

PROJECT MANUAL FOR

GARRARD COUNTY, KY FISCAL COURT

GARRARD COUNTY, KENTUCKY

**CONTRACT 1: BRADSHAW MILL ROAD – BRIDGE REPLACEMENT
(COUNTY ROAD 1011)**

PREPARED BY

**MSE OF KENTUCKY, INC.
624 WELLINGTON WAY
LEXINGTON, KENTUCKY 4003
(859) 223-5694
FAX (859) 223-2607
www.mselex.com**

AUGUST, 2018

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SECTION 00020 - INVITATION TO BID

Separate sealed bids for CONTRACT 1: BRADSHAW MILL ROAD – BRIDGE REPLACEMENT will be received by John Wilson, County Judge Executive, at the Garrard County Courthouse, 15 Public Square, Lancaster, Kentucky, 40444, until 2:00 PM local time on Monday, August 27, 2018, and then at said location publicly opened and read aloud.

The CONTRACT DOCUMENTS may be reviewed at the following locations:

Garrard County Judge Executive (address above) (859) 792-3531

MSE of Kentucky, Inc., 624 Wellington Way, Lexington, Kentucky 40503. (859) 223-5694

Builders Exchange, 1035 Strader Drive, Suite 100, Lexington, Kentucky 40505. (859) 288-0011

McGraw-Hill/F W Dodge, 2321 Fortune Dr., Suite 112A, Lexington, Kentucky 40509 (859) 425-6630

Copies of the Contract Documents may be obtained at the office of Lynn Imaging, 328 E. Vine St. Lexington, KY 40507, (859) 226-5850 upon receipt of a check made payable to Lynn Imaging in the amount of \$150.00 (non-refundable) and a check made payable to MSE of Kentucky, Inc. of \$100.00 (refunded when specs and plans are returned to Lynn Imaging within 30 days). All orders must be prepaid. There will be a 24-hour turn-around on all orders.

Each bidder must deposit with his bid, security in the amount, form, and subject to the conditions provided in the information for Bidders. Bidders must be pre-qualified with the Kentucky Transportation Cabinet.

The Owner may consider informal any bid not prepared and submitted in accordance with the provisions of this advertisement and/or the specifications and may waive any informalities or reject any and all Bids.

Prevailing Wage Rates do not apply.

No Bidder may withdraw his Bid for a period of sixty (60) days after the actual date of the opening thereof.

Award will be made to the lowest responsive, responsible Bidder.

End of Section

SECTION 00200 - INFORMATION FOR BIDDERS

Bids will be received by the Garrard County Fiscal Court, (herein called the "Owner") at the County Judge Executive's Office, 15 Public Square (County Courthouse), Lancaster, Kentucky, 40444, until the time and date stated on the advertisement for bids, and then at said location publicly opened and read aloud.

Each Bid must be submitted in a sealed envelope, addressed to John Wilson, County Judge Executive, at the County Judge Executives Office, 15 Public Square (County Courthouse), Lancaster, Kentucky 40444. (859) 792-3531. Each sealed envelope containing a Bid must be plainly marked on the outside as Bid for Garrard County Fiscal Court, Contract 1: Bradshaw Mill Road – Bridge Replacement, and the envelope should bear on the outside the BIDDER'S name, address and license number if applicable, and the name of the project for which the Bid is submitted. If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another envelope addressed to the OWNER at the Garrard County Courthouse, 15 Public Square, Lancaster, Kentucky 40444.

All Bids must be made on the required Bid Form. All blank spaces for Bid prices must be filled, in, in ink or typewritten, and the Bid Form must be fully completed and executed when submitted. Only one copy of the Bid Form is required.

The OWNER may waive any informalities or minor defects or reject any and all Bids. Any Bid may be withdrawn prior to the above scheduled time for the opening of Bids or authorized postponement thereof. Any Bid received after the time and date specified shall not be considered. No BIDDER may withdraw a Bid within sixty (60) days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period the time may be extended by mutual agreement between the OWNER and the BIDDER.

BIDDERS must satisfy themselves of the accuracy of the estimated quantities in the Bid Schedule by examination of the site and a review of the drawings and specifications including Addenda. After Bids have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of Work or of the nature of the Work to be done.

The OWNER shall provide to BIDDERS prior to bidding, all information which is pertinent to, and delineates and describes, the land owned and rights-of-way acquired or to be acquired.

The Contract Documents contain the provisions required for the construction of the project. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve the CONTRACTOR from fulfilling any of the conditions of the contract.

Each Bid must be accompanied by a Bid bond payable to the OWNER for five percent of the total amount of the Bid. As soon as the Bid prices have been compared, the OWNER will return the bonds of all except the three lowest responsible BIDDERS. When the Agreement is executed the bonds of the two remaining unsuccessful BIDDERS will be returned. The Bid Bond of the successful BIDDER will be retained until the Payment Bond and Performance Bond have been executed and approved, after which it will be returned. A certified check may be used in lieu of a Bid Bond.

A Performance Bond and a Payment Bond each in the amount of 100 percent of the Contract Price, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract.

Attorneys-in-fact who sign Bid Bonds or Payment Bonds and Performance Bonds must file with each Bond a certified and effective dated copy of their power of attorney.

The party to whom the contract is awarded will be required to execute the Agreement and obtain the Performance Bond and Payment Bond within ten (10) calendar days from the date when Notice of Award is delivered to the BIDDER. The Notice of Award shall be accompanied by the necessary Agreement and

SECTION 00200 - INFORMATION FOR BIDDERS

Bond forms. In case of failure of the BIDDER to execute the Agreement, the OWNER may consider the BIDDER in default, in which case the Bid Bond accompanying the proposal shall become the property of the OWNER.

The OWNER within ten (10) days of receipt of acceptable Performance Bond, Payment Bond and Agreement signed by the party to whom the Agreement was awarded shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the OWNER not execute the Agreement within such period, the BIDDER may by written notice withdraw the signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the OWNER.

The Notice to Proceed shall be issued within ten (10) days of the execution of the Agreement by the OWNER. Should there be reasons why the Notice to Proceed cannot be issued within such period, the time may be extended by mutual agreement between the OWNER and CONTRACTOR. If the Notice to Proceed has not been issued within the ten (10) day period or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.

The OWNER may make such investigations as deemed necessary to determine the ability of the BIDDER to perform the Work, and the BIDDER shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any Bid if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the Agreement and to complete the WORK contemplated therein.

A conditional or qualified Bid will not be accepted.

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the PROJECT shall apply to the contract throughout.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the Contract Documents. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to its Bid.

The low BIDDER shall supply the names and addresses of major material suppliers and subcontractors when required to do so by the OWNER.

ALL BIDDERS MUST BE PREQUALIFIED BY THE KENTUCKY TRANSPORTATION CABINET. This project is funded in part by Kentucky Rural Secondary Road Funds.

End of Section

SECTION 00310 - BID FORM

GARRARD COUNTY FISCAL COURT

Proposal of _____ (hereinafter called "BIDDER"), organized and existing under the laws of the State of _____, doing business as _____ (insert "a corporation", "a partnership", or "an individual" as applicable) to the Garrard County Fiscal Court, (hereinafter "OWNER").

In compliance with your Invitation to Bid, BIDDER hereby proposes to furnish all equipment, materials, and labor for the work required to construct Contract 11: Bradshaw Mill Road (CR – 1011) – Bridge Replacement, in strict accordance with the Contract Documents, within the time set forth therein, and at the prices stated below.

BID SCHEDULE

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL

1.	23143ED EROSION CONTROL MEASURES. Prepare "Best Management Practice" plan for erosion control and compliance with floodplain construction and Nationwide permit requirements. Submit "Notice of Intent" to Natural Resources and Environmental Protection Cabinet. Implement erosion control measures. Remove erosion control measures after all work completed. Send "Notice of Termination" to the Cabinet upon completion of work.				
	A. 02701 TEMP SILT FENCE. Furnish all labor, equipment and materials and install temporary silt fence.	200	LF	\$ _____	\$ _____
	B. 02709 CLEAN SILT FENCE. Furnish all labor, equipment and materials and clean temporary silt fence.	200	LF	\$ _____	\$ _____
	C. 05950 EROSION CONTROL BLANKET. Furnish all labor, equipment and materials and install erosion control blanket.	500	SQYD	\$ _____	\$ _____
	G. All Other Erosion Control Costs.	1	LS		\$ _____
2.	05985 GRASS SURFACE RESTORATION. Furnish all labor, equipment and materials and seed disturbed areas for final surface restoration.	1	LS		\$ _____
3.	02545 CLEARING/EXCAVATION. Furnish all labor, equipment and materials and clear/excavate areas for construction of new wall foundations. Includes earth backfill after construction.	1	LS		\$ _____
4.	02726 STAKING. Furnish all labor, equipment and materials and provide construction staking/layout.	1	LS		\$ _____

5. 00003 CRUSHED STONE BASE. Furnish all labor, equipment and materials and place KYTC crushed stonebase in areas under new concrete paving where designated and as backfill behind new walls.

53 TONS \$_____ \$_____

6. 02599 FABRIC-GEOTEXTILE TYPE IV. Furnish all labor, equipment and materials and install type IV geotextile fabric under channel lining, in areas where soft subgrade was undercut, and other areas where directed by the Engineer.

400 SQYD \$_____ \$_____

7. 02483 CHANNEL LINING CLASS II. Furnish all labor, equipment and materials and install class II channel lining where designated for ditches and bank protection.

50 TON \$_____ \$_____

8. 02562 SIGNS (TEMPORARY). Furnish all labor, equipment and materials and install temporary signs on barriers for traffic control (ROAD CLOSED).

1 LS \$_____ \$_____

9. 23255 CONCRETE WORK. Furnish all labor, equipment and materials to erect reinforced concrete piers, abutments and abutment walls including footings and anchors in rock or walls where shown. Class AA Concrete.

1 LS \$_____ \$_____

10. 23341 MISCELLANEOUS CONCRETE. Furnish all labor, equipment and materials to place concrete backfill cap or where directed by the Engineer.

2 CY \$_____ \$_____

11. 08651. Furnish all labor, equipment and materials to provide and install Precast Bridge Box Beams (12) CB12 x 48 wivth integral curb on outside beams. Includes anchors, corrosion protection, grouting, sealing, bearing pads, deck drains, expansion joint material and all other necessary miscellaneous hardware.

1 LS \$_____

12. 02101 CONCRETE PAVING WORK. Furnish all labor, equipment and materails to construct concrete approach slabs or paving with reinforcing as shown on plans.

Approach Slab	22 CY	\$_____	\$_____
Concrete Paving	12 CY	\$_____	\$_____

13. 06521 PAVE STRIPING-WB PAINT-4 IN Y. Furnish all labor, equipment and materials and stripe a 12' at approaches and bridge.

