60.91
Group I		
Group II		
Group III		
Group IV		
Truck Driver		
Truck Control Service Driver		\$39.47
Group I		
Group II		
Group III		
Group IV		

Use Heavy Construction Rates on Highway and Heavy construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(3).

Use Building Construction Rates on Building construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(2).

If a worker is performing work on a heavy construction project within an occupational title that is not listed on the Heavy Construction Rate Sheet, use the rate for that occupational title as shown on the Building Construction Rate Sheet.

\*The Division of Labor Standards received less than 1,000 reportable hours as required by RSMo 290.257.4(b). Public works contracting minimum wage is established for this occupational title using data provided by Missouri Economic Research and Information Center, in accordance with RSMo 290.257.2.

# OVERTIME and HOLIDAYS

## OVERTIME

For all work performed on a Sunday or a holiday, not less than twice (2x) the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed or the public works contracting minimum wage, whichever is applicable, shall be paid to all workers employed by or on behalf of any public body engaged in the construction of public works, exclusive of maintenance work.

For all overtime work performed, not less than one and one-half (1½) the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed or the public works contracting minimum wage, whichever is applicable, shall be paid to all workers employed by or on behalf of any public body engaged in the construction of public works, exclusive of maintenance work or contractual obligation. For purposes of this subdivision, "**overtime work**" shall include work that exceeds ten hours in one day and work in excess of forty hours in one calendar week; and

A thirty-minute lunch period on each calendar day shall be allowed for each worker on a public works project, provided that such time shall not be considered as time worked.

## HOLIDAYS

January first;  
The last Monday in May;  
July fourth;  
The first Monday in September;  
November eleventh;  
The fourth Thursday in November; and  
December twenty-fifth;

If any holiday falls on a Sunday, the following Monday shall be considered a holiday.

## **SECTION 011000 – SUMMARY OF WORK**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 WORK COVERED BY CONTRACT DOCUMENTS**

- A. The Project consists of the repairing parking lots and driveways for Troop C Headquarters.
  - 1. Project Location: 891 Technology Drive, Weldon Springs, MO
  - 2. Owner: State of Missouri, Office of Administration, Division of Facilities Management, Design and Construction, Harry S Truman State Office Building, Post Office Box 809, 301 West High Street, Jefferson City, Missouri 65102.
- B. Contract Documents, dated June 21, 2019 (Re-Bid) were prepared for the Project by MECO Engineering Company, Inc., 3120 Palmyra Rd., Hannibal, MO 63401.
- C. The Work consists of, but is not limited to, removing pavement, milling, reconstruction, resurfacing, inlet adjusting, rehabilitation of sidewalk sections and curbs, curb modifications for lawn mower access, replacement of sensing cable at security access and all items incidental to the completion of work according to the plans and specifications.
- D. The Work will be constructed under a single prime contract as a lump sum (LS) base bid.

#### **1.3 DESIGNER'S ESTIMATE OF CONSTRUCTION COSTS**

- A. Base Bid: \$143,000.00 - \$196,000.00
- B. The Contractor shall review this project, visit the site, as questions (if needed) and not rely on this estimate in any way while preparing a bid for this project, but to supply his/her own due diligence and estimating for the Bid submitted.

#### **1.4 WORK SEQUENCE AND CALENDAR DAYS**

- A. All work performed under this project will be conducted in one (1) phase.
  - 1. Phase 1 consists of the base bid work described in the summary of work above. This project shall be substantially complete in 45 working days and ready for use by the Troop C Headquarters

#### **1.5 CONTRACTOR USE OF PREMISES**

- A. General: During the construction period the Contractor shall have full use of the premises for construction operations, including use of the site. The Contractor's use of the premises limited only by the Owner's right to perform work or to retain other contractors on portions of the Project.
- B. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.

1. Owner Occupancy: Allow for Owner occupancy and use by the public.
  2. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- C. Use of the Existing Building: Maintain the existing building in a weathertight condition throughout the construction period. Repair damage cause by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period..

## **1.6 OCCUPANCY REQUIREMENTS**

- A. Full Owner Occupancy: The Owner will occupy the site and existing building during the entire construction period. Cooperate with the Owner during construction operations to minimize conflicts and facilitate owner usage. Perform the Work so as not to interfere with the Owner's operations.
- B. Partial Owner Occupancy: The Owner reserves the right to occupy and to place and install equipment in completed areas of the building prior to Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.
1. The Designer will prepare a Certificate of Partial Occupancy for each specific portion of the Work to be occupied prior to substantial completion.
  2. Prior to partial Owner occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon occupancy, the Owner will operate and maintain mechanical and electrical systems serving occupied portions for the building.
  3. Upon occupancy, the Owner will assume responsibility for maintenance and custodial service for occupied portions for the building.

## **1.7 MISCELLANEOUS PROVISIONS**

### **PART 2 - PRODUCTS (Not Applicable)**

### **PART 3 - EXECUTION**

#### **3.1 SCHEDULE OF PRODUCTS ORDERED IN ADVANCE**

**END OF SECTION 011000**

## **SECTION 012100 – ALLOWANCES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements governing allowances.
  - 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Contract Change.
- B. Types of allowances include the following:
  - 1. Lump-sum allowances.
  - 2. Weather allowances.
- C. Related Sections include the following:
  - 1. Division 1 Section "Contract Modification Procedures" for procedures for submitting and handling Contract Changes for allowances.

#### **1.3 WEATHER ALLOWANCE**

- A. Included within the completion period for this project are a specified number of “bad weather” days (see Schedule of Allowances).
- B. The Contractor’s progress schedule shall clearly indicate the bad weather day allowance as an “activity” or “activities”. In the event weather conditions preclude performance of critical work activities for 50% or more of the Contractor’s scheduled workday, that day shall be declared unavailable for work due to weather (a “bad weather” day) and charged against the above allowance. Critical work activities will be determined by review of the Contractor’s current progress schedule.
- C. The Contractor’s Representative and the Construction Representative shall agree monthly on the number of “bad weather” days to be charged against the allowance. This determination will be documented in writing and be signed by the Contractor and the Construction Representatives. If there is a failure to agree on all or part of the “bad weather” days for a particular month, that disagreement shall be noted on this written document and signed by each party’s representative. Failure of the Contractor’s representative to sign the “bad weather” day documentation after it is presented, with or without the notes of disagreement, shall constitute agreement with the “bad weather” day determination contained in that document.
- D. There will be no modification to the time of contract performance due solely to the failure to deplete the “bad weather” day allowance.

- E. Once this allowance is depleted, a no cost Contract Change time extension will be executed for “bad weather” days, as defined above, encountered during the remainder of the Project.

#### **1.4 [LUMP-SUM] ALLOWANCES**

- A. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials [selected by Designer] under allowance shall be included as part of the Contract Sum and not part of the allowance.

#### **PART 2 - PRODUCTS (Not Used)**

#### **PART 3 - EXECUTION**

##### **3.1 SCHEDULE OF ALLOWANCES**

- A. Weather Allowance: Included within the working days completion period for this Project is five (5) “bad weather” days.

**END OF SECTION 012100**

## **SECTION 012600 – CONTRACT MODIFICATION PROCEDURES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. This Section specifies administrative and procedural requirements for handling and processing Contract Modifications.
- B. Related Sections include the following:
  - 1. Division 0, Section 007213, Article 3.1 "Acceptable Substitutions" for administrative procedures for handling Requests for Substitutions made after Contract award.
  - 2. Division 0, Section 007213, Article 4.0 "Changes in the Work" for Contract Change requirements.

#### **1.3 REQUESTS FOR INFORMATION**

- A. In the event that the Contractor or Subcontractor, at any tier, determines that some portion of the Drawings, Specifications, or other Contract Documents requires clarification or interpretation, the Contractor shall submit a "Request for Information" (RFI) in writing to the Designer. A RFI may only be submitted by the Contractor and shall only be submitted on the RFI forms provided by the Owner. The Contractor shall clearly and concisely set forth the issue for which clarification or interpretation is sought and why a response is needed. In the RFI, the Contractor shall set forth an interpretation or understanding of the requirement along with reasons why such an understanding was reached.
- B. Responses to RFI shall be issued within ten (10) working days of receipt of the Request from the Contractor unless the Designer determines that a longer time is necessary to provide an adequate response. If a longer time is determined necessary by the Designer, the Designer will, within five (5) working days of receipt of the request, notify the Contractor of the anticipated response time. If the Contractor submits a RFI on a time sensitive activity on the current project schedule, the Contractor shall not be entitled to any time extension due to the time it takes the Designer to respond to the request provided that the Designer responds within the ten (10) working days set forth above.
- C. Responses from the Designer will not change any requirement of the Contract Documents. In the event the Contractor believes that a response to a RFI will cause a change to the requirements of the Contract Document, the Contractor shall give written notice to the Designer requesting a Contract Change for the work. Failure to give such written notice within ten (10) working days, shall waive the Contractor's right to seek additional time or cost under Article 4, "Changes in the Work" of the General Conditions.

## **1.4 MINOR CHANGES IN THE WORK**

- A. Designer will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Amount or the Contract Time, on "Designer's Supplemental Instructions" (DSI).

## **1.5 PROPOSAL REQUESTS**

- A. The Designer or Owner Representative will issue a detailed description of proposed Changes in the Work that may require adjustment to the Contract Amount or the Contract Time. The proposed Change Description will be issued using the "Request for Proposal" (RFP) form. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Proposal Requests issued by the Designer or Owner Representative are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
  - 2. Within ten (10) working days after receipt of Proposal Request, submit a proposal for the cost adjustments to the Contract Amount and the Contract Time necessary to execute the Change. The Contractor shall submit his proposal on the appropriate Contract Change Detailed Breakdown form. Subcontractors may use the appropriate Contract Change Detailed Breakdown form or submit their proposal on their letterhead provided the same level of detail is included. All proposals shall include:
    - a. A detailed breakdown of costs per Article 4.1 of the General Conditions.
    - b. If requesting additional time per Article 4.2 of the General Conditions, include an updated Contractor's Construction Schedule that indicates the effect of the Change including, but not limited to, changes in activity duration, start and finish times, and activity relationship.

## **1.6 CONTRACT CHANGE PROCEDURES**

- A. On Owner's approval of a Proposal Request, the Designer or Owner Representative will issue a Contract Change for signatures of Owner and Contractor on the "Contract Change" form.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.1 REFERENCED FORMS**

- A. The following forms can be found on our website at <https://oa.mo.gov/facilities/vendor-links/architectengineering-forms> or <https://oa.mo.gov/facilities/vendor-links/contractor-forms>:
  - 1. Request for Information
  - 2. Designer's Supplemental Instructions
  - 3. Request for Proposal
  - 4. Contract Change
  - 5. Contract Change Detailed Breakdown – SAMPLES

6. Contract Change Detailed Breakdown – General Contractor (GC)
7. Contract Change Detailed Breakdown – Subcontractor (SUB)

**END OF SECTION 012600**

## **SECTION 013100 – COORDINATION**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. This Section includes administrative provisions for coordinating construction operations on Projects including, but not limited to, the following:
  - 1. Coordination Drawings.
  - 2. Administrative and supervisory personnel.
  - 3. Project meetings.
- B. Each Contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific Contractor.
- C. Related Sections include the following:
  - 1. Division 1, Section 013200 "Schedules" for preparing and submitting Contractor's Construction Schedule.
  - 2. Articles 1.8.B and 1.8.C of Section 007213 "General Conditions" for coordinating meetings onsite.
  - 3. Article 5.4.H of Section 007213 "General Conditions" for coordinating Closeout of the Contract.

#### **1.3 COORDINATION**

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections, which depend on each other for proper installation, connection, and operation.
- B. Coordination: Each Contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each Contractor shall coordinate its operations with operations included in different Sections that depend on each other for proper installation, connection, and operation.
  - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  - 2. Coordinate installation of different components with other Contractors to ensure maximum accessibility for required maintenance, service, and repair.
  - 3. Make adequate provisions to accommodate items scheduled for later installation.
  - 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required

maintenance, service, and repair of all components including mechanical and electrical.

- C. Prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
  - 1. Prepare similar memoranda for Owner and separate Contractors if coordination of their Work is required.
  
- D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other Contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
  - 1. Preparation of Contractor's Construction Schedule.
  - 2. Preparation of the Schedule of Values.
  - 3. Installation and removal of temporary facilities and controls.
  - 4. Delivery and processing of submittals.
  - 5. Progress meetings.
  - 6. Startup and adjustment of systems.
  - 7. Project Closeout activities.
  
- E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
  - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

#### **1.4 SUBMITTALS**

- A. Refer to Section 013300 for required Submittals.

#### **1.5 PROJECT MEETINGS**

- A. The Owner's Construction Representative will schedule a Pre-Construction Meeting prior to beginning of construction. The date, time, and exact place of this meeting will be determined after Contract Award and notification of all interested parties. The Contractor shall arrange to have the Job Superintendent and all prime Subcontractors present at the meeting. During the Pre-Construction Meeting, the construction procedures, outline of progress meetings and information necessary for submitting payment requests will be discussed and materials distributed along with any other pertinent information.
  
- B. Coordination of submittals and drawings as applicable shall be executed prior to commencement of work.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION 013100**

## **SECTION 013200 – SCHEDULE – BAR CHART**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. This Section includes requirements for a Bar Chart Schedule for the project construction activities, schedule of submittals, and schedule for testing.

### **PART 2 - PRODUCTS – (Not Applicable)**

### **PART 3 - EXECUTION**

#### **3.1 SUBMITTAL PROCEDURES**

- A. The Contractor shall submit to the Designer, within ten (10) working days following the Notice to Proceed, a Progress Schedule showing the rate of progress the Contractor agrees to maintain and the order in which he proposed to carry out the various phases of Work. No payments shall be made to the Contractor until the Progress Schedule has been approved by the Owner.
- B. The Contractor shall submit an updated Schedule for presentation at each Monthly Progress Meeting. The Schedule shall be updated by the Contractor as necessary to reflect the current Schedule and its relationship to the original Schedule. The updated Schedule shall reflect any changes in the logic, sequence, durations, or completion date. Payments to the Contractor shall be suspended if the Progress Schedule is not adequately updated to reflect actual conditions.
- C. The Contractor shall submit Progress Schedules to Subcontractors to permit coordinating their Progress Schedules to the general construction Work. The Contractor shall coordinate preparation and processing of Schedules and reports with performance of other construction activities.

#### **3.2 CONSTRUCTION PROGRESS SCHEDULE – BAR CHART SCHEDULE**

- A. Bar-Chart Schedule: The Contractor shall prepare a comprehensive, fully developed, horizontal bar chart-type Contractor's Construction Schedule. The Contractor for general construction shall prepare the Construction Schedule for the entire Project. The Schedule shall show the percentage of work to be completed at any time, anticipated monthly payments by Owner, as well as significant dates (such as completion of excavation, concrete foundation work, underground lines, superstructure, rough-ins, enclosure, hanging of fixtures, etc.) which shall serve as check points to determine compliance with the approved Schedule. The Schedule shall also include an activity for the number of "bad" weather days specified in Section 012100 – Allowances.
  - 1. The Contractor shall provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week.

- a. If practical, use the same Schedule of Values breakdown for schedule time bars.
  2. The Contractor shall provide a base activity time bar showing duration for each construction activity. Each bar is to indicate start and completion dates for the activity. The Contractor is to place a contrasting bar below each original schedule activity time for indicating actual progress and planned remaining duration for the activity.
  3. The Contractor shall prepare the Schedule on a minimal number of separate sheets to readily show the data for the entire construction period.
  4. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on schedule with other construction activities. Include minor elements involved in the overall sequence of the Work. Show each activity in proper sequence. Indicate graphically the sequences necessary for completion of related portions of the Work.
  5. Coordinate the Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests, and other required schedules and reports.
  6. Indicate the Intent to Award and the Contract Substantial Completion dates on the schedule.
- B. Phasing: Provide notations on the schedule to show how the sequence of the Work is affected by the following:
1. Requirement for Phased completion
  2. Work by separate Contractors
  3. Work by the Owner
  4. Pre-purchased materials
  5. Coordination with existing construction
  6. Limitations of continued occupancies
  7. Un-interruptible services
  8. Partial Occupancy prior to Substantial Completion
  9. Site restrictions
  10. Provisions for future construction
  11. Seasonal variations
  12. Environmental control
- C. Work Stages: Use crosshatched bars to indicate important stages of construction for each major portion of the Work. Such stages include, but are not necessarily limited to, the following:
1. Subcontract awards
  2. Submittals
  3. Purchases
  4. Mockups
  5. Fabrication

6. Sample testing
  7. Deliveries
  8. Installation
  9. Testing
  10. Adjusting
  11. Curing
  12. Startup and placement into final use and operation
- D. Area Separations: Provide a separate time bar to identify each major area of construction for each major portion of the Work. For the purposes of this Article, a “major area” is a story of construction, a separate building, or a similar significant construction element.
1. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
    - a. Structural completion.
    - b. Permanent space enclosure
    - c. Completion of mechanical installation
    - d. Completion of the electrical portion of the Work
    - e. Substantial Completion

### **3.3 SCHEDULE OF SUBMITTALS**

- A. Upon acceptance of the Construction Progress Schedule, prepare and submit a complete schedule of submittals. Coordinate the submittal schedule with Section 011300 SUBMITTALS, the approved Construction Progress Schedule, list of subcontracts, Schedule of Values and the list of products.
- B. Prepare the schedule in chronological order. Provide the following information
1. Scheduled date for the first submittal
  2. Related Section number
  3. Submittal category
  4. Name of the Subcontractor
  5. Description of the part of the Work covered
  6. Scheduled date for resubmittal
  7. Scheduled date for the Designer’s final release or approval
- C. Distribution: Following the Designer’s response to the initial submittal schedule, print and distribute copies to the Designer, Owner, subcontractors, and other parties required to comply with submittal dates indicated.
1. Post copies in the Project meeting room and temporary field office.
  2. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned part of the Work and are no longer involved in construction activities.