314 LF \$_____ \$_____

14. ALLOWANCE FOR QUALITY ASSURANCE TESTING. A qualified firm designated by the Engineer will provide testing and inspection services. Payment for these services shall be made by the Contractor to the designated firm from the stated allowance. Any unused portion of the allowance will be retained by the Owner.

1 LS \$ 8,000

15. 02569 DEMOBILIZATION. Furnish all labor, equipment and materials and demobilize.

1 LS \$ _____

TOTAL BID \$ _____

ALTERNATE BID

Alt. (1) Provide a change in price for installing Composite Box Beams CB12 x 48 with integral curb per KYTC Standard DWG.BDP-0006-03. Beams will be topped with a 5" reinforced concrete overlay wearing surface. The beam seat only will be lowered by 5" in order for bridge wearing surface to match elevation of the new bridge approach slab.

a. Composite Beam Deck \$ _____ (Increase) \$ _____ (Decrease)

b. Concrete Wearing Surface 18 CY \$ _____ \$ _____

TOTAL INCREASE ALTERNATIVE 1 (a & b) \$ _____

The bid prices shall include all labor, materials, overhead, profit, insurance, and other costs necessary to install the finished work of the several items called for. Changes shall be processed in accordance with the General Conditions.

By submission of this Bid, the BIDDER certifies, and in the case of a joint Bid, each party thereto certifies as to its own organization, that this Bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this Bid with any other BIDDER or with any competitor.

BIDDER hereby agrees to commence Work under this contract on or before a date to be specified in the Notice to Proceed and to fully complete the Project within 120 days. BIDDER further agrees to pay as liquidated damages, the sum of \$1,000 for each consecutive calendar day thereafter as provided in the General Conditions and the Special Conditions.

Accompanying this Proposal is a certified check or standard Bid Bond in the sum of _____ Dollars (\$ _____), in accordance with the Information for Bidders. The BIDDER, by submittal of this Bid, agrees with the OWNER that the amount of the bid security deposited with this Bid fairly and reasonably represents the amount of damages the OWNER will suffer due to the failure of the BIDDER to fulfill his agreements as provided in this Proposal.

BIDDER acknowledges receipt of the following Addenda:

No. _____ Date: _____ No. _____ Date: _____
No. _____ Date: _____ No. _____ Date: _____
No. _____ Date: _____ No. _____ Date: _____

BIDDER understands that the OWNER reserves the right to reject any or all Bids and to waive any informalities in the Bidding.

BIDDER agrees that this Bid shall be good and may not be withdrawn for a period of sixty (60) calendar days after the actual date of bid opening.

Within ten (10) calendar days after receiving written notice of the acceptance of this Bid by the OWNER, the Bidder will execute and deliver to the OWNER four (4) copies of the Agreement and such other required Contract Documents.

BIDDER: _____
(Name of Company or Partnership)

By: _____
(Signature) (Date)

(Print Name)

(Title)

(Address)

(Phone Number) (Email Address)

Attested By: _____
(Signature) (Date)

Seal (If bid is by a corporation)

End of Section

NON COLLUSION PROVISION

Each bidder shall file a statement executed by, or on behalf of the person, firm, association, or corporation submitting the bid certifying that such person, firm, association, or corporation has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action, in restraint of free competitive bidding in connection with the submitted bid. Failure to submit the executed statement as part of the bidding documents will make the bid nonresponsive and not eligible for award consideration.

- (1) The required form for the statement will be provided by the State to each prospective bidder.
- (2) The statement shall either be in the form of an affidavit executed and sworn to by the bidder before a person who is authorized by the laws of the State to administer oaths or in the form of an unsworn declaration executed under penalty of perjury of the laws of the United States.

NON-COLLUSION AFFIDAVIT

The undersigned bidder, on behalf of its officers and agents or representatives being duly sworn, states that it has not in any way, directly or indirectly, entered into any arrangement or agreement with any other bidder, or with any other person or public officer whereby bidder has paid or is to pay to such other bidder or other person or public officer any sum or money, or has given or is to give to such other bidder or other person or public officer anything of value whatever, or such affiant or either of them has not, directly or indirectly, entered into any arrangement or agreement with any other bidder or bidders, which tends to or does lessen or destroy free competition in the letting of the contract sought for by the attached bids; that no inducement of any form or character other than that which appears upon the face of the bid will be suggested, offered, paid or delivered to any person whomsoever to influence the acceptance of the said bid or awarding of the contract, nor has this bidder any agreement or understanding of any kind whatsoever, with any person whomsoever to pay, deliver to, or share with any other person in any way or manner, any of the proceeds of the contract sought by this bid.

Subscribed and sworn to before me by _____ this
_____ day of _____, 20____.

My Commission expires:

Notary Public

END OF AFFIDAVIT

SECTION 00320 - BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____ as Principal, hereinafter called the Principal, and _____ as Surety, hereinafter called the Surety, are held and firmly bound unto _____, as Obligee, hereinafter called the Obligee, in the sum of _____ Dollars for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents. The Condition of the above obligation is such that whereas the Principal has submitted to _____, a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the construction of _____.

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or contract documents with good and sufficient surety for the faithful performance of said contract, and for the prompt payment of labor and materials furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this _____ day of _____ 20____.

Principal

Witness

By: _____

Surety

Witness

By: _____
Attorney-in-fact

IMPORTANT: SURETY companies executing BONDS must appear on the Treasury Department's most current list (circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

End of Section

SECTION 00490 - NOTICE OF AWARD

TO: _____

Project Description: Bradshaw Mill Road (CR 1011) – Bridge Replacement.

The OWNER has considered the BID submitted by you for the above described WORK in response to its Invitation to Bid dated _____, 2018 and Information for Bidders.

You are hereby notified that your BID has been accepted for items in the amount of \$_____.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, Payment BOND and certificates of insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said BONDS within ten (10) days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this _____ day of _____, 2018.

Garrard County Fiscal Court
Owner

By: _____

(Name, Title)

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by _____, this
the _____ day of _____, 2018.

By: _____

(Name, Title)

SECTION 00500 - AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 2018, by and between the Garrard County Fiscal Court, hereinafter called "OWNER" and _____, doing business as _____ (insert "a corporation", "a partnership", or "an individual" as applicable) hereinafter called "CONTRACTOR".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR will commence and complete all work as specified or indicated in the Contract Documents for the Bradshaw Mill Road (CR 1011) – Bridge Replacement.
2. The CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the project described herein.
3. The CONTRACTOR will commence the work required by the contract documents within 10 calendar days after the date of the Notice To Proceed and will complete the same within 120 calendar days unless the period for completion is extended otherwise by the Contract Documents. The CONTRACTOR further agrees to pay as liquidated damages, the sum of \$1,000 for each consecutive calendar day thereafter as provided in the Specifications.
4. The CONTRACTOR agrees to perform all of the work described in the Contract Documents and comply with the terms therein for the sum of \$_____, or as shown in the Bid Schedule.
5. The term "CONTRACT DOCUMENTS" means and includes the following:
 - A. Invitation to Bid
 - B. Information for Bidders
 - C. Bid Form
 - D. Bid Bond
 - E. Agreement
 - F. Performance Bond
 - G. Payment Bond
 - H. Notice of Award
 - I. Notice to Proceed
 - J. General Conditions
 - K. Administrative Provisions
 - L. Labor Regulations and Wage Rates (If Applicable)
 - M. Technical Specifications
 - N. Drawings and Plan Sheets
 - O. Addenda
6. The project has been designed by MSE of Kentucky, Inc. who will act as ENGINEER in connection with completion of the project in accordance with the Contract Documents.
7. CONTRACTOR shall submit Applications for Payment in accordance with the General Conditions. Applications for Payment will be reviewed by the ENGINEER as provided in the General Conditions.
8. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR'S Application for Payment as approved by the ENGINEER, on or about the _____ of each month during construction as provided in the General Conditions. All progress payments will be on the basis of the progress of work measured by the schedule of values provided for in the General Conditions. Progress Payments, retainage, and withheld payments shall all be done in compliance with the General Conditions. Upon final completion of the work and settlement of all claims, OWNER shall pay the remainder of the Contract Price.

- 9. Neither OWNER nor CONTRACTOR shall, without the prior written consent of the other, assign or sublet in whole or in part his interest under any of the Contract Documents; and, specifically, CONTRACTOR shall not assign any moneys due or to become due without the prior written consent of the OWNER.
- 10. OWNER and CONTRACTOR each binds himself, his partners, heirs, executors, administrators, successors, assigns and legal representatives to the other party hereto in respect to all covenants, agreements and obligations contained in the Contract Documents.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, the Agreement in four (4) copies, each of which shall be deemed an original on the date first above written.

(Owner)

(Contractor)

By: _____
(Signature) (Date)

By: _____
(Signature) (Date)

(Name, Title)

(Name, Title)

Attest:

Attest:

By: _____
(Signature) (Date)

By: _____
(Signature) (Date)

(Name, Title)

(Name, Title)

End of Section

SECTION 00600 - PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal, and
(Corporation, Partnership or Individual)

_____, hereinafter called Surety, are held and firmly bound unto
(Name of Surety)

(Name of Owner)

(Address of Owner)

hereinafter called OWNER, in the penal sum of _____
_____ Dollars, (\$_____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

The CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 20_____, a copy of which is hereto attached and made a part hereof for the construction of:

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER, and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

SECTION 00600 - PERFORMANCE BOND

IN WITNESS WHEREOF, this instrument is executed in four (4) counterparts, each one of which shall be deemed an original , this the _____ day of _____, 20_____.

ATTEST:

(Principal) Secretary
By: _____
Principal

(SEAL)

(Witness as to Principal)

(Address)

(Address)

(Surety)

ATTEST:

(Surety) Secretary
(SEAL)

(Witness as to Surety)

(Address)

(Address)

Attorney-in-fact

(Address)

Note: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: SURETY companies executing BONDS must appear on the Treasury Department's most current list (circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

End of Section

SECTION 00602 - PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal, and
(Corporation, Partnership or Individual)

_____, hereinafter called Surety, are held and firmly bound unto
(Name of Surety)

(Name of Owner)

(Address of Owner)

hereinafter called OWNER, in the penal sum of _____
_____ Dollars, (\$_____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

The CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 20_____, a copy of which is hereto attached and made a part hereof for the construction of:

NOW, THEREFORE, if the Principal shall promptly make payments to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment, and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER, and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in four (4) counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20_____.

ATTEST:

(Principal) Secretary

Principal
By: _____

(SEAL)

(Witness as to Principal)

(Address)

(Address)

(Surety)

ATTEST:

(Surety) Secretary

(SEAL)

(Witness as to Surety)

Attorney-in-fact

(Address)

(Address)

Note: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: SURETY companies executing BONDS must appear on the Treasury Department's most current list (circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

End of Section

SECTION 00680 - NOTICE TO PROCEED

TO: _____

Date: _____

Project: Bradshaw Mill Road
(CR 1011) – Bridge Replacement

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 2018, on or before _____, 2018, and you are to complete the WORK within 120 consecutive calendar days thereafter.

The date of completion of all work is therefore _____, 2018.

Garrard County Fiscal Court
Owner

By: _____

Name

Title

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by _____, this the _____ day of _____, 2018.

By: _____

Name

Title

End of Section

SECTION 00700 - GENERAL CONDITIONS

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1. Definitions

Wherever used in these General Conditions or in the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

Addendum - Written or graphic instrument issued to the execution of the agreement which modifies or interprets the Contract Documents, drawings and specifications.

Agreement - The written agreement between Owner and Contractor covering the work to be performed; other Contract Documents are attached to the Agreement.

Application for Payment - the form furnished by Engineer which is to be used by Contractor in requesting progress payments and which is to include the schedule of values required by Article 42.

Engineer - The person, firm or corporation named as such in the Agreement.

Bid - The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the work to be performed.

Bidder - Any person, firm or corporation submitting a Bid for the work.

Bonds - Bid, performance and payment bonds and other instruments of security, furnished by Contractor and his surety in accordance with the Contract Documents.

Change Order - A written order to Contractor signed by Owner authorizing an addition, deletion or revision in the work, or an adjustment in the Contract Price or the Contract Time issued after execution of the Agreement.

Contract Documents - The Advertisement for Bids, Agreement, Addenda (whether issued prior to the opening of Bids or the execution of the Agreement), Instructions to Bidders, Contractor's Bid, the Bonds, the Notice of Award, these General Conditions, the Supplementary Conditions, the Specifications, Drawings and Modifications.

Contract Price - The total moneys payable to Contractor under the Contract Documents.

Contract Time - The number of days stated in the Agreement for the completion of the work.

Contractor - The person, firm or corporation with whom Owner has executed the Agreement.

Day - A calendar day of twenty-four hours measured from midnight to the next midnight.

Drawings - The drawings which show the character and scope of work to be performed and which have been prepared or approved by Engineer and are referred to in the Contract Documents.

Field Order - A written order issued by Engineer to the Contractor which clarifies or interprets the Contract Documents or orders minor changes in the work without involving a change in the contract price or time.

Modification - (a) A written amendment of the Contract Documents signed by both parties, (b) a Change Order, (c) a written clarification or interpretation issued by Engineer, or (d) a written order for a minor change or alteration in the work issued by Engineer. A Modification may only be issued after execution of the Agreement.

Notice of Award - The written notice by Owner to the apparent successful bidder stating that upon compliance with the conditions precedent to be fulfilled by him within the time specified, Owner will execute the Agreement with him.

SECTION 00700 - GENERAL CONDITIONS

Notice to Proceed - A written notice given by Owner to Contractor (with a copy to Engineer) fixing the date on which the contract time will commence to run and on which Contractor shall start to perform his obligations under the Contract Documents.

Owner - A public body or authority, corporation, association, partnership, or individual for whom the work is to be performed.

Project - The entire construction to be performed as provided in the Contract Documents.

Resident Project Representative - The authorized representative of Engineer who is assigned to the Project site or any part thereof.

Shop Drawings - All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by Contractor, a Subcontractor, manufacturer, supplier or distributor and which illustrate the equipment, material or some portion of the work.

Specifications - Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the work.

Subcontractor - An individual, firm or corporation having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the work at the site.

Substantial Completion - The date as certified by Engineer when the construction of the project or a specified part thereof is sufficiently completed, in accordance with the Contract Documents, so that the project or specified part can be utilized for the purposes for which it was intended.

Work - Any and all obligations, duties and responsibilities necessary to the successful completion of the project assigned to or undertaken by Contractor under the Contract Documents, including all labor, materials, equipment and other incidentals, and the furnishing thereof.

Written Notice - A notice in writing to any party of the Agreement and considered delivered and the service thereof completed, when posted by certified or registered mail to said party at his last given address or delivered in person to said party or his authorized representative.

2. Execution, Correlation and Intent of Documents

At least six copies of the Agreement and such other Contract Documents as practicable will be executed and delivered to the Owner by the Contractor within ten days of the Notice of Award. Owner shall execute and deliver one counterpart to Contractor within ten days after receipt of the executed Agreement from Contractor. Engineer will identify those portions of the Contract Document not signed and such identification will be binding on all parties.

Contractor shall also deliver to Owner such Bonds as he may be required to furnish when he delivers the executed agreement to Owner.

It is the intent of the Specifications and Drawings to describe a complete project to be constructed in accordance with the Contract Documents. The Contract Documents comprise the entire Agreement between Owner and Contractor. They may be altered only by a modification.

The Contract Documents are complementary; what is called for by one is as binding as if called for by all. If Contractor finds a conflict, error or discrepancy in the Contract Documents, he shall call it to Engineer's attention in writing at once and before proceeding with the work affected thereby; however, he shall not be liable to Owner or Engineer for his failure to discover any conflict, error or discrepancy in the Specifications or Drawings. In resolving such conflicts, errors and discrepancies, the documents shall be given precedence in the following order: Agreement, Modifications, Addenda, Special Conditions, Instructions to Bidders, General Conditions, Specifications and Drawings. Figure dimensions on Drawings shall govern over general Drawings. Any work that may reasonably be inferred from the Specifications or Drawings as being required to produce the intended result shall be supplied whether or not it is specifically

SECTION 00700 - GENERAL CONDITIONS

called for. Work, materials or equipment described in words which so applied have a well-known technical or trade meaning shall be deemed to refer to such recognized standards.

3. Starting the Project

Before undertaking each part of the work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. He shall at once report in writing to Engineer any conflict, error or discrepancy which he may discover; however, he shall not be liable to Owner or Engineer for his failure to discover any conflict, error or discrepancy in the Drawings or Specifications.

Within ten days after delivery of the executed Agreement by Owner to Contractor, Contractor shall submit to Engineer for approval, an estimated progress schedule indicating the starting and completion dates to the various stages of the Work, and a preliminary schedule of Shop Drawing submissions.

Before starting the Work at the site, Contractor shall furnish Owner and Engineer certificates of insurance as required by Article 7. Within twenty days after delivery of the executed Agreement by Owner to Contractor, but before starting the work at the site, a conference will be held to review the above schedules to establish procedures for handling Shop Drawings and other submissions and for processing Applications for Payment, and to establish a working understanding between the parties as to the Project. Present at the conference will be Owner or his representative, Engineer, Resident Project Representative, Contractor and his Superintendent.

Contractor shall start to perform his obligations under the Contract Documents on the date when the Contract Time commences to run. No Work shall be done at the site prior to the date on which the contract time commences to run.

4. Contract Documents

Unless otherwise provided in the Special Conditions, the Owner or his representative will furnish the Contractor, free of charge, up to six copies of drawings and specifications and other Contract Documents. Additional copies shall be provided for the cost of reproduction.

5. Contractor's Pre-Start Representations

Contractor represents that he has familiarized himself with, and assumes full responsibility for having familiarized himself with, the nature and extent of the Contract Documents. Work, locality, and with all local conditions and federal, state and local laws, ordinances, rules and regulations that may in any manner affect performance of the work, and represents that he has correlated his study and observations with the requirements of the Contract Documents. Contractor also represents that he has studied all surveys and investigation reports of subsurface and latent physical conditions referred to in the Plans and Specifications and made such additional surveys and investigations as he deems necessary for the performance for the work at the Contract Price in accordance with the requirements of the Contract Documents and that he has correlated the results of all such data with the requirements of the Contract Documents.

6. Indemnity

The Contractor shall indemnify and hold harmless the Owner and the Engineer and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the work, providing that any such claim, damage, loss or expense (a) is attributable to bodily injury, sickness, diseases or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom and (b) is caused in whole or in part by any negligent act or omission of the Contractor and Subcontractor, anyone directly or indirectly employed by any of them or any one for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

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In any and all claims against the Owner or the Engineer or any of their agents or employees by any employee of the Contractor, any Subcontractor, any one directly or indirectly employed by any of them or any one for whose acts any of them may be liable, the indemnification obligation under these General Conditions shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workmen's compensation acts, disability benefit acts or other employee benefit acts.

The obligations of the Contractor under these General Conditions shall not extend to the liability of the Engineer, his agents or employees arising out of (a) the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs or specifications or (b) the giving of or the failure to give instructions or directions by the Engineer, his agents or employees provided such giving or failure to give is the primary cause of injury or damage.

7. Insurance

Contractor shall purchase and maintain such insurance as will protect him from claims under workmen's compensation laws, disability benefit laws or other similar employee benefit laws; from claims for damages because of bodily injury, occupational sickness or disease, or death of his employees, and claims insured by usual personal injury liability coverage; from claims for damages because of bodily injury, sickness or disease, or death of any person other than his employees including claims insured by usual personal injury liability coverage; and from claims for injury to or destruction of tangible property, including loss of use resulting therefrom -- any or all of which arise out of or result from Contractor's operations under the Contract Documents, whether such operations be by himself or by any Subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. This insurance shall include the specific coverages and be written for not less than any limits of liability and maximum deductibles specified in the Special Conditions or required by law, whichever is greater, shall include contractual liability insurance and shall include Owner and Engineer as additional insured parties. Before starting the Work, Contractor shall file with Owner and Engineer certificates of such insurance, acceptable to Owner; these certificates shall contain a provision that the coverage afforded under the policies will not be canceled or materially changed until at least fifteen days' prior written notice has been given to Owner and Engineer.

The Contractor shall procure and maintain, at his own expense, during the contract time, liability insurance as hereinafter specified; and in the amounts listed in the Special Conditions.

- a. Compensation Insurance - The Contractor shall take out and maintain during the life of this contract Workmen's Compensation Insurance for all of his employees employed at the site of the project, and, in case any work is sublet, the Contractor shall require the subcontractor similarly to provide Workmen's Compensation Insurance for all of the latter's employees unless such employees are covered by the protection afforded by the Contractor.
- b. Public Liability and Property Damage Insurance - The Contractor shall take out and maintain during the life of this contract such Public Liability and Property Damage Insurance as shall protect him and any subcontractor performing work covered by this contract, from claims for damages for personal injury, including accidental death, as well as for claims for property damages which may arise from operations under this contract, whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them. The insurance will include as additional named insured: the Owner and Engineer and his Consultants; and each of their officers, agents and employees.
- c. Contingent Public Liability and Property Damage Insurance - If any subcontracts are awarded, subparagraph "b" above shall be interpreted to require that the General Contractor shall take out and maintain Contractor's contingent public liability and property damage insurance in the amounts required under the "Special Conditions".
- d. Builder's Risk Insurance or Installation Floater - The Contractor shall provide "All Risk" type Builder's Risk Insurance including coverage for fire, lightning, explosion, wind, hail, riot, aircraft, smoke, collapse, extended coverage, vandalism and malicious mischief. Unless specifically

SECTION 00700 - GENERAL CONDITIONS

authorized by the Owner, the amount of such insurance shall not be less than the contract price totaled in the bid. Deductible amount shall not exceed \$250.