- D. **Schedule Updating:** Revise the schedule after each meeting or other activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

### **3.4 SCHEDULE OF INSPECTIONS AND TESTS**

- A. Prepare a schedule of inspections, tests, and similar services required by the Contract Documents. Submit the schedule with (15) days of the date established for commencement of the Contract Work. The Contractor is to notify the testing agency at least (5) working days in advance of the required tests unless otherwise specified.
- B. **Form:** This schedule shall be in tabular form and shall include, but not be limited to, the following:
  - 1. Specification Section number
  - 2. Description of the test
  - 3. Identification of applicable standards
  - 4. Identification of test methods
  - 5. Number of tests required
  - 6. Time schedule or time span for tests
  - 7. Entity responsible for performing tests
  - 8. Requirements for taking samples
  - 9. Unique characteristics of each service
- C. **Distribution:** Distribute the schedule to the Owner, Architect, and each party involved in performance of portions of the Work where inspections and tests are required.

**END OF SECTION 013200**

## **SECTION 013300 – SUBMITTALS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements for submittals required for performance of the Work including the following:
  - 1. Shop Drawings
  - 2. Product Data
  - 3. Samples
  - 4. Quality Assurance Submittals
  - 5. Construction Photographs
  - 6. Operating and Maintenance Manuals
  - 7. Warranties
- B. Administrative Submittals: Refer to General and Supplementary Conditions other applicable Division 1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following:
  - 1. Construction Progress Schedule including Schedule of Values
  - 2. Performance and Payment Bonds
  - 3. Insurance Certificates
  - 4. Applications for Payment
  - 5. Certified Payroll Reports
  - 6. Partial and Final Receipt of Payment and Release Forms
  - 7. Affidavit – Compliance with Prevailing Wage Law
  - 8. Record Drawings
  - 9. Notifications, Permits, etc.
- C. The Contractor is obliged and responsible to check all shop drawings and schedules to assure compliance with contract plans and specifications. The Contractor is responsible for the content of the shop drawings and coordination with other contract work. Shop drawings and schedules shall indicate, in detail, all parts of an Item or Work including erection and setting instructions and integration with the Work of other trades.
- D. The Contractor shall at all times make a copy, of all approved submittals, available on site to the Construction Representative.

#### **1.3 SUBMITTAL PROCEDURES**

- A. The Contractor shall comply with the General and Supplementary Conditions and other applicable sections of the Contract Documents. The Contractor shall submit, with such

promptness as to cause no delay in his work or in that of any other contractors, all required submittals indicated in Part 3.1 of this section and elsewhere in the Contract Documents. Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
    - a. The Designer reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
- B. Each drawing and/or series of drawings submitted must be accompanied by a letter of transmittal giving a list of the titles and numbers of the drawings. Each series shall be numbered consecutively for ready reference and each drawing shall be marked with the following information:
1. Date of Submission
  2. Name of Project
  3. Location
  4. Section Number of Specification
  5. State Project Number
  6. Name of Submitting Contractor
  7. Name of Subcontractor
  8. Indicate if Item is submitted as specified or as a substitution

#### **1.4 SHOP DRAWINGS**

- A. Comply with the General Conditions, Article 3.2.
- B. The Contractor shall submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.
- C. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates, and similar drawings including the following information:
  1. Dimensions
  2. Identification of products and materials included by sheet and detail number
  3. Compliance with specified standards
  4. Notation of coordination requirements
  5. Notation of dimensions established by field measurement
  6. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 8½"x11" but no larger than 36"x48".

## 1.5 PRODUCT DATA

- A. The Contractor shall comply with the General Conditions, Article 3.2.
- B. The Contractor shall collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.
  - 1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information including the following information:
    - a. Manufacturer's printed recommendations
    - b. Compliance with Trade Association standards
    - c. Compliance with recognized Testing Agency standards
    - d. Application of Testing Agency labels and seals
    - e. Notation of dimensions verified by field measurement
    - f. Notation of coordination requirements
  - 2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

## 1.6 SAMPLES

- A. The Contractor shall comply with the General Conditions, Article 3.2.
- B. The Contractor shall submit full-size, fully fabricated samples, cured and finished as specified, and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.
  - 1. The Contractor shall mount or display samples in the manner to facilitate review of qualities indicated. Prepare samples to match the Designer's sample including the following:
    - a. Specification Section number and reference
    - b. Generic description of the Sample
    - c. Sample source
    - d. Product name or name of the Manufacturer
    - e. Compliance with recognized standards
    - f. Availability and delivery time
  - 2. The Contractor shall submit samples for review of size, kind, color, pattern, and texture. Submit samples for a final check of these characteristics with other elements and a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
    - a. Where variation in color, pattern, texture, or other characteristic is inherent in the material or product represented, submit at least three (3) multiple units that show approximate limits of the variations.

- b. Refer to other Specification Sections for requirements for samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
  - c. Refer to other Sections for samples to be returned to the Contractor for incorporation in the Work. Such samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of sample submittals.
  - d. Samples not incorporated into the Work, or otherwise designated as the Owner's property, are the property of the Contractor and shall be removed from the site prior to Substantial Completion.
3. Field samples are full-size examples erected onsite to illustrate finishes, coatings, or finish materials and to establish the Project standard.
- a. The Contractor shall comply with submittal requirements to the fullest extent possible. The Contractor shall process transmittal forms to provide a record of activity.

## **1.7 QUALITY ASSURANCE DOCUMENTS**

- A. The Contractor shall comply with the General Conditions, Article 3.2
- B. The Contractor shall submit quality control submittals including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other Sections of the Specifications.
- C. Certifications: Where other Sections of the Specifications require certification that a product, material, or installation complies with specified requirements, submit a notarized certification from the Manufacturer certifying compliance with specified requirements.
  - 1. Signature: Certification shall be signed by an officer of the Manufacturer or other individual authorized to contractually bind the Company.
- D. Inspection and Test Reports: The Contractor shall submit the required inspection and test reports from independent testing agencies as specified in this Section and in other Sections of the Contract Documents.

## **1.8 OPERATING AND MAINTENANCE MANUALS AND WARRANTIES**

- A. The Contractor shall submit all required manufacturer's operating instructions, maintenance/service manuals, and warranties in accordance with the General Conditions, Article 3.5, and Supplementary Conditions along with this and other Sections of the Contract Documents.

## **PART 2 - PRODUCTS (Not Applicable)**

## **PART 3 - EXECUTION**

### **3.1 REQUIRED SUBMITTALS**

- A. Contractor shall submit the following information for materials and equipment to be provided under this contract, as noted on the following page.

SECTION	DESCRIPTION	TYPE OF SUBMITTAL																
		Shop Drawings	Product Data	Sample	Certifications	Mfgs Instructions	Test report	Inspection Report	Wiring Diagrams	Record Photographs	Maintenance Data	Operating Instruction					Warranty	O&M Manuals/As-Builts
033000	Portland Cement Concrete	x	x		x		x	x		x			x					
312500	Sedimentation, Erosion Control	x	x		x					x								
320117.61	Bituminous Pav. Crack Seal.	x	x				x			x	x		x					
321123	Aggregate Base Course	x	x		x		x			x								
321213.13	Tack Coat	x	x		x													
321216.13	Plant Mix Bit. Pavement	x	x		x		x	x		x								
321713	Parking Blocks	x	x		x	x					x		x					
321723	Pavement Markings	x	x							x								
329219	Fertilize, Seed, Mulch	x	x		x					x			x					
Item 6	Sensor in Pavement	x	x		x				x	x			x	x				

**END OF SECTION 013300**

## **SECTION 013513.25 – SITE SECURITY AND HEALTH REQUIREMENTS (MSHP)**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUBMITTALS**

- A. List of required submittals:
  - 1. Materials Safety Data Sheets for all hazardous materials to be brought onsite.
  - 2. Schedule of proposed shutdowns, if applicable.
  - 3. A list of the names of all employees who will submit fingerprints for a background check, and the signed privacy documents identified below for each employee.

### **PART 2 - PRODUCTS (Not Applicable)**

### **PART 3 - EXECUTION**

#### **3.1 ACCESS TO THE SITE**

- A. The Contractor shall arrange with Facility Representatives to establish procedures for the controlled entry of workers and materials into the work areas at the Facility.
- B. The Contractor shall establish regular working hours with Facility Representatives. The Contractor must report changes in working hours or overtime to Facility Representatives and obtain approval twenty-four (24) hours ahead of time. The Contractor shall report emergency overtime to Facility Representatives as soon as it is evident that overtime is needed. The Contractor must obtain approval from Facility Representatives for all work performed after dark.
- C. The Contractor shall provide the name and phone number of the Contractor's employee or agent who is in charge onsite; this individual must be able to be contacted in case of emergency. The Contractor must be able to furnish names and address of all employees upon request.
- D. All construction personnel shall visibly display issued identification cards.

#### **3.2 FIRE PROTECTION, SAFETY, AND HEALTH CONTROLS**

- A. The Contractor shall take all necessary precautions to guard against and eliminate possible fire hazards.
  - 1. Onsite burning is prohibited.
  - 2. The Contractor shall store all flammable or hazardous materials in proper containers located outside the buildings or offsite, if possible.

3. The Contractor shall provide and maintain, in good order, during construction fire extinguishers as required by the National Fire Protection Association. In areas of flammable liquids, asphalt, or electrical hazards, 15-pound carbon dioxide or 20-pound dry chemical extinguishers shall be provided.
- B. The Contractor shall not obstruct streets or walks without permission from the Owner's Construction Representative and Facility Representatives.
- C. The Contractor's personnel shall not exceed the speed limit of 15 mph while at the Facility unless otherwise posted.
- D. The Contractor shall take all necessary, reasonable measures to reduce air and water pollution by any material or equipment used during construction. The Contractor shall keep volatile wastes in covered containers, and shall not dispose of volatile wastes or oils in storm or sanitary drains.
- E. The Contractor shall keep the project site neat, orderly, and in a safe condition at all times. The Contractor shall immediately remove all hazardous waste, and shall not allow rubbish to accumulate. The Contractor shall provide onsite containers for collection of rubbish and shall dispose of it at frequent intervals during the progress of the Work.
- F. Fire exits, alarm systems, and sprinkler systems shall remain fully operational at all times, unless written approval is received from the Owner's Construction Representative and the appropriate Facility Representative at least twenty-four (24) hours in advance. The Contractor shall submit a written time schedule for any proposed shutdowns.
- G. For all hazardous materials brought onsite, Material Safety Data Sheets shall be on site and readily available upon request at least a day before delivery.
- H. Alcoholic beverages or illegal substances shall not be brought upon the Facility premises. The Contractor's workers shall not be under the influence of any intoxicating substances while on the Facility premises.

### **3.3 SECURITY CLEARANCES AND RESTRICTIONS**

#### **A. FMDC REQUIRED FINGERPRINTING FOR CRIMINAL BACKGROUND AND WARRANTS CHECK**

1. All employees of the Contractor are required to submit fingerprints to the Missouri State Highway Patrol to enable the Office of Administration, Division of Facilities Management, Design and Construction (FMDC) to receive state and national criminal background checks on such employees. FMDC reserves the right to prohibit any employee of the Contractor from performing work in or on the premises of any facility owned, operated, or utilized by the State of Missouri for any reason.
2. The Contractor shall ensure all of its employees submit fingerprints to the Missouri State Highway Patrol and pay for the cost of such background checks. The Contractor shall submit to FMDC via email to [FMDCSecurity@oa.mo.gov](mailto:FMDCSecurity@oa.mo.gov) a list of the names of the Contractor's employees who will be fingerprinted and a signed Missouri Applicant Fingerprint Privacy Notice, Applicant Privacy Rights and Privacy Act Statement for each employee. All employees of the Contractor approved by FMDC to work at a State facility must obtain a contractor ID badge from FMDC prior to beginning work on-site, unless the Director of FMDC, at the Director's discretion, waives the requirement for a contractor ID badge. The

Contractor and its employees must comply with the process for background checks and contractor ID badges found on FMDC's website at: <https://oa.mo.gov/fmdc-contractor-id-badges>.

3. Pursuant to section 43.540, RSMo, FMDC participates in the Missouri Rap Back and National Rap Back programs as of August 28, 2018. This means that the Missouri State Highway Patrol, Central Records Repository, and the Federal Bureau of Investigation will retain the fingerprints submitted by each of the Contractor's employees, and those fingerprints will be searched against other fingerprints on file, including latent fingerprints. While retained, an employee's fingerprints may continue to be compared against other fingerprints submitted or retained by the Federal Bureau of Investigation, including latent fingerprints.
4. As part of the Missouri and National Rap Back programs, FMDC will receive notification if a new arrest is reported for an employee whose fingerprints have been submitted for FMDC after August 28, 2018. If the employee is performing work on a State contract at the time of the arrest notification, FMDC will request and receive the employee's updated criminal history records. If the employee is no longer performing work on a State contract, FMDC will not obtain updated criminal records.
5. Pursuant to section 43.540, RSMo, the Missouri State Highway Patrol will provide the results of the employee's background check directly to FMDC. FMDC may NOT release the results of a background check to the Contractor or provide the Contractor any information obtained from a background check, either verbally or in writing. FMDC will notify the Contractor only whether an employee is approved to work on State property.
6. Each employee who submits fingerprints to the Missouri State Highway Patrol has a right to obtain a copy of the results of his or her background check. The employee may challenge the accuracy and completeness of the information contained in a background check report and obtain a determination from the Missouri State Highway Patrol and/or the FBI regarding the validity of such challenge prior to FMDC making a final decision about his or her eligibility to perform work under a State contract.
7. The Contractor shall notify FMDC via email to [FMDCSecurity@oa.mo.gov](mailto:FMDCSecurity@oa.mo.gov) if an employee is terminated or resigns from employment with the Contractor. If the Contractor does not anticipate performing work on a State contract in the future, the Contractor may request that FMDC remove its employees from the Rap Back programs. However, if removed from the Rap Back programs, employees will be required to submit new fingerprints should the contractor be awarded another State contract.
8. Upon award of a Contract, the Contractor should contact FMDC at [FMDCSecurity@oa.mo.gov](mailto:FMDCSecurity@oa.mo.gov) to determine if its employees need to provide a new background check. If a Contractor's employee has previously submitted a fingerprint background check to FMDC as part of the Missouri and National Rap Back programs, the employee may not need to submit another fingerprint search for a period of three to six years, depending upon the circumstances. The Contractor understands and agrees that FMDC may require more frequent background checks without providing any explanation to the Contractor. The fact that an additional background check is requested by FMDC does not indicate that the employee has a criminal record.

## **B. MSHP SECURITY CLEARANCE REQUIREMENTS**

1. In addition to the fingerprint background check conducted by FMDC, prior to the commencement of any onsite work, the General Contractor shall submit to the Missouri State Highway Patrol a list containing the full name of each contractor and subcontractor employee as displayed on his/her driver's license, date of birth, and social security number.
2. The Contractor shall designate a single point of contact for submittal of all contractor and subcontractor employee information. All information shall be submitted to Lieutenant Steven Frisbie at [steven.frisbie@mshp.dps.mo.gov](mailto:steven.frisbie@mshp.dps.mo.gov).
3. No Contractor personnel will be allowed on Highway Patrol property without first obtaining the appropriate security clearance. The Missouri State Highway Patrol reserves the right to deny admission to any individual they feel may be detrimental to the security of the agency.
4. The Contractor will not incur any costs related to background checks conducted by the Missouri State Highway Patrol.
5. The Missouri State Highway Patrol will issue contractor identification cards to all approved personnel. All issued cards shall be returned to the agency upon completion of the project.

### **3.4 DISRUPTION OF UTILITIES**

- A. The Contractor shall give a minimum of seventy-two (72) hours written notice to the Construction Representative and the Facility Representative before disconnecting electric, gas, water, fire protection, or sewer service to any building.
- B. The Contractor shall give a minimum of seventy-two (72) hours written notice to the Construction Representative and Facility Representative before closing any access drives, and shall make temporary access available, if possible. The Contractor shall not obstruct streets, walks, or parking.

**END OF SECTION 013513.25**

## **SECTION 015000 – CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. This Section includes requirements for construction facilities and temporary controls including temporary utilities, support facilities, security, and protection.
- B. Support facilities include, but are not limited to, the following:
  - 1. Field offices and storage sheds
- C. Security and protection facilities include, but are not limited to, the following:
  - 1. Barricades, warning signs, and lights
  - 2. Environmental protection

#### **1.3 QUALITY ASSURANCE**

- A. Regulations: Comply with industry standards and applicable laws and regulations including, but not limited to, the following:
  - 1. Building code requirements
  - 2. Health and safety regulations
  - 3. Utility company regulations
  - 4. Police, fire department, and rescue squad rules
  - 5. Environmental protection regulations

### **PART 2 - PRODUCTS**

#### **2.1 MATERIALS**

- A. General: Provide new materials. If acceptable to the Designer, the Contractor may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.
- B. Lumber and Plywood: Comply with requirements in Division 6 Section “Rough Carpentry”.
  - 1. For signs and directory boards, provide exterior-type, Grade B-B high-density concrete form overlay plywood of sized and thicknesses indicated.
  - 2. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8” (16mm) thick exterior plywood.