In case of pipeline contracts, this coverage shall be provided by an installation floater for the full cash value of materials and accessories on hand to be used in conjunction with the project. Coverage shall include insuring against transportation loss or damage. The policy shall name as the insured the Contractor, the Engineer and the Owner.

- e. Railroad Protective Liability Insurance - Where work on railroad rights-of-way is involved, the Contractor shall also be covered by Railroad Protective Liability Insurance with limits of liability as required by the railroad company on whose property the work is being performed.
- f. Flood Hazard Insurance - The Contractor will be required to acquire and maintain during the life of the Contract any flood insurance made available under the National Flood Insurance Act of 1968, as amended. The insurance shall be in an amount at least equal to the contract amount costs excluding cost of uninsurable improvements, or to the maximum limit of coverage made available under the National Flood Insurance Act of 1968, as amended, whichever is less.

8. Guaranty Bond

Contractor shall furnish performance and payment bond as security for the faithful performance and payment of all his obligations under the Contract Documents. These Bonds shall be in amounts at least equal to the contract price, and (except as otherwise provided in the Supplementary Conditions) in such form and with such sureties as are licensed to conduct business in the state where the project is located and are named in the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Treasury Department.

If the surety on any Bond furnished by Contractor is declared a bankrupt or becomes insolvent or its rights to do business is terminated in any state where any part of the Project is located is revoked, Contractor shall within five days thereafter substitute another Bond and Surety, both of which shall be acceptable to Owner.

9. Additional Bonds and Insurance

Prior to delivery of the executed Agreement by Owner to Contractor, Owner may require Contractor to furnish such other Bonds and such additional insurance, in such form and with such sureties or insurers as Owner may require. If such other Bonds or such other insurance are specified by written instructions given prior to opening of bids, the premiums shall be paid by Contractor: if subsequent thereto, they shall be paid by Owner (except as otherwise provided in Article 15.)

10. Availability of Lands

Prior to issuance of Notice to Proceed, the Owner shall obtain all land and rights-of-way necessary for carrying out and for the completion of the work to be performed pursuant to the Contract Documents, unless otherwise mutually agreed.

The Owner shall provide the Contractor information which delineates and describes the land owned and rights-of-way acquired.

The Contractor shall provide at his own expense and without liability to the Owner any additional land and access thereto that the Contractor may desire for temporary construction facilities, or for storage of materials.

11. Unforeseen Physical Conditions

Contractor shall promptly notify Owner and Engineer in writing of any subsurface or latent physical conditions at the site differing materially from those indicated in the Contract Documents. Engineer will promptly investigate those conditions and advise Owner in writing if further surveys or subsurface test are

SECTION 00700 - GENERAL CONDITIONS

necessary. Promptly thereafter, Owner shall obtain the necessary additional surveys and tests and furnish copies to Engineer and Contractor. If Engineer finds that the results of such surveys or test indicate that there are subsurface or latent physical conditions which differ materially from those intended in the Contract Documents, and which could not reasonably have been anticipated by Contractor, a Change Order shall be issued incorporating the necessary revisions.

12. Reference Points

Owner shall provide engineering surveys for construction to establish reference points which in his judgment are necessary to enable Contractor to proceed with the work. Contractor shall be responsible for surveying and laying out the work (unless otherwise provided in the Special Conditions), and shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of Owner. He shall report to Engineer whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or location. Contractor shall replace and accurately relocate all reference points so lost, destroyed or moved.

13. Superintendence - Supervision

The Contractor shall keep on his work, during its progress, a competent Superintendent and any necessary assistants, all satisfactory to the Engineer. The Superintendent shall not be changed without written notice to the Owner and Engineer except under extraordinary circumstances. The Superintendent shall represent the Contractor in his absence and all directions given to him shall be as binding as if given to the Contractor.

The Contractor shall give efficient supervision to the Work, using his best skill and attention. He shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but he shall not be solely responsible for the negligence of others in the design or selection of a specific means, method, technique, sequence or procedure of construction which is indicated in and required by the Contract Documents. Contractor shall be responsible to see that the finished Work complies accurately with the Contract Documents.

The Contractor shall see that for his own Work and for the Work of each subcontractor, proper templates and patterns necessary for the coordination of the various parts of the Work are prepared, and shall furnish, or require subcontractors to fit together and execute fully their respective portions of the Work.

14. Materials, Appliances, Employees

The Contractor shall provide and pay for all materials, labor, water tools, appliances, fuel, heat, sanitary facilities, equipment, light, power, telephone, transportation and other facilities necessary for the execution, testing, initial operation and completion of the Work.

Approval of manufacturer's Shop Drawings of materials and equipment shall not mean final acceptance, but they shall be subject to inspection and test or delivery and installation. The Contractor shall repair, replace, or adjust any materials or equipment found defective or not operating properly, due to improper materials, workmanship, and adjustment on his part, during the correction period.

Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the work. Stored materials and equipment to be incorporated in the work shall be located so as to facilitate prompt inspection.

Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directly by the manufacturer.

The Contractor shall provide competent, suitably qualified personnel to survey and lay out the work and perform construction as required by the Contract Documents. The 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.

15. Substitute Materials or Equipment

Wherever the words "or equal", appear in the Specifications or on the Drawings, they shall be interpreted to mean an item of material or equipment equal in quality to that named and which is suited to the same use and capable of performing the same function as that named.

The burden of proof of equal quality or service shall be on the Contractor. Proof of inequality is not implied by the Specifications and is not a burden of the Engineer. His duty shall be to properly weigh the proven facts of equality in fairness to all parties involved.

Inclusion of a certain make or type of materials or equipment in Contractor's bid or estimate shall not obligate the Owner to accept such material or equipment if it does not meet the requirements of the Plans and Specifications.

If the Contract, Specifications, law, ordinance or applicable rules or regulations permit Contractor to furnish or use a substitute that is equal to any material or equipment specified, and if Contractor wishes to furnish or use a proposed substitute, he shall prior to 30 days before such substitute is required make written application to Engineer for approval of such a substitute certifying in writing that the proposed substitute will perform adequately the functions called for by the general design, be similar and of equal substance to that specified and be suited to the same use and capable of performing the same function as that specified; stating whether or not its incorporation in or use in connection with the project is subject to the payment of any license fee or royalty; and identifying all variations of the proposed substitute from that specified and indicating available maintenance service. No substitute shall be ordered or installed without the written approval of Engineer who will be the judge of equality and may require Contractor to furnish such other data about the proposed substitute as he considers pertinent. No substitute shall be ordered or installed without such performance guarantee and bonds as Owner may require which shall be furnished at Contractor's expense.

In case where one or more specified brands, makes or manufacturers are named and these names are not qualified by the "or equal" clause, it is intended that the Contractor be restricted to one of those named unless otherwise set out.

16. Subcontracts

Contractor shall not employ any Subcontractor or other person or organization (including those who are to furnish the principal items of materials or equipment), whether initially or as a substitute, against whom Owner or Engineer may have reasonable objection.

The Contractor will not be permitted to sublet any portion of his contract to any individual, copartnership or corporation without the prior written consent of the Owner and the approval of the Engineer.

The Contractor shall not sublet more than fifty percent (50%) of the work without the written consent of the Owner and approval of the Engineer prior to the receipt of bids.

Contractor shall be fully responsible for all acts and omissions of his Subcontractor and of persons and organizations directly or indirectly employed by them and of persons and organizations for whose acts any of them may be liable to the same extent that he is responsible for the acts and omissions of persons directly employed by him. Nothing in the Contract Documents shall create contractual relationship between Owner or Engineer and any Subcontractor or other person or organization having a direct contract with Contractor, nor shall it create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any Subcontractor or other persons or organization, except as may otherwise be required by law. Owner or Engineer may furnish to any Subcontractor or other person or organization, to the extent practicable, evidence of amounts paid to Contractor on account of specific Work done in accordance with the schedule of values.

The divisions and sections of the Specifications and the identifications of any drawings shall not control Contractor in dividing the Work among Subcontractors or delineating the Work to be performed by any specific trade.

Contractor agrees to bind specifically every Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of Owner.

All work performed for Contractor by a Subcontractor shall be pursuant to an appropriate agreement between Contractor and the Subcontractor which shall contain provisions that waive all rights the contracting parties may have against one another for damages caused by fire or other perils covered by insurance provided in accordance with Article 7, except such rights as they may have to the proceeds of such insurance held by Owner as trustee.

17. Patent Fees and Royalties

Contractor shall pay all license fees and royalties and assume all costs incidental to the use in the performance of the work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents. Contractor shall indemnify and hold harmless Owner and Engineer and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses (including attorney's fees) arising out of any infringement of patent rights or copyrights incidental to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights.

18. Permits, Laws and Regulations

Contractor shall obtain and pay for all construction permits and licenses and shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of his bid. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall also pay all public utility charges.

Contractor shall give all notices and comply with all laws, ordinances, rules and regulations applicable to the Work. If Contractor observes that the specifications or drawings are at variance therewith, he shall give the Engineer prompt written notice thereof, and any necessary changes shall be adjusted by an appropriate modification. If Contractor performs any Work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to Engineer, he shall bear all costs arising therefrom; however, it shall not be his primary responsibility to make certain that the Specifications and Drawings are in accordance with such laws, ordinances, rules and regulations.

19. Taxes

Contractor shall pay all sales, consumer use and other similar taxes required to be paid by him in accordance with the law of the place where the Work is to be performed.

20. Safety and Protection

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. He shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

- a. All employees on the Work and other persons who may be affected thereby.
- b. All the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site.

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- c. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. He shall erect and maintain, as required by the conditions and progress of the Work, all necessary safeguards for its safety and protection. He shall notify owners of adjacent utilities when prosecution of the work may affect them. All damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, shall be remedied by Contractor; except damage or loss attributable to the fault of Owner or Engineer or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor. Contractor's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor that the Work is acceptable.

Contractor shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be Contractor's Superintendent unless otherwise designated in writing by Contractor to Owner

In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, Contractor, without special instruction or authorization from Engineer or Owner, is obligated to act, at his discretion, to prevent threatened damage, injury or loss. He shall give Engineer prompt written notice of injury or loss. He shall give Engineer prompt written notice of any significant changes in the Work or deviations from the Contract Documents caused thereby, and Change Order shall thereupon be issued covering the changes and deviations involved. If Contractor believes that additional Work done by him in an emergency which arose from causes beyond his control entitles him to an increase in the Contract Price or an extension of the Contract Time, he may make a claim therefor as provided in these Specifications.

21. Shop Drawings and Samples

After checking and verifying all field measurements, the Contractor shall submit with such promptness as to cause no delay in the Work two (2) copies of all Shop Drawings and schedules required for the Work, and the Engineer will pass upon them with reasonable promptness, making necessary corrections. The Contractor shall then revise the drawings as required by the Engineer and file with him five (5) corrected copies for final approval (or one (1) reproducible copy).

Drawings shall have been checked by and stamped with the approval of Contractor and identified as Engineer may require. The data shown on the Shop Drawings will be complete with respect to dimensions, design criteria, materials of construction and the like to enable Engineer to review the information as required.

The Contractor shall also submit to Engineer for approval with such promptness as to cause no delay in work, all samples required by the Contract Documents. All samples will have been checked by and stamped with the approval of Contractor, identified clearly as to material, manufacturer, any pertinent catalog numbers and the use for which intended.

At the time of each submission, Contractor shall in writing call Engineer's attention to any deviations that the Shop Drawings or sample may have from the requirement of the Contract Documents.

The Engineer will review and approve with reasonable promptness Shop Drawings and samples, but his review and approval shall be only for conformance with the design concept of the project and for compliance with the information given in the Contract Documents. The approval of a separate item as such will not indicate approval of the assembly in which the item functions. Contractor shall make any corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and resubmit new samples until approved. Contractor shall direct specific attention in writing or

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on resubmitted Shop Drawings to revisions other than the corrections called for by Engineer on previous submissions. Contractor's stamp of approval on any Shop Drawing or sample shall constitute a representation to Owner and Engineer that Contractor has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data or he assumes full responsibility for doing so, and that he has reviewed or coordinated each Shop Drawing or sample with the requirements of the Work and the Contract Documents.

Where a Shop Drawing or sample submission is required by the Specifications, no related Work shall be commenced until the submission has been approved by Engineer. A copy of each approved Shop Drawing and each approved sample shall be kept in good order by Contractor at the site and shall be available to Engineer.

The following items of Work and other such items as required shall have Shop Drawings submitted:

- a. All concrete reinforcement, water stops, pre cast concrete and location of construction joints.
- b. Structural steel, miscellaneous metal and fencing.
- c. Windows and doors.
- d. Piping layouts, including small piping layouts.
- e. Mechanical equipment.
- f. Pumps and related equipment, including pump control equipment.
- g. Building service equipment.
- h. Control and instrumentation, metering equipment.
- i. Electrical equipment and wiring diagrams.
- j. Plumbing, heating, ventilating and air conditioning equipment.

No fabrication, erection, installation or construction shall commence until drawings and details have been approved by the Engineer.

Engineer's approval of Shop Drawings or samples shall not relieve the Contractor from his responsibility for any deviations from the requirements of the Contract Documents unless Contractor has in writing called Engineer's attention to such deviation at the time of submission and Engineer has given written approval to the specific deviation, nor shall any approval by Engineer relieve Contractor from responsibility for errors or omissions in the Shop Drawings.

22. Record Drawings

The Contractor shall keep an accurate record of the location, size, and material for all piping, both interior and exterior, concealed and exposed; size and routing of conduits, size and location of pull boxes and number and size of conductors installed therein; and changes in equipment dimensions, structural openings, foundations and any other variations between the Work actually provided and that shown on the Contract Drawings. The representation of such variations shall conform to standard drafting practices and shall include such supplementary notes, legends and details as may be necessary for legibility and clear portrayal of the as-built construction. Upon completion, the Contractor shall have these drawings and records certified as to their completeness and correctness by the Resident Inspector and deliver them to the Engineer for incorporation into the tracings. Final As-Built alignment, invert elevations and locations including the location of service connections for water and sewer lines are to be supplied by the Contractor.

As-Built information shall be provided monthly to the Engineer and submitted with the partial pay request.

23. Use of Premises

The Contractor shall confine his apparatus, the storage of materials and the operation of his workmen to limits indicated by law, ordinances, permits or direction of the resident Engineer and shall not unreasonably encumber the premises with his materials.

The Contractor shall not load or permit any part of any structure to be loaded with weights that will endanger the structure, nor shall he subject any part of the Work to stresses or pressures that will endanger it.

The Contractor shall enforce all applicable regulations and any additional requirements of the Owner regarding signs, advertisements, fires and smoking.

24. Cleaning

Contractor shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work, and at the completion of the Work he shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by Owner. Contractor shall restore to their original condition those portions of the site not designated for alteration by the Contract Documents.

25. Work By Others

The Owner reserves the right to perform additional work related to the project by himself or to let other contracts in connection with the 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 property connect and coordinate his work with theirs.

If any part of the Contractor's Work depends on proper execution or results upon the Work of any other Contractor, the Contractor shall inspect and promptly report to the Engineer any defects in such Work that render it unsuitable for such proper execution and results. His failure to inspect and report shall constitute an acceptance of the other Contractor's Work as fit and proper for the reception of his Work, except as to defect which may develop in the other Contractor's Work after the execution of his Work.

To insure the proper execution of this subsequent Work, the Contractor shall measure Work already in place and shall at once report to the Engineer any discrepancy between the executed Work and the Drawings.

Whenever Work being done by the Owner's forces or by other Contractors is contiguous to Work covered by this Contract, the respective rights of the various interest involved shall be established by the Engineer, to secure the completion of the various portion of the Work in general harmony.

The Contractor shall do all cutting, fitting and patching of his Work that may be required to make its several parts come together properly and fit it to receive or be received by such other Work. Contractor shall not endanger any Work of others by cutting, excavating or otherwise altering their Work and will only cut or alter their Work with the written consent of Engineer and of the other Contractors whose Work will be affected.

If the performance of additional Work by other Contractors or Owner is not noted in the Contract Documents prior to the execution of the contract, written notice thereof shall be given to Contractor prior to starting any such additional Work. If Contractor believes that the performance of such additional Work by Owner or others involves him in additional expense or entitles him to an extension of the Contract Time, he may make a claim thereof as provided in these Specifications.

26. Engineer's Status During Construction

The Engineer will be the Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of the Engineer as Owner's representative during construction as defined in these General Conditions shall not be extended without written consent of the Owner and the Engineer.

The Engineer will make periodic visits to the site to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. He will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. His efforts will be directed toward providing assurance for Owner that the completed project will conform to the requirements as an experienced and qualified design professional, he will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defects and deficiencies in the Work of Contractors.

The Engineer will issue with reasonable promptness such written clarifications or interpretations of the Contract Documents (in the form of Drawings or otherwise) as he may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If Contractor believes that a written clarification and interpretation entitles him to an increase in the Contract Price, he may make claim therefore, as provided in these Specifications.

The Engineer will have authority to disapprove or reject Work which is "defective" (which term is hereinafter used to describe Work that is unsatisfactory, faulty or defective, or does not conform to the requirements of the Contract Documents or does not meet the requirements of any inspection, test or approval referred to in these Specifications or has been damaged prior to approval of final payment.) He will also have authority to require special inspection or testing of the Work as provided in these specifications whether or not the Work is fabricated, installed or completed.

The Engineer is responsible for review and approval of Shop Drawings and samples in accordance with Article 21 of these General Conditions.

The Engineer has responsibilities for preparation of Change Orders for execution by the Owner in accordance with Article 29 of these General Conditions.

In accordance with Article 27 of these General Conditions, the Engineer shall decide claims of the Owner or Contractors and interpret the Contract Documents.

The Engineer shall faithfully discharge his responsibilities with regard to Applications for Payment as described in Articles 42, 43, 44 and 46 of these General Conditions.

If Owner and Engineer agree, the Engineer will furnish a Resident Project Representative and/or inspector to assist the Engineer in carrying out his responsibilities at the site. The duties, responsibilities and authority of any such representative shall be as set forth in Article 28 of these General Conditions.

Neither Engineer's authority to act under this Article 26 or elsewhere in the Contract Documents nor any decision made by him in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of Engineer to Contractor, any Subcontractor, any material man, fabricator, supplier, or any of their agents or employees or any other person performing any of the work.

The Engineer will not be responsible for Contractor's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and he will not be responsible for Contractor's failure to perform the work in accordance with the Contract Documents.

The Engineer will not be responsible for the acts or omissions of Contractor, or any Subcontractors, or any of his or their agents or employees, or any other persons at the site or otherwise performing any of the work.

27. Engineer's Decision on Disagreements

Engineer will be the interpreter of the requirements of the Contract Documents and the judge of the performance thereunder. In his capacity as interpreter and judge, he will exercise his best efforts to insure faithful performance by both Owner and Contractor. He will not show partiality to either and will not be liable for the result of any interpretation or decision rendered in good faith. Claims, disputes and other matters relating to the execution and progress of the work or the interpretation of or performance under the Contract Documents shall be referred to Engineer for decision; which he will render in writing within a reasonable time.

Either Owner or Contractor may request arbitration with respect to any such claim, dispute or other matter that has been referred to Engineer, except any which have been waived by the making or acceptance of final payment as provided in Article 46, such arbitration to be in accordance with Article 50. However, no request for arbitration of any such claim, dispute or other matter shall be made until the earlier of (a) the date on which Engineer has rendered his decision, or (b) the tenth day after parties have presented their evidence to Engineer if he has not rendered his written decision before that date. No request for arbitration shall be made later than thirty days after the date on which Engineer rendered his written decision in respect of the claim, dispute or other matter as to which arbitration is sought; and the failure to request arbitration within said thirty days' period shall result in Engineer's decision being final and binding upon Owner and Contractor. If Engineer renders a decision after arbitration proceedings have been initiated, such decision may be entered as evidence but shall not supersede the arbitration proceedings, except where the decision is acceptable to the parties concerned.

28. Status of Engineer's Project Representative

Resident Project Representative is Engineer's Agent and shall act as directed by and under the supervision of Engineer. He shall confer with Engineer regarding his actions. His dealings in matters pertaining to the on-site work will in general be only with Engineer and Contractor. His dealings with Subcontractors will only be through or with the full knowledge of Contractor or his Superintendent. He shall generally communicate with Owner only through or as directed by Engineer.

Resident Project Representative shall:

- a. Schedules: Review the progress schedule, schedule of Shop Drawing submissions, schedule of values and other schedules prepared by Contractor and consult with Engineer concerning their acceptability.
- b. Conferences: Attend pre construction conferences. Arrange a schedule of progress meetings and other job conferences as required in consultation with Engineer and notify in advance those expected to attend. Attend meetings, and maintain and circulate copies of minutes thereof.
- c. Liaison:
 1. Serve as Engineer's liaison with Contractor working principally through Contractor's Superintendent and assist him in understanding the intent of the Contract Documents. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-site operations.
 2. As requested by Engineer, assist in obtaining from Owner additional details or information, when required at the job site for proper execution of the work.
 3. In the interest of preserving the proper channels of communication, advise Engineer of any direct communication between Owner and Contractor.
- d. Shop Drawings and Samples:
 1. Receive and record date of receipt of Shop Drawings and samples which have been approved by Engineer.