## **2.2 EQUIPMENT**

- A. General: Provide new equipment. If acceptable to the Designer, the Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.
- B. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical, aerated re-circulation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- C. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers, or a combination of extinguishers of NFPA-recommended classes for the exposures.
  - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each Facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

### **3.2 TEMPORARY UTILITY INSTALLATION**

- A. Temporary Water Service: The Owner will provide water for construction purposes from the existing building system. All required temporary extensions shall be provided and removed by the Contractor. Connection points and methods of connection shall be designated and approved by the Construction Representative.
- B. Temporary Toilets: Install self-contained toilet units. Use of pit-type privies will not be permitted. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.
  - 1. Shield toilets to ensure privacy.
  - 2. Provide separate facilities for male and female personnel.
  - 3. Provide toilet tissue materials for each facility.

### **3.3 SUPPORT FACILITIES INSTALLATION**

- A. General: Locate field offices, storage sheds, and other temporary construction and support facilities for easy access.
  - 1. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will

be permitted to use permanent facilities, under conditions acceptable to the Owner.

- B. Field Offices: Field office is not required.
- C. Construction Parking: Parking at the site will be provided in the areas designated at the Pre-Construction Meeting.
- D. Construction Parking: Contractors must be prepared to discuss their storage and parking needs at the Pre-Bid Meeting. Parking for construction personnel cannot be provided onsite. All parking will be offsite. The Contractor will have to park on the street, in city-owned lots, or in commercial lots. Under no circumstances will any vehicle be parked in a fire lane. Parking on lawns shall be prohibited.
- E. Dewatering Facilities and Drains: For temporary drainage and dewatering facilities and operations not directly associated with construction activities included under individual Sections, comply with dewatering requirements of applicable Division 2 Sections. Where feasible, utilize the same facilities. Maintain the site, excavations, and construction free of water.
- F. Project Identification and Temporary Signs: Prepare project identification and other signs of size indicated. Install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative-treated wood or steel. Do not permit installation of unauthorized signs.
  - 1. Project Identification Signs: Engage an experienced sign painter to apply graphics. Comply with details indicated.
  - 2. Temporary Signs: Prepare signs to provide directional information to construction personnel and visitors.
- G. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than seven (7) days during normal weather or three (3) days when the temperature is expected to rise above 80°F (27°C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.

### **3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION**

- A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Designer.
  - 1. Store combustible materials in containers in fire-safe locations.
  - 2. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire-exposure areas.
- B. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting including flashing red or amber lights.

- C. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid use of tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near the site.

**END OF SECTION 015000**

**DIVISION 01 – GENERAL REQUIREMENTS****SECTION 015526 -TRAFFIC CONTROL****1.0 GENERAL****1.1 DESCRIPTION OF WORK**

- A. This work shall consist of furnishing and installing traffic control devices as required to protect the public, employees and to protect the work throughout the duration of the project as directed by the Owner's Representative.
- B. If instructed by the Owner's Representative, the Contractor shall provide the Department of Public Safety, Missouri State Highway Patrol -Joint Communications 24 hour notice, prior to closure.
- C. Access shall be maintained to drives unless permission is granted by the Owner's Representative for a temporary closure. The Contractor shall provide the Owner's Representative 72 hours notice prior to closure.
- D. The Contractor shall provide a contact, responsible for 24-hour maintenance of signage and traffic control devices. Provide the contact's telephone number(s) to Owner's Representative.

**2.0 PRODUCTS****2.1 MATERIALS DESCRIPTION**

- A. The materials used for traffic control shall include signage, cones, barricades, flashing lights, and other traffic control devices shall conform to the "Manual of Uniform Traffic Control Devices" (MUTCD).

**3.0 EXECUTION****3.1 GENERAL**

- A. The Contractor shall install, maintain, clean and relocate the traffic control devices as the work progresses. Any device that becomes unreadable or inoperable shall be repaired or replaced with 24 hours of notification by the Owner or Owner's Representative.
- B. Signs and barricades shall be covered, removed or relocated as their necessity ceases to exist. The temporary traffic control devices shall be removed at the end of the project.
- C. The Contractor shall add to the number and type of traffic control devices as required to adequately protect the public, employees and the work as he considers necessary or as directed by the Owner's Representative.
- D. The Contractor shall coordinate the stages of construction and traffic control plan with the Owner's Representative. The contractor's traffic control plan shall protect the public, employees and work during daytime and nighttime conditions. During periods of no work, the Contractor shall provide Type 2 Barricades with Flashing Lights at any closed location. Signage for specific construction operations is not listed, but shall be provided by the Contractor in accordance with MUTCD.
- E. The Contractor shall give written notice to the Owner's Representative if any accident, pedestrian or vehicular, has occurred on the project. The Contractor shall provide any law enforcement reports of accidents on the project to the Owner's Representative.

F. The Contractor shall keep closers to a minimum and closers shall be subject to the Owner's Representative approval.

**END OF SECTION 015526**

**DIVISION 01 – GENERAL REQUIREMENTS****SECTION 017123.13 -CONSTRUCTION LAYOUT****1.0 GENERAL****1.1 SCOPE OF WORK**

- A. Construction layout and staking.
- B. Drawings and General Provisions of contract apply to this section.

**1.2 GENERAL**

- A. The contractor will provide construction staking as herein described.
- B. Owner will provide control information for construction staking. The cost of additional control stakes or replacement of control stakes shall be the responsibility of the Contractor.

**2.0 PRODUCTS**

N/A

**3.0 EXECUTION****3.1 GENERAL**

- A. Contractor is responsible to protect control points. The Owner's Representative will provide re-establishment of control. The cost of re-establishment may be deducted from the contract.

**END OF SECTION 017123.13**

## **SECTION 017400 – CLEANING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements for cleaning during the Project.
- B. Environmental Requirements: Conduct cleaning and waste-disposal operations in compliance with local laws and ordinances. Comply fully with federal and local environmental and anti-pollution regulations.
  - 1. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
  - 2. Burning or burying of debris, rubbish, or other waste material on the premises is not permitted.

### **PART 2 - PRODUCTS**

#### **2.1 MATERIALS**

- A. Cleaning Agents: Use cleaning materials and agents recommended by the manufacturer or fabricator for the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

### **PART 3 - EXECUTION**

#### **3.1 PROGRESS CLEANING**

- A. General
  - 1. Retain all stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials.
  - 2. Do not allow the accumulation of scrap, debris, waste material, and other items not required for construction of this Work.
  - 3. At least twice each month, and more often if necessary, completely remove all scrap, debris, and waste material from the jobsite.
  - 4. Provide adequate storage for all items awaiting removal from the jobsite, observing all requirements for fire protection and protection of the ecology.
- B. Site
  - 1. Daily, inspect the site and pick up all scrap, debris, and waste material. Remove all such items to the place designated for their storage.
  - 2. Weekly, inspect all arrangements of materials stored onsite. Re-stack, tidy, or otherwise service all material arrangements.

3. Maintain the site in a neat and orderly condition at all times.

C. Structures

1. Daily, inspect the structures and pick up all scrap, debris, and waste material. Remove all such items to the place designated for their storage.
2. Weekly, sweep all interior spaces clean. "Clean" for the purposes of this paragraph, shall be interpreted as meaning free from dust and other material capable of being removed by use of reasonable effort and handheld broom.
3. In preparation for installation of succeeding materials, clean the structures or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using all equipment and materials required to achieve the required cleanliness.
4. Following the installation of finish floor materials, clean the finish floor daily while work is being performed in the space in which finish materials have been installed. "Clean" for the purposes of this subparagraph, shall be interpreted as meaning free from all foreign material which, in the opinion of the Construction Representative, may be injurious to the finish of the finish floor material.

### 3.2 FINAL CLEANING

- A. General: Provide final cleaning operations when indicated. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of Work to the condition expected from a commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
- B. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for the entire Project or a portion of the Project.
  1. Clean the Project Site, yard and grounds, in areas disturbed by construction activities including landscape development areas, of rubbish, waste material, litter, and foreign substances.
  2. Sweep paved areas broom clean. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
  3. Remove petrochemical spills, stains, and other foreign deposits.
  4. Remove tools, construction equipment, machinery, and surplus material from the site.
  5. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
- C. Removal of Protection: Remove temporary protection and facilities installed during construction to protect previously completed installations during the remainder of the construction period.
- D. Compliances: Comply with governing regulations and safety standards for cleaning operations. Remove waste materials from the site and dispose of lawfully.
  1. Where extra materials of value remain after Final Acceptance by the Owner, they become the Owner's property.

**END OF SECTION 017400**

**DIVISION 3 - CONCRETE****SECTION 033000 - PORTLAND CEMENT CONCRETE****1.0 GENERAL:**

- A. This section of the specifications covers the materials, methods of construction, and requirements necessary to complete the Portland Cement Concrete work as indicated on the Drawings or as specified herein.

**1.1 TESTING AGENCY:**

- A. Inspection and testing will be performed by the Owner.
- B. Mix Design Submittals: Prior to beginning the work and within 14 days following the notice to proceed, the Contractor shall submit to the Owner's Representative, for review, previous independent laboratory generated data detailing performance (measures of performance as defined below) of the proposed mix design. Contractor shall also provide certification that materials used and their proportions are to be essentially unchanged from the mixture for which the data was generated. If independent laboratory data is not available, the proposed mix design shall be checked by an independent laboratory acceptable to the Owner's Representative. All costs related to such testing shall be paid for by the Contractor. Since laboratory trial batches require 35 calendar days to complete, the Contractor may consider testing more than one mix design for each class of concrete. Include the following information for each mix design:
1. Water/cement materials ratio
  2. Slump as per ASTM C 143
  3. Air content as per ASTM C 231 (pressure method), or ASTM C 173 (volumetric method)
  4. Unit weight of concrete as per ASTM C 138
  5. Compressive strength at 3, 7, and 28 days per ASTM C 39
  6. Shrinkage (length change) as measured in accordance with Section 1.01 - Testing Agency, Paragraph C. - Shrinking Testing Procedure
- C. Shrinkage Testing Procedure: Testing and reporting shall conform to the latest ASTM C 157-93 with the following modifications:
1. Wet cure specimens for a period of 7 days (including the period of time the specimens are in the mold). Wet cure may be achieved either through storage in a moist cabinet or room in accordance with ASTM C 511, or through storage in lime saturated water.
  2. Slump of concrete for testing shall match job requirements and need not be limited to restrictions as stated in ASTM C 157 Section 7.4.
  3. Report results in accordance with ASTM C 157 at 0, 7, 14, and 28 days of drying.
- D. Test of cement and aggregates shall be performed to ensure conformance with specification requirements. Manufacturer's certification that cement materials meet specification requirements and results of manufacturer's own material tests will be acceptable in lieu of tests by inspection and testing firm. Aggregate testing shall be performed by independent inspection and testing firm, for compliance with ASTM C33, including limits for deleterious substances, grading and physical property requirements.
- E. Field quality control tests are specified in Part 3 of this section.

## **1.2 REFERENCE STANDARDS:**

- A. ACI 301 - Specification for Structural Concrete for Buildings.
- B. ACI 340 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
- C. ACI 305 - Recommended Practice for Hot Weather Concreting.
- D. ACI 306 - Recommended Practice for Cold Weather Concreting.
- E. ACI 318 - Building Code Requirements for Reinforced Concrete.
- F. ASTM C33 - Concrete Aggregates.
- G. ASTM C39 - Compressive Strength of Cylindrical Concrete Specimens.
- H. ASTM C94 - Ready-Mixed Concrete.
- I. ASTM C138 - Unit Weight, Yield, and Air Content (Gravimetric) of Concrete.
- J. ASTM C143 - Slump of Portland Cement Concrete.
- K. ASTM C150 - Portland Cement.
- L. ASTM C157-93 - Length Change of Hardened Hydraulic-Cement Mortar and Concrete.
- M. ASTM C171 -Sheet Materials for Curing Concrete.
- N. ASTM C173 - Air Content of Freshly Mixed Concrete (Volumetric Method).
- O. ASTM C231 - Air Content of Freshly Mixed Concrete (Pressure Method).
- P. ASTM C260 - Air Entraining Admixtures for Concrete.
- Q. ASTM C309 - Liquid Membrane - Forming Compounds for Curing Concrete.
- R. ASTM C494 - Chemical Admixtures for Concrete.

## **2.0 MATERIALS**

### **2.1 PORTLAND CEMENT:**

- A. The Portland Cement shall conform to A.S.T.M. Specifications C-150, Type I, or A.S.T.M. Specification C-175, Type IA air entrained cement, if approved by the Engineer.
- B. The portland cement used under this contract shall be a standard brand of portland cement which has been in practical use in public works and which has heretofore given satisfactory results. The cement when delivered to the site or at the location where the concrete is to be mixed, shall be stored so as to protect it from damage; and no damaged, partially set, or lumpy cement shall be used in the work and shall immediately be removed from the premises. The cement shall be manufactured by only one mill and used throughout the entire project. Brands of cement shall not be mixed.

### **2.2 FINE AGGREGATE:**

PORTLAND CEMENT CONCRETE

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- A. The fine aggregate shall consist of clean, natural sand of hard, strong, durable material, free from all foreign organic material or other injurious impurities conforming to A.S.T.M. C-33. The sand shall be graded to meet the following sieve analysis using the U.S. Standard sieve series, with all percentages determined by weight.

<u>SIEVE SIZE</u>	<u>PERCENT PASSING</u>
3/8 Inch	100
No. 4	95-100
No. 16	60-75
No. 50	10-30
No. 100	0-5

The fineness modulus of the fine aggregate shall not be less than 2.50 nor more than 3.00.

### **2.3 COARSE AGGREGATE:**

- A. The coarse aggregate shall be clean washed and screened gravel or crushed limestone, having a specific gravity of not less than 2.56. The gravel shall be free from dust, loam, clay, alkali, or organic impurities, and free from thin porous, elongated, or laminated particles. A sample of the gravel when subjected to the sodium sulfate accelerated soundness test for freezing and thawing shall have a weighted average loss of not more than 15%. Crushed limestone aggregate shall consist of uncoated particles of sound, durable rock of uniform quality without an excess of flat, elongated, or laminated pieces.
- B. The gravel or crushed limestone shall be graded to meet the following sieve analysis using the U.S. Standard Sieve Series, with all percentages determined by weight.

<u>SIEVE SIZE</u>	<u>PERCENTAGE PASSING</u>
1 1/2 inch	100
1 inch	95-100
3/4 inch	70-85
3/8 inch	20-40
No. 4	0-5

- C. The use of frozen aggregates will not be permitted. When the temperature of the air permits concreting to be carried on, the aggregates must be thawed out, thoroughly removing all frost before inclusion in the concrete mixture.

### **2.4 WATER:**

- A. The water in mixing concrete shall be clean and free from injurious amounts of oil, acids, alkalis, salts, or organic matter. The water used shall be of potable quality.

### **2.5 ADMIXTURES:**

- A. Should the Contractor desire to incorporate in the concrete mix an admixture to improve the workability of the concrete, the approval must be obtained from the Engineer. However, no additional payment will be made for the use of the admixture; the use of such admixture will be made at the Contractor's expense.

1. Air Entrainment: ASTM C260.

2. Chemical: ASTM C494, Type A - water reducing. Type B - retarding. Type C - accelerating. Type D - water reducing and retarding. Type E - water reducing and accelerating. Type F - high range water reducer. Type G - high range water reducing and retarding.
3. Shrinkage Reducing Admixture (SRA): Provide Eclipse™ Shrinkage Reducing Admixture as supplied by Grace Construction Products (or approved equal) at a rate of 1.5 gallons per cubic yard (liters per cubic meter).
4. Fibrous Reinforcing: Provide Grade MicroFiber® as supplied by Grace Construction Products (or approved equal) at a dosage rate not less than 0.5 lb per cubic yard.
5. The use of calcium chloride in concrete is strictly prohibited.

## **2.6 PREMOULDED EXPANSION JOINT:**

- A. The premoulded expansion joint material shall be non-extruding resilient type conforming to ASTM designation D 1751.
- B. The joint filler shall be full depth of concrete section and 2" thick unless shown otherwise.

## **2.7 REINFORCING STEEL:**

- A. The reinforcing steel shall be rolled from new Billet-Steel Bars for Concrete Reinforcement A.S.T.M.-615 with deformations conforming to A.S.T.M.-305 and 60,000 psi minimum yield strength, A.S.T.M. A-432.
- B. The reinforcing, when delivered, shall be protected from the weather. The reinforcing shall not be oiled or painted. Reinforcing with slight rust which can easily be removed with a wire brush may be used after removal of rust. All reinforcing steel unacceptable to the Owner will be immediately removed from the job site.
- C. Welded wire fabric shall conform to A.S.T.M. A-185 and shall be the size and gauge shown on the Drawings.
- D. All bent bars shall be accurately cold bent to conform to the approved shop drawings.
- E. All bars shall be tagged and bundled. Imperishable marking tags are to be used.
- F. Metal accessories, including spacers, chairs, ties, and other devices necessary for properly assembling, placing and spacing and supporting all reinforcing in place, shall be provided.
- G. Reinforcing steel shall be carefully handled so that it will not become bent or otherwise damaged, shall be stored on racks, skids or other supports which will keep the steel from contact with the ground.

## **2.8 CONCRETE ADHESIVE:**

- A. Where indicated on the Drawings or requested by the Engineer, SIKA Corporation, SIKADUR 32, HI-MOD LPL, or equal adhesive shall be used.

## **2.9 LIQUID MEMBRANE CURING COMPOUND:**

- A. Liquid Membrane Curing Compound shall comply with ASTM C-309, Type 1, and AASHTO M-148.
- B. Polyethylene Film: 4 mil thick, opaque ASTM C 171.

## **3.0 CONSTRUCTION REQUIREMENTS:**

### **3.1 CONCRETE:**

- A. Mix concrete in accordance with ASTM C94.
- B. Provide concrete of the following strength:
  - a. Compressive strength (28 day): 4000 psi
  - b. Entrained Air Content: As indicated in ACI 301, Table 3.4.1 or 7.5% +/- 1.5% with the Shrinkage Reducing Admixture.
  - c. Water Cement Ratio: Maximum 0.45.
  - d. Slump: 1 inch minimum, 3 inch maximum for footings and substructure walls; 4 inch maximum for slabs, beams, reinforced walls and columns. Loss of slump in pumping shall not exceed 1 1/2 inch.
- C. Select proportions for normal weight concrete in accordance with ACI 301, Chapter 3, Section 3.9 or 3.10.
- D. Admixtures shall be included with the mix design submittal and reviewed by the Engineer.
- E. Use accelerating admixtures for use only in cold weather. Concrete techniques and placement requirements shall be in place under the application and reviewed by the Engineer. Calcium chloride or admixtures containing chlorides may not be used in the concrete.
- F. Use retaining admixtures only in hot weather and shall follow hot weather concrete techniques to lower concrete temperature to an acceptable level. These techniques shall be reviewed by the Engineer.
- G. Use air entrained concrete for all concrete exposed to the exterior.

### **3.2 MIXING:**

- A. Ready Mix (Central Plant) concrete shall be used for all work on this project, provided the concrete conforms to the proportions and strengths as specified herein. Two speed mixer trucks shall be utilized for transit to the job site.
- B. The concrete must be in place within one hour after water is added to the mix. A.S.T.M. Specifications for Ready Mix Concrete C-94 shall apply. The Central Mixing Plant shall be designated in writing to the Engineer for his approval one week prior to the usage of concrete on the job site.

### **3.3 COLD AND HOT WEATHER REQUIREMENTS:**

- A. Cold weather concreting shall not be continued when the air temperature is below 45 degrees F, unless the following conditions are maintained:
  - 1. Mixing water shall be heated to a maximum of 150 degrees F.
  - 2. Aggregates shall be heated until free of all ice and frost.
  - 3. The concrete temperature after mixing shall be between 50 degrees F and 70 degrees F if the air temperature is 25 degrees F to 45 degrees F.
  - 4. After the concrete is placed, it shall be covered, protected and heated so as to maintain a minimum of 70 degrees F air temperature for the first 24 hours and 50 degrees F for the next six days.

5. Moist conditions shall be maintained during the heating period.
  6. All covering, heating equipment, etc., shall be on hand and approved by the Engineer before any concrete is placed.
- B. No concrete shall be placed on iced or frozen subgrade or when the air temperature is below 25 degrees F.
- C. Hot weather concrete work will not be permitted on exposed surfaces while air temperature exceeds 100 degrees F. Cover and protect and cool as necessary to maintain the internal temperature of the concrete below 100 degrees F. Concrete delivered to the job site while in the Ready Mix truck shall maintain a temperature less than 85 degrees F.

### **3.4 CURING:**

- A. Curing shall be accomplished by preventing loss of moisture, rapid temperature change, and mechanical injury or injury from rain or flowing water for a period of not less than 5 days when normal Portland Cement has been used. Curing shall be started as soon as free water has disappeared from the surface of the concrete after placing and finishing. Curing shall be accomplished by using any of the following methods or combination thereof, as approved by the Engineer.
- B. Unformed surfaces shall be covered with approved fabric, mats, burlap, or with sand, and shall be kept continually wet, or be covered with waterproof paper or polyethylene sheeting, or be coated with liquid membrane. Where formed surfaces are cured in forms, the forms shall be kept continually wet or the top forms may be loosened, as directed or approved by the Owner and water allowed to run down between the forms and concrete. If forms are removed before the end of the curing period, curing shall be continued as on unformed surfaces. Burlap shall be used only on surfaces which will be exposed in the finish work and shall be in two layers. Water shall be applied in a manner which will not damage the concrete, and shall be free from impurities which may damage or discolor the concrete.
- C. Liquid membrane-forming curing compounds, when approved by the Engineer, shall be applied by power spraying equipment using a spray nozzle equipped with a wind guard. The compound shall be applied in a two-coat, continuous operation at a coverage of not more than 200 square feet per gallon for each coat or as recommended by the manufacturer. The compound shall form a uniform, continuous, adherent film that will not check, crack or peel and shall be free from pinholes or other imperfections. Surfaces subject to heavy rainfall within 3 hours after application of compound shall be re-sprayed at the rate specified above. Surfaces coated with curing compound shall be kept free of foot and vehicle traffic or other abrasions during the curing period. Membrane curing compound shall not be used on surfaces that are to receive concrete, bituminous membrane waterproofing, resilient floor covering, nor surfaces that are to be painted.
- D. Waterproof paper or polyethylene sheeting shall be placed to completely cover the concrete with enough overlap for secure anchorage around the edges. Adjoining sheets shall be lapped 6 inches and appropriately weighted, or sealed with tape or other approved means. Edge and lap anchorage shall be sufficient to prevent billowing or displacement by the wind. The sheeting material shall be no less than 4 mils thick and black in color for cold weather use and white or clear for hot weather.
- E. To facilitate rubbing of concrete, or for other reasons, forms may be removed from vertical surfaces of thick sections 48 hours after concreting, with the approval of the Engineer. Extreme caution should be exercised to prevent injury of concrete surfaces and edges during form removal. Surfaces revealed by form removal before the 5 day curing period shall have one of the other curing methods applied as soon as possible after from stripping.

### **3.5 FORMS:**

- A. The forms utilized for concrete shall be watertight, true to line and elevation, and rigidly braced so as not to be disturbed during the placement of concrete. If the forms develop any defects such as bulging, sagging, or showing signs of lateral displacement after the concrete has been placed, the concrete shall be removed and replaced correctly at the Contractor's expense. The inside of all forms shall be coated with a light, clear, paraffin based oil, which will not discolor or otherwise mar the concrete surface. The oil will be applied prior to erection of the forms; any reinforcing steel contaminated with form oil will be removed and replaced.
- B. Forms for concrete surfaces which will be visible in the finished structure shall be lined with wooden sheets such as masonite or smooth plywood. The joints of this lining shall be neat and close. Lining damaged with hammer imprints shall not be used.
- C. Removal of forms shall be restricted to the following minimum time requirements:
  - 1. Floor slab (structural): 120 hours
  - 2. Floor slab on grade: 48 hours
  - 3. Walls: 48 hours
  - 4. Beam bottom forms 7 days or develop at least 3,000 psi
- D. The minimum times, shown above, shall be utilized unless specific instruction to increase this time period has been requested by the Engineer.
- E. Form ties shall be of the removable end, permanently embedded body type and shall have sufficient strength, stiffness, and rigidity to support and maintain the form in proper position and alignment without the use of auxiliary spreaders. Ties shall also have water stop collars.
- F. Chamfer strips shall be placed in forms to bevel all salient edges and corners and the top edges of walls. Unless otherwise noted, bevels shall be 3/4 inch wide and shall be cast in place.

**3.6 PLACING REINFORCEMENT:**

- A. Reinforcement shall be accurately formed and positioned, and shall be maintained in proper position while the concrete is being placed and compacted. Unless otherwise shown on the Drawings, the details of fabrication shall conform to ACI 315 and 318. In case of conflict, ACI 318 shall govern.
- B. Approval by the Owner's Representative is required at the completion of placing reinforcing steel prior to the placing of any concrete.

**3.7 PLACING OF CONCRETE:**

- A. The placing of concrete shall be accomplished by placing in one continuous operation between the limits of the work or between properly constructed and permissible construction joints.
- B. The Contractor shall place no concrete until after observation, by the Engineer of forms, reinforcing, and embedded items. Place no concrete over water covered, muddy, frozen soil or dry soil or sub-base. Dry sub-base shall be sprinkled with water prior to the placement of concrete.
- C. In preparation for the placing of concrete, all chips, and other construction debris and extraneous matter, shall be removed from the interior of the forms. Struts, stays and braces, serving temporarily to hold the forms in correct shape and alignment pending the placing of concrete in their locations, shall be removed when the concrete placing has reached an elevation rendering their services unnecessary. These temporary members shall be entirely removed from the forms and not buried in the concrete. Concrete shall be placed so as to avoid segregation of the materials and displacement of the reinforcement. The use of long troughs, chutes, and pipes for conveying concrete from the mixer to the forms shall be permitted only on written authorization from

the Owner. In case an inferior quality of concrete is produced by the use of such conveyors, the Owner may order discontinuance of their use and the substitution of a satisfactory method of placing.

- D. Concrete shall be conveyed to place of deposit by methods which prevent separation of materials. Hoppers, chutes, tubes, or pumping equipment shall be sized to insure a practically continuous flow of concrete to point of delivery without separation of materials.
- E. The maximum free fall of concrete shall be less than six feet (6').
- F. Concrete shall be placed in a continuous operation until the panel or section is completed. Concrete for walls, piers, and columns shall be placed in layers not to exceed eighteen inches (18") in depth. Layers shall be incorporated together by vibrating a minimum of three inches (3") into the previously placed layer.
- G. During the placing of the concrete, it shall be compacted by mechanical vibration obtained by mechanical power operating within the mass of the concrete, supplemented by spading tools. Vibrators shall be of a type and design approved by the Engineer.
- H. The intensity of vibration shall be such as to visibly affect a mass of concrete of 1 inch slump over a radius of at least 18 inches. The Contractor shall provide a sufficient number of vibrators to properly compact each batch immediately after it is placed in the forms. Vibration shall be manipulated so as to thoroughly work the concrete around the reinforcement and embedded fixtures and in the corners and angles of the forms. Vibration shall be applied at the point of deposit and in the areas of the freshly deposited concrete.
- I. The vibrators shall be inserted and withdrawn out of the concrete slowly. The vibration shall be of sufficient duration and intensity to thoroughly compact the concrete, but shall not be continued so as to cause segregation of aggregate. Vibration shall not be continued at any one point to the extent that localized areas of grout are formed.
- J. Vibrations shall not be applied directly or through the reinforcement to sections or layers of concrete which have hardened to the degree that the concrete ceases to be plastic under vibration. It shall not be used to make concrete flow in the forms over distances so great as to cause segregation, and vibrators shall not be used to transport concrete in the forms.
- K. Vibration shall be supplemented by such spading as is necessary to ensure smooth surfaces and dense concrete along form surfaces and in corners and locations impossible to reach with the vibrators.

### **3.8 FINISHING:**

- A. Finishing of the concrete shall be accomplished as follows:
  - 1. Immediately after removing the forms, all fins or irregular projections shall be removed from all surfaces exposed above ground. On all surfaces the areas of cavities produced by form ties, holes, honeycombing, broken edges or corners, and other surface defects, shall be cleaned and carefully filled, pointed, and trowelled to a true uniform smooth surface with sand-cement mortar mixed in the proportions used in the grade of concrete being furnished. Defective concrete as determined by the Owner shall be repaired by cutting out the unsatisfactory material and placing new concrete which shall be secured with keys, dovetails or anchors. Concrete for patching shall be drier than the usual mixture and shall be thoroughly tamped into place.
  - 2. All exposed concrete surfaces, that is, those surfaces which will be visible (except floor slabs and sidewalks) shall be finished in the following manner: Forms shall be removed from such surfaces as soon as structurally possible, as approved by the Engineer and all depressions or imperfections immediately patched as described above. The surface shall then be machine or hand-rubbed until the entire surface has a smooth, homogeneous pleasant-appearing finish of uniform texture and color.

Any delay in patching or rubbing such surfaces shall be cause for rejection of the entire structure or for requiring the surfaces to be ground smooth and painted or coated with thoroseal.

3. All surfaces to receive a decorative or protective coating shall be ground, rubbed and filled as necessary to provide a surface smooth enough to insure a good paint coverage.
4. No mortar wet cement shall be used in finishing except the mortar necessary to fill imperfections. Edging tools shall be used on all exposed top edges.
5. The top surface of walls where exposed shall receive a smooth trowelled finish. Where the top surface joins the sides, a 3/4 inch chamfer shall be provided. All floor slabs shall receive a steel trowel finish.
6. On pedestrian walks, before final troweling and brooming, and while concrete is still wet, apply Carborundum Company "Silicon Carbide" grains by sprinkling on at a rate of 1/4 pound per square foot and working grains with a wood float. Walks shall receive a light brush finish.

### **3.9 SAMPLES AND TEST:**

- A. Concrete Control Tests: For strength tests of cylinders during work provide 3 cylinders for each 50 cu. yd. of concrete, a part thereof over 20 cu. yds. used on one days pour for each concrete class. Test 1 at 7 days; 1 at 28 days. Make and cure test cylinder per ASTM C31. Cure specimens under laboratory conditions except Owner may require curing under field conditions when he considers that there is a possibility air temperature may fall below 40 degrees F. Test cylinders per ASTM C39.
- B. Testing Questionable Concrete: In event cylinders indicate that concrete does not meet specified strength requirements, Engineer reserves right to order cores from hardened concrete secured and tested per ASTM C42, or order load tests per ACI 318, or both. Costs of such cores and tests shall be borne by Contractor. If tests indicate that concrete placed does not conform to drawings and specifications, Contractor shall take measures as directed by Engineer to correct deficiency without extra cost to Owner.
- C. Slump Test: Test should occur at the beginning of the day, whenever questionable concrete is encountered and whenever test cylinders are taken.
- D. Air Test: Test should occur whenever the air temperature changes, the aggregate grading changes and whenever test cylinders are taken.
- E. Reinforcing Steel: With each shipment of steel, submit to Engineer three (3) copies of certified mill test covering tensile strength of samples from shipment.

### **4.0 SHOP DRAWINGS**

- A. Shop drawings shall be submitted in accordance with the General Conditions and General Requirements. The Contractor shall furnish certified mill tests for all bars and shall submit duplicate copies of the bar drawings and schedules for preliminary checking and copies for final approval as specified in the General Conditions and General Requirements. Bending details shall conform to the standards of the Reinforcing Steel Institute.

**END OF SECTION 033000**

**DIVISION 31 – EARTHWORK****SECTION 312300 - EXCAVATING, FILLING AND GRADING****1.0 GENERAL****1.1 DESCRIPTION OF WORK**

A. This section includes, but is not limited to, the following:

1. Trenching
2. Backfill, Compaction and Grading
3. All Related Items

**1.2 QUALITY ASSURANCE**

A. Applicable Standards:

1. American Society for Testing and Materials (ASTM).

**1.3 JOB CONDITIONS**

A. Existing Utilities:

1. Locate existing underground utilities in the areas of work before starting earthwork operations. Where utilities are to remain in place, provide adequate means of protection during earthwork operations.
2. Should uncharted, or incorrectly charted piping or other utilities be encountered during excavation, consult the utility owner immediately for directions. Cooperate with the owner and public and private utility companies in keeping their respective services and facilities in operation. Repair damaged utilities to the satisfaction of the utility owner.
3. Do not interrupt existing utilities servicing facilities occupied and used by the Owner or others, except when permitted in writing by the Owner's Representative and only after acceptable temporary utility services have been provided. Completely remove from the site underground utilities indicated to be removed. Coordinate with local utility companies for shut-off services if lines are active.

B. Use of Explosives:

1. Blasting will not be permitted.

C. Temporary Protection:

1. Barricade open excavations occurring as part of this work and post with warning lights. Operate warning lights as recommended by authorities having jurisdiction.
2. Protect structures, utilities, sidewalks, pavements and other facilities from damages caused by settlement, lateral movement, undermining, washout and other hazards created by excavation operations.

D. Temporary Erosion Control:

1. The Contractor shall be responsible for keeping surface water runoff free from silt, sediment and earth fill material in areas disturbed by all construction activities.

E. Rock Excavation:

1. No additional or separate payment will be made for rock excavation.

**2.0 PRODUCTS**

**2.1 MATERIALS DESCRIPTION**

A. Cohesionless materials include gravels, gravel-sand mixtures, sands, and gravelly sands exclusive of clayey and silty material, materials which are free-draining and for which impact compaction will not produce a well-defined moisture-density relationship curve and for which the maximum density by impact methods will generally be less than by vibratory methods.

B. Cohesive materials shall include silts and clays generally exclusive of sands and gravel--materials for which impact compaction will produce a well-defined moisture-density relationship curve.

C. Impervious cohesive materials shall be defined as CH or CL materials as defined by the Unified Soil Classification System.