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2. Receive samples which are furnished at the site by Contractor for Engineer's approval, and notify Engineer of their availability for examination.
 3. Advise Engineer and Contractor or his Superintendent immediately of the commencement of any Work requiring a Shop Drawing or sample submission if the submission has not been approved by Engineer.
- e. Review of Work, Rejection of Defective Work, Inspections and Tests:
1. Conduct on-site observations of the Work in progress to assist Engineer in determining that the project is proceeding in accordance with the Contract Documents and that completed Work will conform to the Contract Documents.
 2. Report to Engineer whenever he believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or has been damaged, or does not meet the requirements of any inspections, tests or approvals required to be made; and advise Engineer when he believes Work should be corrected or rejected or should be uncovered for observation, or requires special testing or inspection.
 3. Verify that tests, equipment and system's startups and operating and maintenance instructions are conducted as required by the Contract Documents and in presence of the required personnel, and that Contractor maintains adequate records thereof; observe, record and report to Engineer appropriate details relative to the test procedures and startups.
 4. Accompany Owner and visiting inspectors representing public or other agencies having jurisdiction over the Project, record the outcome of these inspections and report to Engineer.
- f. Interpretation of Contract Documents: Transmit to Contractor clarification and interpretation of the Contract Documents as issued by Engineer.
- g. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report them with recommendations to Engineer.
- h. Records:
1. Maintain at the job site orderly files for correspondence, reports of job conferences, Shop Drawings and sample submissions, reproductions of original Contract Documents including all addenda, change orders, field orders, additional Drawings issued subsequent to the execution of the Contract, Engineer's clarifications and interpretations of the Contract Documents, progress reports and other project-related documents.
 2. Keep a diary or log book, recording hours on the job site, weather conditions, data relative to questions of extras or deductions, list of principal visitors, daily activities, decisions, observations in general and specific observations in more detail as in the case of observing test procedures. Send Copies to Engineer.
 3. Record names, address and telephone numbers of all Contractors, Subcontractors and major suppliers of equipment and materials.
 4. Advise Engineer whenever Contractor is not currently maintaining an up-to-date copy of Record Drawings at the site.

- i. Reports:
 - 1. Furnish Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the approved progress schedule, schedule of Shop Drawing submissions and other schedules.
 - 2. Consult with Engineer in advance of scheduled major tests, inspections or start of important phases of the Work.
- j. Payment Requisitions: Review Applications for Payment with Contractor for compliance with the established procedure for their submission and forward them with recommendations to Engineer, noting particularly their relation to the schedule of values, Work completed and materials and equipment delivered at the site.
- k. Guarantees, Certificates, Maintenance and Operation Manuals: During the course of the Work verify that guarantees, certificates, maintenance and operation manuals and other data required to be assembled and furnished by Contractor are applicable to the items actually installed and deliver these data to Engineer for his review and forwarding to Owner prior to final acceptance of the Project.
- l. Completion:
 - 1. Before Engineer issues a Certificate of Substantial Completion, submit to Contractor a list of observed items requiring correction.
 - 2. Conduct final inspection in the company of Engineer, Owner and Contractor and prepare a final list of items to be corrected.
 - 3. Verify that all items on final list have been corrected and make recommendations to Engineer concerning acceptance.

Except upon written instructions of Engineer, Resident Project Representative:

- a. Shall not authorize any deviation from the Contract Documents or approve any substitute materials or equipment.
- b. Shall not undertake any of the responsibilities of Contractor, Subcontractor or Contractor's Superintendent.
- c. Shall not expedite Work for the Contractor.
- d. Shall not advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract Documents.
- e. Shall not advise on or issue directions as to safety precautions and programs in connection with the Work.
- f. Shall not authorize Owner to occupy the Project in whole or in part.
- g. Shall not participate in specialized field or laboratory tests or inspections conducted by others.
- h. Shall not assist Contractor in maintaining up-to-date copy of Record Drawings.

29. Changes in the Work

Without invalidating the Agreement, Owner may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by Change Orders. Upon receipt of a Change

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Order, Contractor shall proceed with the Work involved. All such Work shall be executed under the applicable conditions of the Contract Documents. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made as provided in Article 30 on the basis of a claim made by either party.

Engineer may authorize minor changes or alterations in the Work not involving extra cost and not inconsistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order. If Contractor believes that any minor change or alteration authorized by Engineer entitles him to an increase in the Contract Price, he may make a claim therefore, as provided in Article 30.

Additional work performed by Contractor without authorization of a Change Order will not entitle him to an increase in the Contract Sum or an extension of the Contract Time, except in the case of an emergency as provided in Article 20.

Owner shall execute appropriate Change Orders prepared by Engineer covering changes in the Work to be performed, work performed in an emergency and any other claim of the Contractor for a change in the Contract Time or the Contract Sum which is approved by the Engineer.

It is the Contractor's responsibility to notify his surety of any changes affecting the general scope of the Work or change in the Contract Sum and the amount of the applicable bonds shall be adjusted accordingly. Contractor shall furnish proof of such adjustment to Owner.

30. Changes of Contract Price

The Contract Price constitutes the total compensation payable to Contractor for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by Contractor shall be at his expense without change in the Contract Price.

The Contract Price may only be changed by a Change Order. Any claim for an increase in the Contract Price shall be based on written notice delivered to Owner and Engineer within fifteen days of the occurrence of the event giving rise to the claim. Notice of the amount of the claim with supporting data shall be delivered within forty-seven days of such occurrence unless Engineer allows an additional period of time to ascertain accurate cost data. All claims for adjustment in the Contract Price shall be determined by Engineer if Owner and Contractor cannot otherwise agree on the amount involved. Any change in the Contract Price resulting from any such claim shall be incorporated in a Change Order.

The value of any Work covered by a Change Order shall be determined in one or more of the following ways:

- a. By estimate and mutual acceptance in a lump sum.
- b. By unit prices named in the Contract or subsequently agreed upon.
- c. On the basis of the cost of the Work plus a Contractor's fee for overhead and profit as provided in this Article.

In Case "c", the Contractor shall keep and present in such form as the Engineer may direct, a correct account of all items comprising the net cost of such work, together with vouchers. The determination of the Engineer shall be final upon all questions of the amount and cost of extra work and changes in the work.

The term Cost of the Work means the sum of all costs necessarily incurred and paid by the Contractor in the proper performance of the Work. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in paragraph 30.6.

30.1 Payroll cost for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Payroll costs for employees not

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employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foreman at the site. The expenses of performing work after regular working hours, on Sunday or legal holidays shall be included in the above to the extent authorized by Owner.

30.2 Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and manufacturer's field service required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds, and all returns from sale of surplus materials and equipment shall accrue to Owner and Contractor shall make provisions so that they may be obtained.

30.3 Payments made by Contractor to the Subcontractors for work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from Subcontractors acceptable to him and shall deliver such bids to Owner who will then determine with the advice of Engineer, which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work, plus a Fee, the Cost of the Work shall be determined in accordance with paragraphs 30.4 and 30.5. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

30.4 Cost of special consultants (including, but not limited to, Engineers, architects, testing laboratories, surveyors, lawyers and accountants) employed for services specifically related to the Work.

30.5 Supplemental costs including the following:

The proportions of necessary transportation, traveling and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

Costs, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workmen, which are consumed in the performance of the work, and cost less market value of such items used but not consumed which remain the property of Contractor.

Rentals of all construction equipment and machinery and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer and the costs of transportation (shall not exceed 100 miles), loading, unloading, installation, dismantling and removing thereof ; all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

Sales, use or similar taxes related to the Work, and for which Contractor is liable, imposed by any governmental authority.

Deposits lost for causes other than Contractor's negligence, royalty payments and fees for permits and licenses.

Losses, damages and expenses, not compensated by insurance or otherwise, sustained by Contractor in connection with the execution of, and to, the Work, provided they have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's Fee. If, however, any such loss or damage requires reconstruction and Contractor is placed in charge thereof, he shall be paid for his services a fee proportionate to that stated in paragraph 30.6.

The cost of utilities, fuel and sanitary facilities at the site.

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Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

Cost of premiums for bonds and insurance which Owner is required to pay.

30.6 The term Cost of the Work shall not include any of the following:

Payroll costs and other compensation of Contractor's officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, lawyers, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by Contractor whether at the site or in his principal or a branch office for general administration of the work and not specifically included in the schedule referred to in subparagraph 30.1 -- all of which are to be considered administrative costs covered by the Contractor's Fee.

Expenses of Contractor's principal and branch offices other than his office at the site.

Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the work and charges against Contractor for delinquent payments.

Cost of premiums for all bonds and for all insurance policies whether or not Contractor is required by the Contract Documents to purchase and maintain the same (except as otherwise provided in subparagraph 30.5).

Cost due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including, but not limited to, the correction of defective work, disposal of materials or equipment wrongly supplied and making good any damage to property.

Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraphs 30.1 - 30.5.

30.7 The Contractor's Fee which shall be allowed to Contractor for his overhead and profit shall be determined as follows:

A mutually acceptable fixed fee; or if none can be agreed upon,

A fee based on the following percentages of the various portions of the Cost of the Work:

- a. For costs incurred under paragraph 30.1 and 30.2, the Contractor's Fee shall be ten (10%) percent.
- b. For costs incurred under paragraph 30.3, the Contractor's Fee shall be five (5%) percent; and if a subcontract is on the basis of Cost Plus a Fee, the maximum allowable to the subcontractor as a fee for overhead and profit shall be ten (10%) percent.
- c. No fee shall be payable on the basis of costs itemized under paragraph 30.4, 30.5 and 30.6.

The amount of credit to be allowed by Contractor to Owner for any such change which results in a new decrease in cost, will be the amount of the actual net decrease. When both additions and credits are involved in any one change, the combined overhead and profit shall be figured on the basis of the net increase, if any.

Whenever the cost of any work is to be determined pursuant to Article 30, Contractor will submit in form prescribed by the Engineer an itemized cost breakdown together with supporting data.

In all cases where Extra Work or Changes are covered by unit prices set forth in the Contract, the value of such Extra Work or Changes shall be determined only upon the basis of such unit prices.

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Pending final determination of value, payments on accounts of Extra Work or Changes shall be made only upon the estimate of the Engineer.

30.8 All Change Orders to the construction contract (if required) must be negotiated pursuant to 40 CFR 35.938.5.

31. Cash Allowance

The Contractor shall include in the contract sum all allowances named in the Contract Documents and shall cause the Work so covered to be done by such Contractors and for such sums as the Engineer may direct, the contract sum being adjusted in conformity therewith. The Contractor declares that the contract sum includes such sums for expenses and profit on account of cash allowance as he deems proper. No demand for expense or profit other than those included in the contract sum shall be allowed.

32. Delays and Extension of Time

The Contract Time may only be changed by a Change Order. Any claim for an extension in the Contract Time shall be based on written notice delivered to Owner and Engineer within fifteen (15) days of the occurrence of the event giving rise to the claim. Notice of the extent of the claim with supporting data shall be delivered within forty-five (45) days of such occurrence unless Engineer allows an additional period of time to ascertain more accurate data. All claims for adjustment in the Contract Time shall be determined by Engineer if Owner and Contractor cannot otherwise agree. Any change in the Contract Time resulting from any such claim shall be incorporated in a Change Order.