D. Permeable materials shall be defined as either non-cohesive or cohesive materials that do not meet the specifications for impervious cohesive materials.

E. Waste:

1. Waste materials include excess suitable materials and all materials unsuitable for use in the work.
  - a) Unsuitable materials include all materials that contain debris, roots, organic matter, frozen matter, rock (with any dimension greater than one-half the loose layer thickness) or other materials that are determined by Owner's Representative as too wet or otherwise unsuitable for providing a stable subgrade or stable foundation for structures.
  - b) Suitable materials include materials that are free of debris, roots, organic matter, refuse, ashes, cinders, frozen matter and that which is free of rock with any dimension greater than one-half of the specified loose layer thickness.
2. All waste materials (excess suitable and all unsuitable) encountered during grading shall be removed from the immediate work area and disposed of by the Contractor, as directed by the Owner's Representative.

F. Rock Excavation:

1. No additional or separate payment will be made for rock excavation.

G. Borrow:

1. Borrow materials include all fill materials and topsoil obtained from approved locations.

2. Borrow shall include all excavating, handling, and final disposal of materials as specified.
3. Proper methods of erosion and sediment control of the borrow site shall also be the Contractor's responsibility.

H. Topsoil Materials:

1. Topsoil shall be a friable clay loam surface soil having a minimum depth of 4" and relatively free of subsoil, clay lumps, stones, and other objects over 2" in diameter, and without weeds, roots and other objectionable material.
2. Topsoil shall be stripped to appropriate depths to prevent intermingling with the underlying subsoil or other objectionable material. Heavy growths of grass shall be removed from construction areas prior to stripping.
3. Topsoil stripping shall be stopped a sufficient distance from trees to be left in place to prevent damage to the main root system.
4. Topsoil shall be stockpiled in designated areas or as otherwise directed. Piles shall be constructed to freely drain surface water.

3.0 **SOIL CLASSIFICATIONS**

- A. Satisfactory soil materials shall be nonswelling materials with plastic indexes of less than 20 and liquid limits less than 40. Soil meeting these requirements under the Unified Soil Classification System for the following soil groups are acceptable:

Classification    Description

- GW. . . . . Well graded gravels, gravel-sand mixtures, little or no fines.  
 GP. . . . . Poorly graded gravels, gravel-sand mixtures, little or no fines.  
 GM. . . . . Silty gravels, poorly graded gravel-sand-silt mixtures.  
 SW. . . . . Well graded sands, gravelly sand, little or no fines.

Classification    Description

- SP. . . . . Poorly graded sands, gravelly sands, little or no fines.  
 SM. . . . . Silty sands, poorly graded sand-silt mixture.  
 SC. . . . . Silty sands, sand-clay mixtures.  
 ML. . . . . Inorganic silts, and very fine sands with slight plasticity.  
 CL. . . . . Silty or sandy clays of low plasticity.

- B. Unsatisfactory soil materials consist of all other materials including the following that are classified under the Unified Soil Classification System:

Classification    Description

- OL. . . . . Organic silts and organic silty clays of low plasticity.  
 MH. . . . . Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.  
 CH. . . . . Inorganic clays of high plasticity, fat clays.  
 OH. . . . . Inorganic clays of medium to high plasticity, organic silts.

PT. . . . . Peat and other highly organic soils.

## 2.3 SOIL CATEGORIES

A. Embedment soils used in pipe installation are described by ASTM and are grouped into five categories below:

1. Class I - Angular, 6 to 40 mm (1/4" to 1 1/2") graded stone, including materials such as coral, slag, cinders, crushed stone, and crushed shells.
2. Class II - Coarse sands and gravels with maximum particle size of 40 mm (1 1/2") including variously graded sands and gravels containing small percentages of fines, generally granular and non-cohesive, either wet or dry. Soil types GW, GP, SW and SP are included in this class.
3. Class III - Fine sand and clayey gravels, including fine sands, sand-clay mixtures, and gravel-clay mixtures. Soil types GM, GC, SM, and SC are included in this class.
4. Class IV - Silt, silty clays, and clays, including inorganic clays and silts of medium to high plasticity and liquid limits. Soil types MH, ML, CH, and CL are included in this class. These materials are not recommended for bedding, haunching, or initial backfill.
5. Class V - This class includes the organic soils, OL, OH, and PT as well as soils containing frozen earth, debris, rocks larger than 40 mm (1 1/2" in diameter), and other foreign materials. These materials are not recommended for bedding, haunching, or initial backfill.

## 3.0 EXECUTION

### 3.1 EXCAVATION

- A. Earth excavation includes the removal and disposal of pavements and other obstructions visible on the ground surface, underground structures and utilities indicated to be replaced and removed, material of any classification indicated in data on subsurface conditions and all other materials encountered that are not classified as rock excavation or unauthorized excavation.
- B. Rock excavation consists of the removal and disposal of materials encountered that cannot be excavated with a 3/4 cubic yard capacity power shovel without drilling and blasting, or continuous use of a ripper or other special equipment, except such materials that are classified as earth excavations.
1. Typical of materials classified as rock are boulders 1/2 cubic yard or more in volume, solid rock, rock in ledges, and rock-hard cementitious aggregate deposits.
  2. Intermittent drilling that may be performed to increase production and is not necessary to permit excavation of the material encountered will be classified as earth excavation.
- C. Unauthorized excavation consists of removal of materials beyond indicated elevations without the specific direction of the Owner's Representative. Unauthorized excavation shall be replaced by backfilling and compacting as specified for authorized excavations of the same classification, unless otherwise directed by the Owner's Representative.
- D. Additional excavation consists of carrying excavations deeper and replacing the excavated material as directed by the Owner's Representative if unsuitable materials are encountered at the required subgrade elevations. When excavation has reached required subgrade elevations, the Contractor shall notify the Owner's Representative, who will make an inspection of conditions.

- E. All open trenches and other excavations shall be provided with suitable barriers, signs, and lights to the extent that adequate protection is provided to the public. Obstructions, such as material piles and equipment, shall be provided with similar warning signs and lights. All barricades and obstructions shall be illuminated by means of warning lights at night. All lights used for this purpose shall be kept burning from sunset to sunrise. Materials stored upon or alongside public streets and highways shall be so placed, and the work at all times shall be so conducted, so as to cause the minimum obstruction and inconvenience to the traveling public. All barricades and light expense will be paid by the Contractor.

### **3.2 DEWATERING**

- A. Prevent surface water and subsurface or ground water from flowing into excavations and flooding the project site and surrounding area.
- B. Do not allow water to accumulate in excavations. Remove water from excavations to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to the stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey the water away from the site.
- C. Convey water removed from excavations and rain water to collector run-off areas. Do not use trench excavations for site utilities as temporary drainage ditches.
- D. Provide an adequate system to lower and control the groundwater in order to permit excavation, construction of structures and the placement of fill materials to be performed under dry conditions. Install sufficient dewatering equipment to pre-drain the waterbearing strata above and below the bottom of structure foundations, drains, sewers, and other excavations.
- E. Reduce the hydrostatic head in the waterbearing strata below structure foundations, drains, sewers, and other excavations to the extent that the water level and piezometric water levels in the construction areas are below the prevailing excavation surface at all times.
- F. Maintain piezometric water level a minimum of 1' below the excavation surface.
- G. Prior to excavation below groundwater level, place the dewatering system into operation to lower the water levels as required and then operate it continuously 24 hours a day, 7 days a week until drains, sewers and structures have been constructed, including placement of fill materials, and dewatering is no longer required.
- H. Dispose of water removed from excavations in such a manner so as to not endanger public health, property, and portions of the work under construction or completed. Dispose of water in such a manner that will cause no inconvenience to others engaged in work about the site. Provide sumps, sedimentation tanks, and other flow control devices as required by governing authorities.
- I. Provide complete standby equipment, installed and available, for immediate operation as may be required, to adequately maintain dewatering on a continuous basis in the event that any part of the system becomes inadequate or fails. In the event dewatering requirements are not satisfied due to inadequacy or failure of the dewatering system, perform such work as may be required to restore damaged structures and foundation soils at no additional expense.

### **3.3 MATERIAL STORAGE**

- A. Stockpile excavated materials classified as satisfactory soil material where directed until required for backfill or fill. Place, grade and shape stockpiles for proper drainage.

- B. Locate and retain fill materials away from edges of excavations.
- C. Dispose of excess soil material and waste materials as herein specified, and as acceptable to the Owner.

### **3.4 MOISTURE CONTROL**

- A. Where the subgrade of layer of soil material must be moisture conditioned before compaction, uniformly apply water to the surface of subgrade, or layer of soil material to prevent free water from appearing on the surface during or subsequent to compaction operations.
- B. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
  - 1. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing or pulverizing, until the moisture content is reduced to a satisfactory value.

### **3.5 GRADING**

- A. Grading shall involve the bulk cutting, moving, redistribution, compaction and shaping of soil wherein there results a change in the topography of the site. Areas upon which fills are to be placed shall be scarified prior to placement of any fill material. All fill required for the construction shall be of material not containing stones larger than six inches in diameter, or frozen earth shall be free from stocks, large roots, or other organic matter coarser than grass roots, and shall have a moisture content such that optimum compaction is obtained when properly tamped or rolled. All fill shall be placed in layers of not more than 8 inches in uncompacted thickness and compacted to a density equal to or greater than 95% of maximum laboratory dry density as determined by ASTM D-698. No frozen material shall be placed nor shall any fill material be placed upon or against frozen surfaces.
- B. The fill areas shall be compacted by a minimum of two passes of tamping with a sheeps-foot roller over the surface of each layer. Fills shall be compacted to a density equal to or greater than 95% of maximum laboratory dry density as determined by ASTM D 698.
- C. General:
  - 1. Uniformly grade areas within the limits of site grading including adjacent transition areas. Smooth finished surfaces within specified tolerances, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.
  - 2. The degree of finish required will be that ordinarily obtainable from either blade-grader or scraper operations.
- D. Ditches:
  - 1. Finish ditches to ensure proper flow and drainage. Conduct final rolling operations to produce a hard, uniform and smooth cross-section.
- E. Unpaved Areas:
  - 1. Finish areas to receive topsoil to within not more than 0.10' above or below the required subgrade elevations, compacted as specified, and free from irregular surface changes.

### **3.6 FIELD QUALITY CONTROL**

- A. The testing service, provided by the Owner, at the Owner's option, will inspect and approve subgrades and fill layers before additional construction work is performed. Otherwise, the subgrade shall be proof rolled by the Contractor and observed by the Owner's Representative. The proof shall consist of a fully loaded tandem axle truck passing over the prepared subgrade as directed by the Owner's Representative. If site conditions warrant, the unacceptable area shall be regraded then recompact to the satisfaction of the Owner's Representative.
- B. Field density tests will be performed in accordance with ASTM C 1556 (sand cone method), ASTM D 2167 (rubber balloon test), ASTM D 2922-91 (density of soil and soil-aggregates in-place by Nuclear Methods) or ASTM D 3017 (water content of soil and rock in-place by Nuclear Methods).
- C. If, in the opinion of the Owner's Representative, based on testing service reports and inspection, the subgrade or fills which have been placed are below the specified density, additional compaction and testing will be required at no additional expense to the Owner.

### **3.7 MAINTENANCE**

- A. Protection of Graded Areas:
  - 1. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
  - 2. Repair and re-establish grades in settled, eroded and rutted areas to the specified tolerances.
  - 3. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, re-shape and compact to the required density prior to further construction. Use hand tamping for recompaction over underground utilities.

### **3.8 DISPOSAL OF EXCESS AND WASTE MATERIALS**

- A. Transport all trash, debris, trees, stumps, roots, ashes, cinders, or other refuse to an approved disposal area. Excess excavated material shall be removed by the Contractor.
- B. The disposal of waste and excess excavated materials, including hauling, handling, leveling and surfacing, shall be a subsidiary obligation of the Contractor and no separate payment will be made therefore.

**END OF SECTION 312300**

**DIVISION 31 - EARTHWORK****SECTION 312313 - SUBGRADE PREPARATION****1.0 GENERAL**

- A. This work shall consist of preparing the subgrade upon which a base course is to be constructed or a surfacing placed. After a base course has been constructed, the top of the completed base course will be considered the subgrade for the next operation. In surfacing contracts involving only incidental grading, the contract shall complete Subgrade Compaction before proceeding with this work.

**2.0 PRODUCTS****3.0 EXECUTION**

- A. The subgrade shall be substantially uniform in density throughout its entire width. It shall conform to the lines, grades and typical cross sections shown on the plans, or as established by the engineer. The subgrade shall be constructed to drain surface water to the side ditches and all ditches shall be kept open by the contractor. Where hauling results in ruts or other objectionable irregularities, the contractor shall reshape and reroll the subgrade before the base or surfacing is placed. If an old traveled roadway comprises any part of the roadbed, the contractor shall loosen the compacted portions to a depth of at least 12 inches and shall reshape the roadbed.

1. All subgrades, except those for aggregate type surfacing, shall be rolled. The subgrades shall be checked after rolling and, if not at the proper elevation at all points, sufficient material shall be removed or added and compacted to bring all portions of the subgrade to the required elevation and density. The moisture content of the top 6 inches of the finished subgrade at the time the base is placed, or at the time the pavement is placed if no base is provided under the pavement, shall be not less than the minimum specified for compacting. If the moisture content has not been maintained, the subgrade shall be scarified, wet to the required moisture content and compacted. A roughly compensating maximum deviation of  $\frac{1}{4}$  inch, plus or minus, from the required elevation will be permitted on the surface of the finished subgrade.
2. Prior to laying base or setting paving forms, the subgrade shall conform to the moisture and density requirements for compaction. Soft spots and unsuitable material shall be removed to a depth not to exceed 24 inches and backfilled with approved stable material.
3. The subgrade for Portland cement concrete pavement shall be compacted, and brought to true shape by an approved subgrade machine. Any material added shall be satisfactorily incorporated and compacted. Before the concrete is placed, a true subgrade shall be shaped by an approved subgrade planer rolling on the forms and any resulting loose material on the subgrade behind the planer shall be recompacted with the 5-ton steel wheel roller. The planer shall be adjustable to produce a subgrade of the exact elevation and cross section. After all grading or planning operations have been completed, and immediately before the concrete is placed, the subgrade shall be checked with an approved heavy metal template which shall be rolled on the forms. Scratch templates with spikes or teeth will not be permitted. A taut line across the top of side forms and a ruler may be used in lieu of a template for checking the subgrade on irregular areas or variable widths. Extreme care shall be taken in forming the crown and shaping the subgrade to ensure that the specified thickness of concrete will be attained in the finished pavement.
  - a The finished subgrade at the time of paving shall be moist, but sufficiently firm to resist rutting or deforming under construction traffic.
4. No direct payment will be made for subgrade preparation.

**END OF SECTION 312313**

**DIVISION 31 - EARTHWORK****SECTION 312500 - SEDIMENTATION AND EROSION CONTROL****1.0 GENERAL****1.1 DESCRIPTION OF WORK**

- A. The contractor shall provide sediment and erosion controls for all exposed areas within the project limits, throughout the duration of the contract, including any warranty periods. These controls shall include temporary erosion control, temporary sediment control, and final erosion control.
- B. Applicable sections: 312300 Excavating, Filling and Grading

**1.2 SUBMITTALS**

- A. All submittals shall be made in accordance with applicable requirements of Division 1.
- B. Material Reports: Submit material reports for the materials supplier under this section. Reports shall include:
  - 1. Source and Location of Material.
  - 2. Name and Address of Producer.
  - 3. Type and Name of Material.

**2.0 MATERIALS****2.1 CONTROL MEASURES**

- A. Temporary Erosion Control shall include protection of all exposed surfaces within the project limits, by surface grading/rolling, surface water diversion, or by temporary cover. Alternate methods may be submitted by the contractor for review and approval by the engineer.
- B. Temporary Sediment Control shall include silt fence, silt dike, straw bale dikes, temporary sediment checks, etc. Sediment controls shall be placed as required to maintain all sediment within the project boundaries. Sediment controls shall be inspected and cleaned/maintained as necessary to maintain function, following each major runoff event. All temporary sediment controls shall be removed and all surfaces protected upon project completion.
- C. Permanent Sediment Controls, if required, shall be as shown on the drawings. Permanent sediment controls shall be constructed and maintained by the Contractor, until accepted at project completion.
- D. Sediment Control shall include silt fence, silt dike, straw bale dikes, temporary sediment checks, etc. Sediment controls shall be placed as required to maintain all sediment within the project boundaries. Sediment controls shall be inspected and cleaned/maintained as necessary to maintain function, following each major runoff event. All temporary sediment controls shall be removed and all surfaces protected upon project completion. Permanent sediment controls shall be constructed and maintained until accepted at project completion. Permanent sediment controls, if required, shall be as shown on the drawings.

**2.0 PROCEDURE****3.1 CONSTRUCTION REQUIREMENTS**

- A. The Contractor shall install control measures as shown on the plans and as necessary to limit erosion and prevent sediment from leaving the project site. The control measures shall be built in accordance with the project plans, specification and detail drawing, as well as the use of good construction practices.

**END OF SECTION 312500**

**DIVISION 32 – EXTERIOR IMPROVEMENTS****SECTION 320116.71 - MILLING AND PAVEMENT PREPARATION****1.0 GENERAL****1.1 SCOPE OF WORK**

- A. Removal of surface or a portion of an asphaltic concrete surface.
- B. Drawings and General Provisions of contract, including General and Special Conditions, apply to this section.

**1.2 WORK INCLUDED**

- A. The Contractor shall furnish milling equipment to mill in-place, and broom excess millings from pavement profile as shown on the drawings and described in the specifications. Any and all deviations to the cross slope or depth of milling operation must be approved by the Owner's Representative.

**2.0 PRODUCTS****2.1 EQUIPMENT**

- A. Equipment for profiling and removing bituminous pavement surface shall be a power operated, self-propelled planing machine or grinder. The machine shall be capable of removing a 2" thickness or specified depth, and provide a uniform profile and cross slope.
- B. The equipment shall be self-propelled with sufficient power, traction and stability (rigid suspension, non-pneumatic tire) to maintain accurate depth of cut and slope.
- C. The equipment shall be capable of accurately, and automatically, establishing profile grades with  $\pm 1/8$  inch along each edge of the machine. Grade referencing shall be from the existing pavement, by means of a ski or matching shoe, or from an independent grade control. The equipment shall be controlled by an automatic system for controlling grade elevation and cross slope at a given rate.
- D. The machine shall be equipped with water spray to control dust and other particulate matter created by the cutting action.
- E. The machine shall have an effective means of removing cuttings from the pavement and discharging them into a hauling-unit, all in one operation as the pavement is milled.

**3.0 EXECUTION****3.1 PREPARATION**

- A. Setup signage and other safety and traffic control devices.
- B. Coldmilling shall only begin when the contractor is ready to immediately follow-up with the resurfacing operation.
- C. The milled surface shall not be exposed to traffic for an extended period before being resurfaced. If the milled surface begins to ravel under traffic, or other problems resulting from the milling occur,

restrictions on the amount of time the milled area may be left open will be determined by the Owner's Representative.

### 3.2 MILLING

- A. The pavement surface shall be removed to the depth as noted on the drawings. The width, grade and cross section shall conform the drawings, or as approved by the Owner's Representative.
- B. Automatically control grade leveling and slope. Provide control to produce a uniform surface to the established grade and a cross slope conforming to the requirements of the typical section.
- C. Remove and plane asphalt surface around and over manholes, utility valves and drainage appurtenances.
  - 1. Damage to manholes, valves, or drainage appurtenances by the removal and planing operation shall be the responsibility of the Contractor to correct.
  - 2. Place a temporary wedge of bituminous material at a slope no steeper than one inch in 4 feet around the manholes, utility valves and other appurtenances in the driving lanes.
  - 3. Remove bituminous wedges prior to resurfacing.
- D. Existing material shall be removed if necessary to maintain surface drainage after the milling operation.
- E. Exercise care not to damage existing concrete pavement.
- F. Loose material on roadway surface, not picked up by the milling machine, shall be swept and picked up immediately behind the milling operation.
  - 1. In areas with earth or stabilized aggregate shoulders, small amounts of loose material, not picked up by the milling machine, may be swept to the shoulders.
- G. Milled material is the property of the Contractor. Dispose of material offsite unless otherwise provided in the contract.
- H. Cost of replacement milling teeth shall be borne by the Contractor.
- I. Cost of remobilization due to equipment failure shall be borne by the Contractor.

### 3.3 FIELD QUALITY CONTROL

- A. For pavement surfaces, the surface of each layer shall be substantially free from waves or irregularities.
- B. The final surface, including pavement repair limits, shall not vary from a 10-foot straightedge, applied parallel to the centerline, by more than 1/8 inch.
- C. Spelled areas shall be repaired using an approved plant mix bituminous pavement commercial mix.
- D. The texture produced for the finished pavement shall be a grid surface with discontinuous longitudinal striations.
- E. The milling shall produce a serviceable riding texture with no objectionable noise level.

REPAIR PARKING LOTS & DRIVEWAYS

R1905-01

**END OF SECTION 320116.17**

MILLING AND PAVEMENT PREPARATION

320116.71-3

## **DIVISION 32 – EXTERIOR IMPROVEMENTS**

### **SECTION 320117.61 - BITUMINOUS PAVEMENT CRACK SEALING**

#### **1.0 GENERAL**

##### **1.1 SCOPE OF WORK**

- A. Sealing cracks and joints in bituminous pavements.
- B. Drawings and General Provisions of contract, including General and Special Conditions, apply to this section.

##### **1.2 WORK INCLUDED**

- A. Work under this section includes cleaning and filling of longitudinal and transverse cracks, greater than 1” in width, in asphaltic pavements prior to overlay, seal, or chip and seal.
- B. Areas with block or alligator cracks, that will be wedged or resurfaced, do not require crack sealing.

#### **2.0 PRODUCTS**

##### **2.1 MATERIALS**

- A. Crack filler shall be Trumball 3405 Rubber Asphalt Joint Sealer or an approved equal, and shall conform to AASHTO 173 and/or ASTM D-3405 or D-1190.
- B. Crack sealing must be compatible with the surface sealing material.
- C. Cold type crack sealing material will not be accepted as an equal.

#### **3.0 EXECUTION**

##### **3.1 EXECUTION**

- A. Clean material out of existing cracks by mechanical hand routing or a stiff bristle broom and compressed air.
  - 1. Use a sharp pick or other tool as necessary to remove weeds and other debris.
  - 2. If compressed air is used, do not connect to a port with automatic oiling.
  - 3. Clean immediately before the sealing operation. Maintain in a clean condition until sealed.
- B. Cracks greater than 1” in width:
  - 1. Remove foreign and loose material to the granular subgrade.
  - 2. Mill 1 ½ inches in depth, 6 inches wide and wedge in a BP-1 asphalt wedge course.
  - 3. For cracks greater than 1 1/2” deep, use sand to fill the crack up to the 1 1/2” depth.

C. Heat crack filling material in accordance with the manufacturer's recommendations.

**END OF SECTION 320117.61**

**DIVISION 32 – EXTERIOR IMPROVEMENTS****SECTION 321113 - SUBGRADE FAILED AREAS****1.0 GENERAL****1.1 SCOPE OF WORK**

- A. Replacement or patching subgrade failed areas or sections of flexible pavements.
- B. Drawings and General Provisions of contract, including General and Special Conditions, apply to this section.

**1.2 WORK INCLUDED**

- A. Work under this section includes removal of surface and failed subgrade, placement and recompaction of subgrade, and placement of hot plant mix bituminous surface to repair areas as noted on the drawings.

**2.0 PRODUCTS****2.1 MATERIALS**

- A. Asphalt: BP-1, Plant Mix Bituminous Surface shall be used for pavement repair.
- B. Granular Base shall conform to MODOT Type 5 Aggregate.
- C. In lieu of granular base, full depth asphalt patch may be utilized.

**3.0 EXECUTION****3.1 PREPARATION**

- A. Install signage and other safety and traffic control devices.

**3.2 REPAIR PROCEDURE**

- A. Reshape hole by cutting failed pavement area into square or rectangular shape with a pavement saw.
  - 1. Cut side faces vertically.
  - 2. Excavate vertically to solid material and around hole to sound pavement.
  - 3. Proceed with cutting and removal from the failure outward to sound pavement.
- B. Remove all loose material and thoroughly sweep the excavated area clean of mud and standing water.
- C. Fill hole and compact material in lifts no more than 3” thick.
- D. Place asphalt.
  - 1. Final uncompacted lift should be ½” to 1” above abutting pavement. Surface shall match the abutting pavement after compaction.

2. Thoroughly compact each lift with a plate compactor or roller, generally 15-20 passes with a vibratory roller is necessary to insure good compaction.
3. Hand tamp should be used only for small holes (less than 1 sf).

E. Clean up area. Do not leave excess fill or removal material on the pavement.

F. Remove traffic control signs and barricades.

**END OF SECTION 321113**

**DIVISION 32 – EXTERIOR IMPROVEMENTS****SECTION 321123 - AGGREGATE BASE COURSE****1.0 GENERAL****1.1 DESCRIPTION OF WORK**

- A. Work covered under this section consists of furnishing and placing one or more courses of crushed stone aggregate on prepared subgrade.
- B. Construction of aggregate base course shall conform to the typical sections, lines, grades and thicknesses as shown on the drawings. Type 5 aggregate base shall conform to the gradation specified in the most current edition of the Specifications for Highway Construction.
- C. Applicable Sections: 312300 Excavating, Filling, and Grading

**1.2 TESTING AND INSPECTION**

- A. The aggregate base shall be proof rolled by the contractor and observed by the Owner's Representative. The proof roll shall consist of a fully loaded tandem axle truck passing over the prepared subgrade as directed by the Owner's Representative. If site conditions warrant, the unacceptable area shall be regraded then re-compacted to the satisfaction of the Owner's Representative.
  - 1. The Owner may hire a testing lab to perform compaction testing on the project. If in the opinion of the Owner's Representative, based on testing service reports and inspection, the subgrade or fills which have been placed are below the specified density, additional compaction and testing will be required.
- B. Referenced standards of the American Society for Testing of Materials (ASTM) apply to this section.

**2.0 MATERIALS**

- A. Aggregate shall be crushed stone, and shall be the angular fragments resulting from crushing by mechanical means of calcareous or dolomitic limestone from undisturbed, consolidated deposits.
- B. The crushed stone shall contain not more than 15 percent deleterious rock and shale. Sand may be added to the crushed stone only for the purpose of reducing the plasticity index of the fraction passing the No. 40 sieve in the finished product. Any sand, silt, and clay, and any deleterious rock and shale shall be uniformly distributed throughout the mass.
- C. Gradation: The aggregates shall conform to the following gradation requirements:
 

	<u>Percent</u>
1. Passing 1 ½ Inch Sieve	100
1. Passing 1 Inch Sieve	90 – 100
2. Passing 1/2 Inch Sieve	60 – 90
3. Passing No. 4 Sieve	30 – 56
4. Passing No. 16 Sieve	10 – 40
5. Passing No. 200 Sieve	4 – 12
- D. Quality: The aggregate base material shall be from an approved source.

### **3.0 CONSTRUCTION REQUIREMENTS**

#### **3.1 INSTALLATION**

##### **A. Inspection:**

1. Examine the areas and conditions under which the aggregate base course is to be placed for conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.
2. The subgrade shall be compacted, graded and cut to proper lines, grades, and cross-sections to the satisfaction of the Engineer before placing of the base course.
3. Subgrade shall be protected from cold weather, base course shall not be placed on frozen subgrade or when the atmospheric temperature is less than 35 degrees F.

##### **B. Placing Base Course:**

1. Contractor shall be responsible for maintaining lines and grades including crown and cross-slope in base course.
2. The Contractor shall be responsible for placing the correct quantity of base material to construct a base of the required finish thickness.
3. The thickness of the compacted base course shall be as shown on the drawings.
4. The maximum compacted thickness of any one layer shall not exceed six (6) inches.
  - a) When specified compacted depth of base course exceeds 6 inches, the base course shall be constructed in two or more layers of approximately equal thickness.
  - b) No single layer shall be less than 3 inches in thickness when compacted.
5. The mixture shall be uniformly spread in successive layers of such depth that when compacted, the base will approximate the thickness specified.
6. Immediately before spreading the aggregate, the subgrade shall be wetted as directed by the Owner's Representative.
7. The base material shall be delivered to the site for placement with the material thoroughly mixed with water to approximate moisture content for desired compaction.

##### **C. Compaction:**

1. Maintain optimum moisture content for compacting base course material during placement shaping and compaction operations.
2. Each layer shall be compacted to not less than 95% maximum dry density per ASTM D698.

##### **D. Grading:**

1. Base course material after compaction shall be cut to proper lines, grades, sections and cross-slopes as shown on the drawings.

2. Tolerances shall be plus or minus .1 of a foot.
3. Compacted areas that are below .1 of a foot of grade, additional material shall be brought in place, shaped and compacted to attain the proper thickness and subbase elevation.

E. Maintenance:

1. Protect newly graded areas from traffic and erosion.
2. Repair and re-establish grades in settled, eroded and rutted areas to specified tolerances.
3. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape and compact to required density prior to further construction.

F. Remove excess material, trash, debris and waste materials from the site.

**END OF SECTION 321123**

**DIVISION 32 – EXTERIOR IMPROVEMENTS****SECTION 321213.13 - TACK COAT****1.0 GENERAL****1.1 DESCRIPTION**

- A. This work shall consist of preparing and treating an existing bituminous or concrete surface with bituminous material, and blotter material if required, in accordance with these specifications, as shown on the plans or as directed by the engineer.

**1.2 EQUIPMENT**

- A. The contractor may provide a system for heating and applying bituminous material and for applying blotter material. The system shall be designed, equipped, maintained and operated such that liquid asphalt at even heat may be applied uniformly on variable widths of surface up to 15 feet at readily determined controlled rates of 0.5 gallon per square yard with uniform pressure and with an allowable variation from any specified rate not to exceed 0.02 gallon per square yard. The system shall include a calibrated tank and a thermometer for measuring temperature of tank contents. The system shall be equipped with instrumentation that continuously verifies application rates. The calibration of the system shall be approved by the engineer prior to use, and the contractor shall furnish all equipment, material and assistance necessary if calibration is required.

**2.0 MATERIALS**

- A. Emulsified asphalt for tack coat shall be SS-1, SS-1h, CSS-1 diluted one part water to one part emulsified asphalt. Before dilution the emulsified asphalt shall comply with the requirements of AASHTO Specification M140 or M 208 (ASTM Specification D 977 or D2397)

**3.0 CONSTRUCTION REQUIREMENTS**

- A. The existing surface shall be free of all dust, loose material, grease or other foreign material at the time the tack is applied.
- B. Asphalt emulsion shall be applied uniformly with a pressure distributor at the rate of 0.5 gallon per square yard. Water may be added to the asphalt emulsion and mixed therewith in such a proportion that the resulting mixture will contain no more than 50 percent of added water. The application of the resulting mixture shall be such that the original emulsion will be spread at the specified rate. The asphalt emulsion shall be heated at the time of application to a temperature in accordance with the following table and shall be properly cured and cleaned of all dirt and surplus sand before the next course is placed:

(See table next page)

Bituminous Material	Temperature, Degrees Fahrenheit (Celsius)			
	Spraying		Mixing	
	Min	Max	Min	Max
Asphalt Binder				
PG 46-28	260 (125)	325 (165)	---	---
All Other Grades	285 (140)	350 (175)	275 (135)	350 (175)
<b>Liquid Asphalt RC-MC</b>				
<b>Grade</b>				
30	70 (20)	150 (65)	50 (10)	110 (45)
70	100 (40)	180 (80)	90 (30)	140 (60)
250	150 (65)	220 (105)	130 (55)	170 (75)
800	180 (80)	260 (125)	170 (75)	210 (100)
3000	210 (100)	290 (145)	200 (95)	240 (115)
<b>Asphalt Emulsions</b>				
RS-1	70 (20)	140 (60)	---	---
RS-2	125 (50)	185 (85)	---	---
SS-1	70 (20)	160 (70)	70 (20)	160 (70)
SS-1h	70 (20)	160 (70)	70 (20)	160 (70)
CRS-1	125 (50)	185 (85)	---	---
CRS-2	125 (50)	185 (85)	---	---
CSS-1	70 (20)	160 (70)	70 (20)	160 (70)
CSS-1h	70 (20)	160 (70)	70 (20)	160 (70)
EA-90P	130 (55)	180 (80)	---	---
CRS-2P	130 (55)	180 (80)	---	---

- C. The tack coat shall be applied in such a manner as to cause the least inconvenience to traffic. All exposed tack coat shall be covered with sand or bituminous mixture prior to opening to traffic. Limestone or Dolomite sands shall not be used.

**END OF SECTION 321213.13**

## **DIVISION 32 – EXTERIOR IMPROVEMENTS**

### **SECTION 321216.13.A1 - PLANT MIX BITUMINOUS PAVEMENT (PMB)**

#### **1.0 GENERAL**

- A. The Contractor shall furnish all labor, materials and equipment necessary to complete all Plant Mix Bituminous (PMB) paving indicated on the drawings and as specified herein.

#### **1.1 WARRANTY**

- A. Warranty to be against settlement, low spots, lift separation (delamination), shoving, channeling, or any other surface irregularities which does not provide a smooth driving surface. Make any repairs necessary during warranty period to maintain paving in perfect condition.

#### **1.2 PAVING QUALITY REQUIREMENTS**

- A. All paving shall conform to the current edition Missouri Department of Transportation (MoDOT) Specifications and Asphalt Institute Standards, Model Construction Specifications for Asphalt Concrete, Specification Series No. 1.

#### **1.3 EQUIPMENT**

- A. The equipment shall include: (1) one or more Plant Mix Bituminous (PMB) plants designed to produce a uniform PMB within the job-mix tolerances; (2) one or more self-powered pavers that are capable of spreading the PMB to the thickness and width specified, true to the line and grade shown on the plans; (3) enough smooth metal-bedded haul trucks with covers, when required, to ensure orderly and continuous paving operations; (4) a pressure distributor that is capable of applying tack coat and prime material uniformly without atomization or non-uniform "zebra-stripping", (5) one or more steel-wheeled, pneumatic-tired, or vibratory rollers capable of attaining the required density and smoothness; (6) a power broom or a power blower or both; (7) hand tools necessary to complete the job. Other equipment may be used in addition to, or in lieu of, the specified equipment when approved by the Engineer.