The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of Contractor if he makes a claim therefore as provided in this Article. Such delays shall include, but not be restricted to, acts or neglect by any separate Contractor employed by Owner, fires, floods, labor disputes, epidemics, abnormal weather conditions, or acts of God.

All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article shall not exclude recovery for damages (including compensation for additional professional services) for delay by either party.

33. Warranty and Guarantee

Contractor warrants and guarantees to Owner and Engineer that all materials and equipment will be new unless otherwise specified and that all work will be of good quality and free from faults or defects and in accordance with the requirements of the Contract Documents and of any inspections, tests or approval referred to in Article 34. All unsatisfactory Work, all faulty or defective Work, and all Work not conforming to the requirements of the Contract Documents at the time of acceptance thereof or of such inspection, tests or approvals, shall be considered defective. Prompt notice of all defects shall be given to Contractor. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in these Contract Documents.

34. Tests and Inspections

If the Contract Documents, Laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any Work to specifically be inspected, tested, or approved by some public body, Contractor shall assume full responsibility therefor, pay all costs in connection therewith and furnish Engineer the required certificates of inspection, testing or approval. All other inspections, tests and approvals required by the Contract Documents shall be performed by organizations acceptable to Owner and Contractor and the costs thereof shall be borne by Owner unless otherwise specified.

The Contractor shall give Engineer timely notice of readiness of the Work for all inspections, tests or approvals. If such Work required so to be inspected, tested or approved is covered without written approval of Engineer, it must, if requested by Engineer, be uncovered for observation, and such uncovering shall be at Contractor's expense unless Contractor has given Engineer timely notice of his

intention to cover such Work and Engineer has not acted with reasonable promptness in response to such notice.

Neither observations by Engineer nor inspections, tests or approvals by persons other than Contractor shall relieve Contractor from his obligations to perform the Work in accordance with the requirements of the Contract Documents.

35. Access to Work

Engineer and his representatives and other representatives of Owner will at reasonable times have access to the work. Contractor shall provide proper and safe facilities for such access and observation of the Work and also for any inspection or testing thereof by others.

36. Uncovering Work

If any Work should be covered contrary to the written request of the Engineer, it must, if required by the Engineer be uncovered for examination and replace at the Contractor's expense.

If any Work has been covered which Engineer has not specifically requested to observe prior to its being covered, or if Engineer considers it necessary or advisable that covered Work be inspected or tested by others, Contractor at Engineer's request, shall uncover, expose or otherwise make available for observation, inspection or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective, Contractor shall bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, including compensation for additional professional services, and an appropriate deductive Change Order shall be issued. If, however, such Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction if he makes a claim therefore as provided in these Specifications.

37. Stopping the Work

If the Work is defective, or Contractor fails to supply sufficient skilled workmen or suitable materials or equipment, or if Contractor fails to make prompt payments to Subcontractors or for labor, materials or equipment, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor or any other party.

38. Correction of Work Before Final Payment

If required by Engineer prior to approval of final payment, Contractor shall promptly, without cost to Owner and as specified by Engineer, either correct any defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by Engineer, remove it from the site and replace it with non-defective Work. If Contractor does not correct such defective Work or remove and replace such rejected Work within a reasonable time, all as specified in a written notice from Engineer, Owner may have the deficiency corrected or the rejected Work removed and replaced. All direct or indirect costs of such correction or removal and replacement, including compensation for additional professional services, shall be paid by Contractor and an appropriate deductive Change Order shall be issued. Contractor shall also bear the expense of making good all Work of others destroyed or damaged by his correction, removal or replacement of his defective Work.

39. One Year Correction Period

If, after the approval of final payment and prior to the expiration of one year after the date of substantial completion or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, any Work is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions, either correct such defective Work, or, if it has been rejected by Owner, remove it from the site and replace it with non-

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defective Work. If Contractor does not promptly comply with the terms of such instructions, Owner may have the defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, shall be paid by Contractor.

40. Acceptance of Defective Work

If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to approval of final payment, also Engineer) prefers to accept it, he may do so. In such case, if acceptance occurs prior to approval of final payment, a Change Order shall be issued incorporating the necessary revisions in the Contract Documents, including appropriate reduction in the Contract Price; or, if the acceptance amount shall be approval of final payment, an appropriate amount shall be paid by Contractor to Owner.

41. Neglected Work By Contractor

If Contractor should fail to prosecute the work in accordance with the Contract Documents, including any requirements of the progress schedule, Owner, after seven (7) days' written notice to Contractor may, without prejudice to any other remedy he may have, make good such deficiencies and the cost thereof (including compensation for additional professional services) shall be charged against Contractor if Engineer approved such action, in which case a Change Order shall be issued incorporating an appropriate reduction in the Contract Price. If the payments then or thereafter due Contractor are not sufficient to cover such amount, Contractor shall pay the difference to Owner.

42. Application for Payment

At least ten days prior to submitting the first Application for a progress payment, Contractor shall submit a progress schedule, a final schedule of Shop Drawing submission and a schedule of values of the Work. These schedules shall be satisfactory in form and substance to Engineer. The schedule of values shall include quantities and unit prices aggregating the Contract Price, and shall subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Upon approval of the schedules of values by Engineer, it shall be incorporated into the form of Application for Payment furnished by Engineer.

At least ten days before each progress payment falls due (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such data and schedules as Engineer may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by such data, satisfactory to Owner, as will establish Owner's title to the material and equipment and protect his interest therein, including applicable insurance. Each subsequent Application for Payment shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied to discharge in full all of Contractor's obligations reflected in prior Applications for Payment.

Retainage shall be an amount equal to 10% of the Work completed until 50% of the Work has been completed. At 50% completion, further partial payments shall be made in full to the Contractor and no additional amounts may be retained unless the Engineer certifies that the job is not proceeding satisfactorily, but amounts previously retained shall not be paid to the Contractor. At 50% completion or any time thereafter when the progress of the Work is not satisfactory, additional amounts may be retained but in no event shall the total retainage be more than 10% of the value of the work completed. Upon substantial completion of the work, any amount retained may be paid to the Contractor. When the Work has been substantially completed except for Work which cannot be completed because of weather conditions, lack of materials or other reasons which in the judgment of the Owner are valid reasons for non-completion, the Owner may make additional payments, retaining at all times an amount sufficient to cover the estimated cost of the Work still to be completed.

SECTION 00700 - GENERAL CONDITIONS

Contractor warrants and guarantees that title to all Work, materials and equipment covered by any Application of Payment, whether incorporated in the Project or not, will pass to Owner at the time of payment free and clear of all liens, claims, security interests and encumbrances (hereafter in these General Conditions referred to as "Liens").

43. Approval of Payments

Engineer will, within ten days after receipt of each Application for Payment, either indicate in writing his approval of payment and present the Application to Owner, or return the Application to Contractor indicating in writing his reasons for refusing to approve payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application. Owner shall, within ten days of presentation to him of an approved Application for Payment, pay Contractor the amount approved by Engineer.

Engineer's approval of any payment requested in an Application for Payment will constitute a representation by him to Owner, based on Engineer's on-site observations of the Work in progress as an experienced and qualified design professional and on his review of the Application for Payment and the accompanying data and schedules that the Work has progressed to the point indicated; that, to the best of his knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning Project upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents and any qualifications stated in his approval); and that Contractor is entitled to payment of the amount approved. However, by approving any such payment Engineer will not thereby be deemed to have represented that he made exhaustive or continuous on-site inspections to check the quality or the quantity of the Work, or that he has reviewed the means, methods, techniques, sequences, and procedures of construction, or that he has made any examination to ascertain how or for what purpose Contractor has used the moneys paid or to be paid to him on account of the Contract Price, or that title to any Work, materials or equipment has passed to Owner free and clear of any Liens.

Engineer's approval of final payment will constitute an additional representation by him to Owner that the conditions precedent to Contractor's being entitled to final payment as set forth in Article 46 has been fulfilled.

Engineer may refuse to approve the whole or any part of any payment if, in his opinion, it would be incorrect to make such representation to Owner. He may also refuse to approve any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously approved, to such extent as may be necessary in his opinion to protect Owner from loss because:

- a. The Work is defective, or completed Work has been damaged requiring correction or replacement.
- b. Claims or Liens have been filed or there is reasonable cause to believe such may be filed.
- c. The Contract Price has been reduced because of Modifications.
- d. Owner has been required to correct defective Work or complete the Work in accordance with Article 41.
- e. Unsatisfactory prosecution of the Work, including failure to furnish acceptable submittals or to clean up.

When the above grounds are removed, payment shall be made for amounts withheld because of them.

44. Substantial Completion

Prior to final payment, Contractor may, in writing to Owner and Engineer, certify that the entire Project is substantially complete and request that the Engineer issue a certificate of Substantial Completion. Within a reasonable time thereafter, Owner, Contractor and Engineer shall make an inspection of the Project to

SECTION 00700 - GENERAL CONDITIONS

determine the status of completion. If Engineer does not consider the Project substantially complete, he will notify Contractor in writing giving his reasons therefore. If Engineer considers the Project substantially complete, he will prepare and deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion and the responsibilities between Owner and Contractor for maintenance, heat and utilities. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment, and the certificate shall fix the time within which such items shall be completed or corrected, said time to be within the Contract Time. Owner shall have seven (7) days after receipt of the tentative certificate during which he may make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the project is not substantially complete, he will within fourteen days (14) days after submission of the tentative certificate to Owner notify Contractor in writing, stating his reasons therefore. If, after consideration of Owner's objections, Engineer considers the project substantially complete, he will within said fourteen days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as he believes justified after consideration of the objections from Owner. The Owner may reduce the retainage to five (5%) percent of the total Contract Price after substantial completion. Owner shall have the right to exclude Contractor from the Project after the date of Substantial Completion, but Owner shall allow Contractor reasonable access to complete or correct items on the tentative list.

45. Partial Utilization

Prior to final payment, Owner may request Contractor in writing to permit him to use a specified part of the Project which he believes he may use without significant interference with construction of other parts of the Project. If Contractor agrees, he will certify to Owner and Engineer that said part of the Project is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Project. Within a reasonable time thereafter Owner, Contractor and Engineer shall make an inspection of that part of the Project to determine its status of completion. If Engineer does not consider that it is substantially complete, he will notify Owner and Contractor in writing giving his reasons therefore. If Engineer considers that part of the Project to be substantially complete, he will execute and deliver to Owner and Contractor a certificate to that effect, fixing the date of Substantial Completion as to that part of the Project, attaching thereto a tentative list of items to be completed or corrected before final payment and fixing the responsibility between Owner and Contractor for maintenance, heat and utilities as to that part of the Project. Owner shall have the right to exclude Contractor from any part of the Project which Engineer has so certified to be substantially complete, but Owner shall allow Contractor reasonable access to complete or correct items on the tentative list.

Insurance carrier shall be informed by the Contractor of occupancy and adjustments made so that coverage of construction will not be invalidated.