#### **1.4 METHODS OF TESTING PLANT MIX BITUMINOUS PAVEMENT (PMB)**

- A. Samples of materials will be tested for the requirements of Section B by the applicable methods specified in this section. The materials shall not be used until approved by the Owner's Representative.
- B. Plant Mix Bituminous (PMB) materials will be tested by the batch plant using methods of test of the American Association of State Highway and Transportation Officials (AASHTO) designated in the applicable specification. If an AASHTO method of test procedure is not available, the equivalent American Society for Testing and Materials (ASTM) method will be used.
- C. Mineral aggregates will be tested by one or more of the following methods of test of the American Association of State Highway and Transportation Officials (AASHTO) or the American Society for Testing and Materials (ASTM).
- D. Results of single extraction and sieve tests shall not be used as the sole basis for acceptance or rejection of the PMB. Any variation from the job-mix formula in the grading of the aggregate or in the bituminous content greater than the tolerances shown above shall be investigated and the conditions causing the variation corrected.

Characteristic	Method of Test	
	AASHTO	ASTM
Amount of Material Finer than 75 µm (No. 200)		
Sieve in Aggregate	T 11	C 117
Unit Weight of Aggregate	T 19	C 29
Sieve Analysis, Fine and Coarse Aggregates	T 27	C 136
Sieve Analysis of Mineral Filler	T 37	D 546
Abrasion of Coarse Aggregate, Los Angeles Machine	T 96	D 131
Plastic Fines in Graded Aggregates and Soils by use of the Sand Equivalent Test	T176	D2419

- E. The PMB will be tested for asphalt content by Method of Test for Quantitative Extraction of Bitumen from Bituminous Paving Mixtures, AASHTO Designation T 164 (ASTM Designation D 2172). The PMB will be tested for compliance with aggregate grading requirements by Method of Test for Mechanical Analysis of Extracted Aggregate, AASHTO Designation T 30.
- F. If the PMB is produced in a mixing plant having automatic controls and a print-out system, and the controls are in proper calibration, asphalt content compliance will be determined from recorded data. Hot bin analysis together with batch weight read-out data will be used to determine composition compliance.

### 1.5 PLACEMENT LIMITATIONS

- A. PMB shall be placed only when the specified density can be achieved. Precautions shall be taken at all times to compact the PMB.

### 1.6 WEATHER LIMITATIONS

- A. PMB shall not be placed (1) when either the air temperature or the temperature of the surface on which the mixture is to be placed is below 50 F (10 C) for the surface course or below 40 F (5 C) for subsurface courses, (2) on any wet or frozen surface, (3) when weather conditions prevent the proper handling or finishing of the mixture, or (4) between December 1 and March 1 except when authorized by the Engineer. The Contractor shall conduct operations in such a manner that all binder course asphaltic concrete is covered with surface course asphaltic concrete prior to December 1. Temperatures are to be obtained in accordance with MoDOT Test Method T20.

### 1.7 TRAFFIC CONTROL

- A. Traffic shall be directed through the project with such signs, barricades, devices, flagmen, and pilot vehicles as may be necessary to provide maximum safety for the public and the workmen with minimum interruption of the work.

### 1.8 SAFETY

- A. The Contractor shall be solely responsible for safety precautions at all times during the progress of the work. As appropriate, workmen shall be furnished with hard hats, safety shoes, sturdy gloves, respirators, and any other safety apparel that will reduce the possibility of accidents. The Contractor shall insure that all Occupational Safety and Health Act requirements are observed.

## **2.0 MATERIALS**

### **2.1 PLANT MIX BITUMINOUS CONCRETE**

- A. The PMB shall be Plant Mixed Bituminous Pavement BP-1 or BP-2, used for paving and shall conform to the most current edition of the Missouri Department of Transportation (MoDOT) Specifications; Section 401.
- B. Emulsified asphalt for tack coat shall be SS-1, SS-1h, CSS-1, or CSS-1h diluted one part water to one part emulsified asphalt. Before dilution the emulsified asphalt shall comply with the requirements of AASHTO Specification M 140 or M 208 (ASTM Specification D 977 or D 2397).

### **2.2 MINERAL AGGREGATE**

- A. Mineral aggregate shall be crushed stone, crushed slag, crushed gravel, stone, or slag screening, sand, mineral filler, or a combination of two or more of these materials. Other mineral aggregates, such as uncrushed gravel or sand, may be specified for base course PMB if local experience has demonstrated their ability to produce satisfactory PMB.
- B. Coarse and final aggregates shall comply with the quality requirements, except soundness, of ASTM Designation D 692 and ASTM Designation D 1073 respectively. Coarse aggregate failing to comply with abrasion requirements may be used if experience has demonstrated it to be satisfactory.
- C. Mineral filler shall comply with ASTM Designation D 242.
- D. Combinations of aggregates having a history of polishing shall not be used in surface courses.

### **2.3 BP-1 or BP-2: The Engineer will approve a job-mix formula for each PMB.**

- A. Mineral aggregate and bituminous combined in a mixing plant to meet the specifications set forth by MoDOT for the specified type of grade.

### **2.4 PREPARING THE PLANT MIX BITUMINOUS (PMB)**

- A. The PMB shall be heated at the mixing plant to a temperature at which it can be applied uniformly to the aggregate.
- B. Coarse and fine aggregates shall be stored separately at the mixing plant in a manner that will prevent intermingling. Stockpiles shall be built in a manner that will prevent segregation of aggregate sizes. If the aggregate tends to segregate during handling it shall be supplied and stockpiled in two or more sizes.
- C. When it is necessary to blend aggregates from one or more sources to produce the combined gradation, each source or size of aggregate shall be stockpiled individually. Aggregate from the individual stockpiles shall be fed through separate bins to the cold elevator feeders. They shall not be blended in the stockpile.
- D. Cold aggregates shall be fed carefully to the plant so that surpluses and shortages will not occur and cause breaks in the continuous operation.
- E. The aggregate shall be dried and heated to provide a paving mixture temperature in conformance with placing conditions, but not to exceed 325°F.
- F. Heated and dried aggregates shall be screened and stored in sizes that may easily be recombined into a gradation meeting the requirements of the job-mix formula.

- G. The heated and dried aggregates shall not contain enough moisture to cause the PMB to slump, or the aggregate to segregate during hauling and placing.
- H. Mixing time shall be the shortest time that will produce a satisfactory PMB. Prolonged exposure to air and heat in the pugmill hardens the asphalt film on the aggregate. Mixing time, then, should be shortest time required to obtain uniform distribution of aggregate sizes and thorough coating of aggregate particles with asphalt.
- I. For batch plants wet mixing time shall not exceed 50 seconds.
- J. For continuous mix plants, the mixing time will be computed by the following formula:

$$\text{Mixing time, seconds} = \frac{\text{Pugmill dead capacity, kg (lb.)}}{\text{(a) Pugmill output, kg/s (lb/s)}}$$

- K. Mixing time shall not exceed 60 seconds.

## **2.5 PREPARING AREA TO BE PAVED**

- A. The area to be paved shall be substantially true to line and grade. It shall be dry, firm, and properly prepared before paving operations begin. All loose dirt and foreign material shall be removed.

## **2.6 PLACEMENT OF PLANT MIX BITUMINOUS TYPE BP-1 or BP-2**

- A. The BP-1 or BP-2 surface course shall be placed while at a temperature of not less than 275°F, but not more than 330°F. Machine laid, the BP-1 or BP-2 pavement will be placed uniformly without intermittent operation of the paver. Leveling and spot welding may be required to obtain a continuous smooth surface. The final compaction shall be uniform and thorough, accomplished by using a roller as specified by the Asphalt Institute Standards and Missouri Highway Commission Standard Specifications.
- B. BP-1 or BP-2 shall not be placed if the un-compacted thickness of the mat is less than 3" when either the air temperature or the temperature of the surface to be paved is below 50°F, on any wet or frozen surface, and when weather conditions prevent the proper handling or finishing of the BP-1 or BP-2.
- C. BP-1 or BP-2 shall be compacted immediately after placing. Using steel-wheeled tandem roller, steel three-wheeled roller, vibrating roller or a pneumatic tired roller for initial, intermediate, and final rolling. Final rolling shall eliminate marks from previous rolling. Use vibrating plate compactor or hand tamper to compact areas too small for a roller. Compacted base and surface courses shall have a density equal to or greater than 95% of a laboratory specimen prepared by the method for BP-1 or BP-2 specified.
- D. The Contractor shall perform all the tests required by the Owner's Representative to insure that the BP-1 or BP-2 pavement is constructed of proper thickness, and density.

## **2.7 COMPACTING THE PLANT MIX BITUMINOUS (PMB)**

- A. The PMB shall be compacted immediately after placing. Initial rolling with a steel-wheeled tandem roller, steel three-wheeled roller, vibratory roller, or a pneumatic-tired roller shall follow the paver as closely as possible. If needed, intermediate rolling with a pneumatic-tired roller shall be done immediately behind the initial rolling. Final rolling shall eliminate marks from previous rolling. In areas too small for the roller, a vibrating plate compactor or a hand tamper shall be used to achieve thorough compaction.
- B. When placing PMB adjacent to a concrete curb and gutter, each lift shall butt-joint tightly against the concrete.

### **3.0 CONSTRUCTION REQUIREMENTS**

#### **3.1 PAVING TECHNIQUE**

- A. The PMB shall be placed and compacted at a minimum depth as directed by MECO's Resident Inspector, graded and compacted to the correct grade. The PMB shall be uniformly compacted by rolling as specified by Asphalt Institute Standards and Missouri Department of Transportation (MoDOT) Standard Specifications.
- B. Compaction. After the PMB has been spread, struck off, and surface irregularities adjusted, it shall be thoroughly and uniformly compacted by rolling. Rolling shall begin as soon after spreading the PMB as it will bear the weight of the roller without undue displacement. The type and number of rollers furnished shall be sufficient to obtain the required compaction while the PMB is in a workable condition. A pneumatic tire roller shall be used as the initial or intermediate roller on any course placed as a wedge or leveling course. All rolling shall be completed prior to the surface temperature of the PMB decreasing to 175°F.
1. A dual drum vibratory roller of a type specifically designed for the compaction of PMB may be used for initial rolling. A dual drum vibratory roller meeting the requirements for a steel wheel roller and operating in the static mode may be used as the finish roller. Except for projects involving small quantities of PMB, a single vibratory roller shall not be used as both the initial roller and final roller. The roller shall be equipped with a dual amplitude system and shall have a minimum frequency of 1500 vibrations per minute. The roller shall also be equipped with a speedometer that accurately indicates roller speed in maximum increments of either 2 mile per hour or 50 feet per minute. The roller controls shall include a device that prevents the roller from traveling in excess of 22 miles per hour when the roller is in a vibratory mode. If satisfactory compaction is not being obtained, the contractor shall cease using the vibratory roller.
  2. Rollers shall move at a slow but uniform speed with the drive roll or wheels nearest the paver. Rolling shall begin at the sides and proceed longitudinally parallel to the road center line, each trip overlapping one half the roller width, gradually progressing to the crown of the road. When paving in echelon or abutting a previously placed lane, the longitudinal joint shall be rolled first followed by the regular rolling procedure. On super-elevated curves the rolling shall begin at the low side and progress to the high side by overlapping of longitudinal trips parallel to the center line. Alternate trips of the roller shall be terminated in steps to prevent the formation of surface irregularities. The alternate stops shall be stepped in such manner that any excess water will drain quickly. Lateral or diagonal rolling may be permitted to remove high spots, provided the rolling is done in such manner and at such time that shoving or cracking will not result.
  3. Any displacement occurring as a result of starting, stopping, or changing direction of a roller, or from other causes, shall be avoided. Areas of displacement shall be corrected at once by the use of rakes and addition of fresh PMB when required. Care shall be exercised in rolling not to displace the line and grade of the edges of the asphaltic concrete. If necessary, to prevent adhesion of the PMB to the rollers, the wheels and rolls shall be kept properly moistened with water or water mixed with very small quantities of detergent or other approved material. Excess liquid will not be permitted. Diesel fuel, fuel oil, or other detrimental products shall not be used as wetting agents. Along forms, curbs, headers, walls, and other places not accessible to the roller, the PMB shall be thoroughly compacted with hot hand tampers, smoothing irons, or with mechanical tampers. A trench roller shall be used on depressed areas inaccessible to regular width equipment.
  4. Any PMB that becomes loose and broken, mixed with dirt, or is in any way defective shall be removed and replaced with fresh, hot PMB, which shall be compacted to conform with the surrounding area. Any area showing an excess or deficiency of asphalt cement shall be removed and replaced.

5. Except as otherwise specified, rolling shall be continued until all roller marks are eliminated and a minimum density of 95 percent of a laboratory specimen made in the proportions of the job-mix formula in accordance with AASHTO T 245, is attained. The applicable density will be determined by the engineer to correspond with the mix design test method. Density will be determined by nuclear methods in accordance with MoDOT Test Method T41 or by a specific gravity method.
6. Joints. Transverse joints shall be formed by any method that will produce a dense, vertical section for use when laying is resumed. The joint formed when the fresh PMB is placed shall be dense, well sealed, and the grade, line, and surface texture of the succeeding surface shall conform to that of the joined surface. If deemed necessary by the engineer, the transverse joint shall be painted with a light coating of asphaltic material. Hand manipulation of the PMB is to be minimized to avoid segregation of the surface texture. Placing of PMB shall be as nearly continuous as possible and the roller shall not pass over the unprotected end unless laying of additional PMB is to be delayed for sufficient time to permit the PMB to become chilled.
7. Longitudinal joints shall be formed by the use of an edging plate fixed on both sides of the finishing machine. These plates shall be adjustable and the outside plate shall be set at an angle of approximately 45 degrees with the surface of the roadbed and in a position that will lightly compact the PMB. The inside plate, or that placing material for the longitudinal joint, shall be normal to the roadbed. When placing the first lane, if the mixture at the longitudinal joint tends to slump, it shall be set up to a vertical edge by light compaction with the back of a rake. Care shall be taken to obtain a well bonded and sealed longitudinal joint by placing the PMB in a manner insuring maximum compaction at this point. If it is deemed necessary by the engineer in properly sealing the longitudinal joint, a light coating of asphaltic material shall be applied to the exposed edge before the joint is made. Irregularities in the outside edge alignment shall be corrected by removing or adding PMB before the surface is compacted.

C. Surface Tolerances: The finished courses shall have the nominal thickness shown on the plans and shall be substantially free from waves or irregularities. The final riding surface, except on medians and similar areas, shoulders, and temporary bypasses shall not vary from a 10-foot straightedge, applied parallel to the centerline, by more than 1/8 inch. At transverse construction joints, the surface of all other layers shall not vary from the 10-foot straightedge by more than 1/4 inch. Surfaces exceeding these tolerances shall be re-rolled, replaced, or otherwise corrected in a manner satisfactory to the Owner's Representative.

1. The surface of the PMB after compaction shall be smooth and true to the established crown and grade. Any PMB showing an excess of asphalt cement or that becomes loose and broken, mixed with dirt, or is in any way defective shall be removed and replaced with satisfactory PMB, which shall be immediately compacted to conform with the surrounding area.

### **3.2 CLEAN-UP**

- A. Upon completion of paving work, remove all debris resulting from paving operations, clean or repair any adjacent work damaged by paving operations and leave entire premises in neat and clean conditions.

### **3.3 SHOP DRAWINGS**

- A. If the Contractor feels it is advisable due to weather or site conditions to use a PMB or application procedure other than the specified one, he shall submit the alternate PMB design in writing. He shall receive the Owner's Representative approval prior to commencing of the paving operations.

**END OF SECTION 321216.13.A1**

**DIVISION 32 – EXTERIOR IMPROVEMENTS****SECTION 321600 - WALKS AND CURBS****1.0 GENERAL**

- A. The Contractor shall furnish all labor, materials, tools, equipment and services necessary and incidental to complete all concrete walks and curbs.
- B. All sidewalk and curbs removed on this project shall be replaced with new sidewalk and curbs of the same width and thickness as the original or as shown on the plans.

**2.0 PRODUCTS**

- A. Concrete for walks and curbs shall comply with ADA requirements.

**3.0 EXECUTION**

- A. All concrete walks and curbs shall be constructed in accordance with this specification.
- B. Slopes: Provide 1/4" per foot crown or cross slope unless indicated otherwise. Make adjustments in slopes at intersections as necessary or directed to provide proper drainage.
- C. Finish: Tamp and screen the concrete true to grade and section, bring sufficient mortar to the surface for finishing and give a wood or carpet float finish, provided that where the grade exceeds 6% the surface shall be given a belted or stiff broomed finish. Round all edges including those along expansion joints and grooves to a 1/4" radius.
- D. Expansion Joints: Provide 1/2" transverse expansion joints, with premolded filler, not more than 24' apart, and also at walk intersection walk abutments, buildings, platforms or other fixed structures. Expansion joints shall be at right angles to the slab and extend the full depth thereof. The premolded filler shall extend to within 1/4" of the surface.
- E. Grooves in Walks: Between expansion joints, cut grooves 1/8" to 1/4" wide and at least 1" deep with transverse grooves with a spacing approximately equal to the walk width, but not less than 4'.
- F. Concrete curbs shall be constructed as detailed on the drawings.

**END OF SECTION 321600**

**DIVISION 32 - EXTERIOR IMPROVEMENTS****SECTION 321713 - PARKING BLOCKS****1.0 GENERAL****1.1 SCOPE OF WORK**

- A. Furnishing and installing Parking Blocks (Wheel Stops) in conformity with the drawings.
- B. Drawings and General Provisions of contract, including General and Special Conditions, apply to this section.

**1.2 SUBMITTALS**

- A. Manufacturer's specifications and/or catalog data listing geometry and materials for new Parking Blocks.
- B. Other information as the Owner's Representative may request.

**2.0 PRODUCTS****2.1 MATERIALS**

- A. New Parking Blocks shall be pre-formed rubber conforming to the following:
  - 1. Embed a minimum of two (2), #4 bars longitudinally in each unit. Drill or sleeve for two ½" rebar or pipe.
  - 2. Size:
    - a) Nominal Size: 4 inches high, 6 inches wide at base, and 6 feet long.
    - b) Profile: Manufacturer's Standard having a rectangular cross section with sloped vertical faces and square ends.

**2.2 ANCHOR BARS**

- A. Anchor bars shall be ½" rebar or pipe and shall be 2' – 0" in length.

**3.0 EXECUTION****3.1 GENERAL**

- A. Care will be taken in removal, handling, storing, and resetting of parking blocks.
- B. The Contractor at no extra cost to the Owner shall replace parking blocks, damaged or broken in removal or reinstallation.
- C. Parking Blocks removed and not noted to be reset, shall be removed from the site by the Contractor.

**3.2 INSTALLATION**

- A. Installation of Parking Blocks shall be in accordance with the drawings.

**END OF SECTION 321713**

**DIVISION 32 – EXTERIOR IMPROVEMENTS****SECTION 321723 - PAVEMENT MARKINGS****1.0 GENERAL****1.1 SCOPE OF WORK**

- A. Painting pavement marking of all types.
- B. Drawings and General Provisions of contract, including General and Special Conditions, apply to this section.

**1.2 WORK INCLUDED**

- A. Cleaning and preparation of surfaces to receive paint striping with a high pressure water sprayer. Cleaning shall be limited to only those surfaces to be striped.
- B. Paint in parking lines, safety zones, handicap zones, loading zones, no parking zones, in parking lots indicated on drawings.
- C. Protecting adjacent surfaces from paint drips, spatters and over spray.
- D. Protecting wet paint from vehicular and pedestrian traffic.

**2.0 PRODUCTS****2.1 PAINT**

- A. Paint for traffic applications shall be Acrylic Latex Pavement Marking Material conforming to MODOT 1048.90 without glass beads for white and yellow paint. The material shall have a no-track time of 10 minutes or less and applied at 16 mils wet film thickness at  $70 \pm F$  ( $21 \pm 1 C$ ).
- B. Paint for parking lot striping shall be chlorinated rubber conforming to TT-P-115F, epoxy pavement marking material without glass beads (per subsection A), or approved equal.
- C. Paint shall be manufactured by Pratt and Lambert, Glidden, Cook, Pittsburgh, Benjamin Moore, or approved equal.
- D. Paint type must be compatible with the surfaces to be painted.

**2.2 COLORS**

- A. Colors of paint shall be applied per the following color code:
  - 1. White: Parking space lines, stop bars, curbs, cross walks and directional arrows.
  - 2. Yellow: Loading zones, safety zones, no parking zones, curbs, and median edges.
  - 3. Blue: Access parking stalls.
  - 4. Red: Fire Lanes.

**2.3 MATERIALS**

- A. Materials shall include standard commercial grade masking materials, scrapers, cleaning solvents, and other materials required for the work.
- B. Use only materials specified by the manufacturer's direction label on container.

**2.4 CERTIFICATION**

- A. The contactor shall furnish a manufacturer's certification to the engineer for each lot furnished, certifying that the material supplied conform to all requirements specified. The certification shall include or have attached typical results of all required tests. Acceptance of the material will be based on the manufacturer's certification and upon results of such tests as may be performed by the engineer. The certification shall show the quantity and lot number it represents.

**2.5 DELIVERY AND STORAGE**

- A. Deliver materials to the site in original containers with seals unbroken and labels intact. The pavement marking material shall be shipped to the job site in strong, substantial containers. The manufacturer shall include the MSDS with each shipment. The manufacturer's name and address, name of the product, lot number and/or batch number, color, tare weight, manufacturing date, and date of expiration.
- B. Protect all paint from freezing.
- C. Paint shall not be settled, caked or thickened in the container, and shall be readily stirred with a paddle to a smooth consistency.
- D. The Contractor shall ensure that all colors match the color selected by the Owner's Representative prior to application.

**3.0 EXECUTION****3.1 EQUIPMENT FOR TRAFFIC APPLICATIONS AND PARKING LOTS**

- A. The application equipment shall have a system capable of spraying both yellow and white pavement marking material in the proportions recommended by the manufacturer.

**3.2 PROTECTION**

- A. Prior to beginning cleaning or painting operations, Contractor shall protect all items or surfaces not included in area to be painted. Protection shall include vehicles, equipment, and structures, which shall be kept free of paint spatters, over spray or damage.
- B. Contractor shall provide fencing, barricades, signage, and other devices to protect all painted areas from pedestrian and vehicular traffic until sufficient drying time has been achieved.

**3.3 SURFACE PREPARATION FOR TRAFFIC APPLICATIONS AND PARKING LOTS**

- A. The pavement surface on which the pavement marking is placed shall be free of all debris, laitance and other contaminants that may hinder the adhesion of the system to the surface. Whenever grinding, scarifying, sandblasting, shot blasting or other operations are performed, the debris generated must be

contained through vacuum type equipment or equivalent. The pavement surface shall not be left scarred with an image that might mislead traffic. Any excess damage or scarring of the pavement shall be repaired at the contractor's expense.

- B. Removal and cleaning work shall be conducted in such a manner as to control and minimize airborne dust and similar debris that may become a hazard to motor vehicle operation or nuisance to property owner.
- C. Care shall be taken on bituminous and Portland cement concrete surface when performing removal and cleaning work to prevent damage to transverse and longitudinal joints.
- D. After all cleaning operations are completed, the pavement surface shall be power broomed and then blown with compressed air to remove residue and debris resulting from the cleaning work. All such debris must be properly contained and disposed of as approved by the engineer.
- E. Limits of Work: Cleaning and surface preparation work shall be confined to the area specified for the application of the pavement marking materials; or the surface area of existing pavement markings that are specified for removal on the plans, or as directed by the engineer.
  - 1. Surface preparation work includes cleaning for lines.
  - 2. When lines are cleaned, the area of preparation shall be the width of the new pavement marking, or existing line, plus one inch (25mm) on each side of the line.
- F. Surface Preparation on Asphalt Surfaces: On new bituminous pavement cleaning operations shall not begin until after the asphalt mat has reached ambient temperature.

### **3.4 JOB CONDITIONS**

- A. Painting shall be done immediately after final surfacing as practical unless instructed otherwise by the Owner's Representative.
- B. Adequate illumination shall be available.
- C. Surfaces to receive paint shall be examined carefully for defects, which might prevent satisfactory striping results.
  - 1. Do not paint over rust, scale, grease, oil, fuel, dust, moisture, or conditions otherwise detrimental to paint adhesion.
  - 2. Grease, oil, or fuel on any surface shall be removed before painting.
  - 3. Work shall not proceed until such defects are corrected.
- D. Contractor shall examine areas to be painted and notify Owner's Representative in writing of conditions that might delay timely completion of the work.

### **3.5 WEATHER CONDITIONS**

- A. Painting shall not be performed when the ambient temperature is less than 55° F, while the surface is damp, or in rainy weather.

- B. The surface must be five degrees or more above the dew point temperature during painting operations and while paint is drying.
- C. Avoid painting while surfaces are exposed to direct sunlight.

### **3.6 PARKING LOT STRIPING APPLICATION**

- A. Areas to be painted shall receive one coat of paint not less than 16 mils thickness wet.
  - 1. In locations requiring multiple coats, prior coat shall be dry to manufacturer's recommendations before applying succeeding coat.
- B. Finished work shall be uniform, of approved color, free of runs, drips, defective brushing, spraying, and clogging.
  - 1. Lines and symbols shall be neat and well defined.
  - 2. Only skilled applicators may be employed to apply paint.
  - 3. Application techniques shall be approved by Owner's Representative.

### **3.7 QUALITY CONTROL**

- A. Remove paint splatter from adjacent areas or areas not designated to receive paint.
- B. Contractor shall repair or touch up any surfaces if exposed to vehicular and pedestrian traffic, to the satisfaction of the Owner's Representative, at no additional cost to the Owner.
- C. When color, dirt, stains, existing paint, etc., show through the final coat, the surface shall be repainted until the film is uniform in finish, coverage, color and appearance.

**END OF SECTION 321723**

**DIVISION 32 – EXTERIOR IMPROVEMENTS**

**SECTION 329219 - FERTILIZING, SEEDING & MULCHING**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS:**

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

**1.2 SUMMARY:**

- A. The Contractor shall furnish all seed, labor and materials, and perform all operations in connection with the placing, watering and firming of seeded areas, complete and in strict accordance with these specifications and applicable Drawings, and subject to the terms and conditions of the Contract. The Contractor shall seed all areas disturbed for any reason during construction.
- B. Related sections include the following:
  - 1. 312300 Excavating, Filling and Grading

**PART 2 - PRODUCTS**

**2.1 SEED:**

- A. Agricultural seed for cover crops shall comply with the requirements of the State and Local Laws. The following percentages for rate, purity and germination will be the minimum requirements in the acceptance of seed, unless otherwise permitted by the Engineer:

<u>TYPE</u>	<u>PURITY</u>	<u>GERMINATION</u>	<u>BLEND (%)</u>
Kentucky Bluegrass	85	80	20
Redtop	92	85	12
Tall Fescue (Alta of Ky.)	97	85	50
White Clover	98	85	6
Wheat	95	85	12

**2.2 COMMERCIAL FERTILIZER:**

- A. Shall be composed of a formula 20-12-10 and shall conform to the applicable state fertilizer laws. It shall be uniform in composition, dry and free flowing and shall be delivered to the site in the original unopened containers, each bearing the manufacturer's guaranteed analysis. Any fertilizer which becomes caked or otherwise damaged, making it unsuitable for use, will not be accepted.
- B. Agricultural limestone with not less than 90 percent passing the No. 4 sieve with percentages of calcium carbonate common to the area or hydrated lime containing not less than 45 percent calcium hydroxide shall be used for soil neutralization, unless otherwise indicated.

**2.3 MULCH**

- A. Vegetative mulch shall be straw from stalks of oats, wheat, rye or barley, or other foliage from plants as approved by the Engineer. The straw shall be relatively free from noxious and undesirable seeds, relatively free from foreign materials and dry enough to evenly spread.

### **PART 3 - EXECUTION**

#### **3.1 TIME OF PLANTING:**

- A. Seeding shall be performed during the seasons when satisfactory growing conditions exist. The planting operation shall not be performed during times of drought or other unfavorable climatic conditions unless the Contractor can provide suitable conditions, such as irrigation, to allow for sufficient germination.

#### **3.2 PLANTING PROCEDURES:**

- A. The areas to be seeded shall be prepared immediately prior to the placing of the seed by thorough cultivating, smoothing, removal of clods, surface stone 1-inch diameter or larger, and weeds. Soil shall be in a moist condition prior to placing seed.
- B. Grades on the areas to be seeded shall be maintained in true, even and compacted conditions so as to prevent the formation of depressions. Areas that have washed or eroded shall be brought to grade and compacted thoroughly by the Contractor at his own expense prior to placing the seed. No grading shall be done when the soil is in a muddy or frozen condition.

#### **3.3 APPLYING FERTILIZER:**

- A. The previously described fertilizer shall be applied to the finished grade by approved spreader at the minimum rate of 150 lbs. per acre and shall be thoroughly raked into the top 2 inches of the surface before planting of seed.
- B. Lime shall be applied into the top 2 inches of the soil at a rate of 2,000 lbs. per acre by disking, harrowing or raking prior to the planting of seeds.

#### **3.4 PLANTING SEED:**

- A. Seeding Schedule: Seeding should be performed during the specific time periods as stated hereafter:
  - 1. March 15 through May 1.
  - 2. August 15 through October 1.
- B. These time periods are typical but weather conditions during other time periods may also prove suitable for proper germination. The Contractor shall use his best judgement.
- C. Seed mixed in proportions as hereinbefore specified shall be broadcast by approved sowing equipment at the rate of 150 lbs. per acre. The seed shall be covered to an average depth of 1/2 inch by means of a brush harrow, spike tooth harrow, chain harrow, cultipacker, or other approved device.
- D. Mulch shall be evenly distributed at a rate of 2 tons per acre over the seeded area within 24 hours following seeding. The mulch shall be crimped into the soil to reduce movement due to wind or erosion. After mulching, precautions to prohibit foot or vehicular traffic over the area should be taken.

- E. When delays in operations carry the work beyond the most favorable planting season for the grasses designated, or when conditions are such, by reason of drought, high winds, excessive moisture, or other factors, that satisfactory results are not likely to be obtained, the seeding operation shall be stopped and work shall be resumed only when conditions are favorable again or when approved alternate or corrective measures and procedures have been put into effect. If inspection during seeding operations or after there is a show of green indicates that areas have been skipped, the sowing of additional seed on these areas will be required.
- F. The seeded areas will be inspected for acceptable grass coverage and will be acceptable when the grasses designated are growing and are in good condition, and no area more than 1/2 of one percent of the total areas shall be bare, of which no single areas shall be more than three square feet in area. Any area larger than this will not be acceptable and shall be reseeded.

### **3.5 MAINTENANCE:**

- 1. All seeded areas shall be kept in a healthy, growing condition by watering, mowing, rolling, trimming, edging, etc., until completion and acceptance by the Owner.
- 2. Reconditioning Existing Areas:
  - a) Existing areas damaged by the Contractor's operations (e.g. Contractor's storage areas) including storage of materials and equipment and movement of vehicles are to be reconditioned. Contractor is also to recondition existing grass areas where minor regrading is required.
  - b) Contractor is to provide fertilizer, seed, lime and mulch as required for reconditioned areas as well as new soil as may be required to fill low spots to finished grade.
  - c) Contractor is to remove diseased and unsatisfactory grass areas. These grasses shall not be buried in the soil at a depth less than 24". Contractor shall remove topsoil containing foreign materials resulting from the contractor's operation including oil drippings, stone, gravel, and other materials as directed by the Owner's Representative.
  - d) Where substantial grass remains (but is thin) the Contractor shall mow, rake, aerate (if compacted), fill low spots, remove humps, cultivate, fertilize, seed and mulch in accordance with these specifications.
- 3. Overwinter protection: If the site cannot be seeded during the fall planting period, immediately following the grading operations the Contractor shall be required to stabilize the project site with either straw mulch or a temporary seed crop of wheat or oats. Such operations, if required, will be performed at no additional cost to the Owner.
  - a) If the Contractor chooses to mulch the project site, he shall do so at the same rate and by the same methods as previously described in this section for mulching operations.
  - b) If the Contractor chooses to sow a temporary seed crop, he shall submit proposed rates of application to the Consultant for approval. All seeding shall be complete prior to November 1st.
  - c) The permanent grass species shall not be drilled directly into the mulched or temporary seeded areas. Temporary mulch or grass species shall be incorporated to a depth of 6" by disking, harrowing or other approved methods or shall be disposed of in a manner approved

by the Owner's Representative. All operations previously described under this section for seedbed preparation, liming, and fertilization shall be performed prior to Spring seeding.

- d) The seedhead of the temporary crop shall not be allowed to mature. Should the Contractor be unable to incorporate this crop prior to seedhead maturity, he should mow the crop to prevent maturity. Should wet conditions not allow the contractor to mow the crop and the seedhead matures, the contractor shall combine the crop to prevent a volunteer cereal crop.
4. Temporary Stabilization: Topsoil stock piles and disturbed portions of the site where construction activity temporarily ceases for at least 21 days shall be stabilized with temporary seed or mulch no later than 14 days from the last construction activity in that area. The temporary seed crop shall be wheat or oats. Such operations, if required, will be performed at no additional cost to the Owner.
- a) If the Contractor chooses to mulch the project site, he shall do so at the same rate and by the same methods as previously described in this section for mulching operations.
  - b) If the Contractor chooses to sow a temporary seed crop, he shall submit proposed rates of application to the Consultant for approval.
  - c) The permanent grass species shall not be drilled directly into the mulched or temporary seeded areas. Temporary mulch or grass species shall be incorporated to a depth of 6" by disking, harrowing or other approved methods or shall be disposed of in a manner approved by the Owner's Representative. All operations previously described under this section for seedbed preparation, liming, and fertilization shall be performed prior to Spring seeding.
  - d) The seedhead of the temporary crop shall not be allowed to mature. Should the Contractor be unable to incorporate this crop prior to seedhead maturity, he should mow the crop to prevent maturity. Should wet conditions not allow the contractor to mow the crop and the seedhead matures, the contractor shall combine the crop to prevent a volunteer cereal crop.
5. The Contractor shall protect all seeded areas from damage of any sort due to operations of other contractors and trades, and trespassers. Maintenance shall commence immediately following seeding operations and shall continue throughout the guarantee period. Contractor shall repair or replace damaged areas as directed by the Consultant.

**END OF SECTION 329219**