46. Final Payment

Upon written notice from Contractor that the Project is complete, Engineer will make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to remedy such deficiencies.

After Contractor has completed all such corrections to the satisfaction of Engineer and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection and other documents -- all as required by the Contract Documents, he may make Application for final Payment following the procedure for progress payments. The final Application for Payment shall be accompanied by such date and scheduling as Engineer may reasonably require, together with complete and legally effective releases or waivers (satisfactory to Owner) of all Liens arising out of the Contract Documents and the labor and services performed and the material and equipment furnished hereunder. In lieu thereof and as approved by Owner, Contractor may furnish receipts or releases in full, an affidavit of Contractor that the releases and receipts include all labor, services, material and equipment for which a Lien could be filled, and that all payrolls, material and equipment bills, and other indebtedness connected with the work for which Owner or his property might in any way be responsible, have been paid or

SECTION 00700 - GENERAL CONDITIONS

otherwise satisfied; and consent of the Surety, if any, to final payment. If any Subcontractor, material man, fabricator or supplier fails to furnish a release or receipt in full, Contractor may furnish a Bond or other collateral satisfactory to Owner to indemnify him against any Lien.

If, on the basis of his observation and review of the Work during construction, his final inspection and his review of the final Application for Payment -- all required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor has fulfilled all of his obligations under the Contract Documents, he will, within ten (10) days after receipt of the final Application for Payment, indicate in writing his approval of payment and present the Application to Owner for payment. Thereupon Engineer will give written notice to Owner and Contractor that the Work is acceptable. Otherwise, he will return the Application to Contractor, indicating in writing his reasons for refusing to approve final payment, in which case Contractor shall make the necessary corrections and resubmit the Application. Owner shall, within ten (10) days of presentation to him of an approved final Application for Payment, pay Contractor the amount approved by Engineer.

If after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of Contractor and Engineer so confirms, Owner shall, upon certification by Engineer and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work is not fully completed or corrected and is less than the retainage stipulated in the Agreement, and if Bonds have been furnished, the written consent of the Surety to the payment of the balance due for that portion of the Work fully completed and accepted, shall be submitted by the Contractor to the Engineer prior to certification of such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

The making and acceptance of final payment shall constitute:

- a. a waiver of all claims by Owner against Contractor other than those arising from unsettled Liens, from defective Work appearing after final inspection or from failure to comply with the requirements of the Contract Documents or the terms of any special guarantees specified therein, and
- b. a waiver of all claims by Contractor against Owner other than those previously made in writing and still unsettled.

Contractor's obligation to perform the Work and complete the Project in accordance with the Contract Documents shall be absolute. Neither approval of any progress or final payment by Engineer, nor the issuance of a certificate of Substantial Completion, nor any payment by Owner to Contractor under the Contract Documents, nor any use or occupancy of the Project or any part thereof by Owner, nor any act of acceptance by Owner nor any failure to do so, nor any correction of defective Work by Owner shall constitute an acceptance of Work not in accordance with the Contract Documents.

47. Owner's Right to Suspend Work

Owner may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety (90) days by notice in writing to Contractor and Engineer which shall fix the date on which Work shall be resumed. Contractor shall resume the Work on the date so fixed. Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if he makes a claim therefore as provided in these Contract Documents.

48. Owner's Right to Terminate Contract

If the Contractor should be adjudged a bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper material, or if he should fail to make prompt payment to subcontractors or for material or labor, or persistently disregard laws, ordinances or the instruction of the Engineer, or otherwise be guilty of a substantial violation of any provision of the Contract, then the Owner,

SECTION 00700 - GENERAL CONDITIONS

upon the certificate of the Engineer that sufficient cause exists to justify such action, may without prejudice to any other right or remedy and after giving the Contractor and his Surety a minimum of seven (7) days from delivery of a written notice, take possession of the premises and of all materials, tools and appliances thereof and finish the Work by whatever method he may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price shall exceed the expense of finishing the Work including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If any such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner as herein provided, and the damage incurred through the Contractor's default, shall be certified by the Engineer and incorporated in a Change Order.

Where the Contractor's services have been so terminated by the Owner, said termination shall not affect any right of the Owner against the Contractor then existing or which may thereafter accrue. Any retention or payment of moneys by the Owner due the Contractor will not release the Contractor from compliance with the Contract Documents.

After ten (10) days from delivery of a written notice to the Contractor and the Engineer, the Owner may, without cause and without prejudice to any other right or remedy, elect to abandon the Project and terminate the Contract. In such case, the Contractor shall be paid for all Work executed and any expense sustained plus reasonable profit.

49. Contractor's Right to Stop Work or Terminate

If, through no act or fault of Contractor the Work is suspended for a period of more than ninety (90) days by Owner or under an order of court or other public authority, or Engineer fails to act on any Application for Payment within thirty (30) days after it is submitted, or Owner fails to pay Contractor any sum approved by Engineer or awarded by arbitrators within thirty (30) days of its approval and presentation, then Contractor may, upon fifteen (15) days' written notice to Owner and Engineer, terminate the Agreement and recover from Owner payment for all Work executed and any expense sustained plus a reasonable profit. In addition and in lieu of terminating the Agreement, if Engineer has failed to act on an Application for Payment or Owner has failed to make any payment as aforesaid, Contractor may upon fifteen (15) days' notice to Owner and Engineer stop the Work until he has been paid all amounts then due.

50. Arbitration by Mutual Consent

All claims, disputes and other matters in question arising out of, or relating to, this Agreement or the breach thereof except for claims which have been waived by the making or acceptance of final payment, may be decided by arbitration if the parties mutually agree. Any agreement to arbitrate shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in any court having jurisdiction thereof.

Notice of the request for arbitration shall be filed in writing with the other party to the Agreement and a copy shall be filed with Engineer. Request for arbitration shall in no event be made on any claim, dispute or other matter in question which would be barred by the applicable statute of limitations.

The Contractor will carry on the Work and maintain the progress schedule during any arbitration proceedings, unless otherwise mutually agreed in writing.

51. Computation of Time

When any period of time is referred to in the Contract Documents by days, it shall be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day shall be omitted from the computation.

52. Assignments

Neither the Contractor nor the Owner shall sell, transfer, assign or otherwise dispose of the Contract or any portion thereof, or of his right, title of interest herein, or his obligations thereunder, without written consent of the other party.

53. Ownership of Drawings

All Drawings, Specifications and copies thereof furnished by the Engineer are the property of the Engineer. They are not to be used on other work and, with the exception of the signed Contract set, are to be returned to the Engineer or his representative upon request, at the completion of the Work.

54. Compliance With Prevailing Wage Law (Where Applicable)

Full compliance by the Contractor and any Subcontractor as to their duties prescribed by the applicable State or Federal Minimum Wage Laws is required in the performance of Work under this Contract.

The Contractor will be required to accept liability for payment of all payroll taxes or deductions required by local and federal law, including old age pension, social security or annuities. Workmen's Compensation Insurance shall be carried to the full amounts as required by local statutes.

Incorporated within the Labor Regulations and Wage Rates is a classified list of labor positions used in this work. Opposite the positions are shown the general prevailing hourly rates of wages as ascertained for this contract.

In case it shall become necessary for the Contractor or any Subcontractor to employ on the work under this contract any person in a trade or occupation (except executive, administrative or supervisory workers) for which no wage rates are specified herein, the Contractor shall immediately notify the Engineer who will promptly thereafter furnish the Contractor with the general prevailing rates. The rates thus furnished shall be applicable for such trade or occupation from the time of initial employment of the person or persons affected and during the continuance of such employment.

The Contractor and any Subcontractor shall post and keep posted in a conspicuous place at the site of the Work a copy of the prevailing rates of wages and work hours for each classification of laborers employed in the performance of this Contract.

55. Measurement and Computation of Quantities

Computation of quantities that will be the basis for payment estimates, both monthly and final, will be made by the Engineer. In general, all payment-estimates will be checked and approved by a representative of the funding agency before payment.

No extra measurements of any kind, unless specially noted shall be allowed in measuring the Work under these Specifications; but the length, area solid contents or number only shall be considered as the basis for payment as hereinafter specified.

Where the computation of areas or volumes by exact geometric methods is unduly laborious or refined, the planimeter shall be held an instrument of precision and may be used in the determination of quantities upon which payments are based.

The measurements of the Engineer as to the amount of Work done shall be final and conclusive. Payments shall be made upon the Work done within the lines prescribed by the Drawings or Specifications and in accordance with the unit prices for the items under which the Work is done.

56. Project Signs

The Contractor shall erect a project sign at a prominent location on the Project. The sign shall be four feet by eight feet, two colors and shall contain the name of the Project, the Owner, the Engineer, and the Contractor. The lettering shall be approved by the Engineer prior to making the signs.

End of Section

Construction Sign

Matt Bevin
Governor

Greg Thomas
Secretary

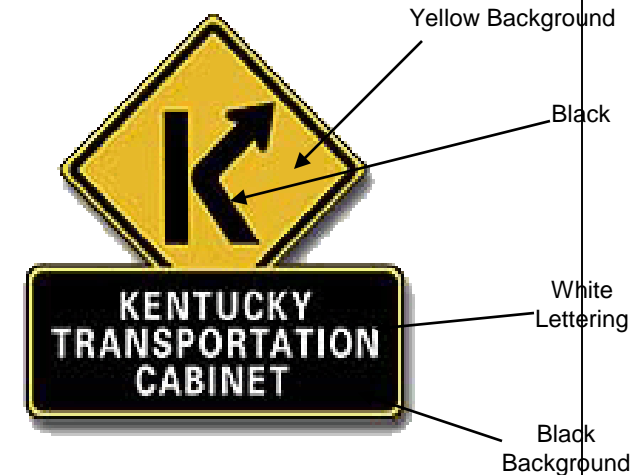
BRADSHAW MILL ROAD – BRIDGE REPLACEMENT

Project Sponsor: Garrard County Fiscal Court

**Sponsor Address: 15 Public Square, Lancaster, KY
40444**

Engineer: MSE of Kentucky, Inc.

Contractor:



**This project is funded by State Funds
administered by the Kentucky Transportation
Cabinet**

Equal Opportunity Employer

Sign Dimensions: 1200mm x 2400mm x 19 mm (app. 4' x 8' x 3/4") Plywood Panel (APA Rated A-B grade – Exterior)

SECTION 00800 - SPECIAL CONDITIONS

1. Description of the Work and Designation of the Owner

These specifications and accompanying plans describe the work to be done and the materials to be furnished for the construction of Contract 1: BRADSHAW MILL ROAD (CR 1011) – BRIDGE REPLACEMENT.

All references to the Owner in these specifications, Contract Documents and plans shall mean the Garrard County, KY Fiscal Court.

2. Available Funds

The attention of all bidders is directed to the fact that the funds will be made available for the award of the contract from the Owner.

3. Time of Completion and Liquidated Damages

The time allowed for completion of each contract is 120 calendar days. The time allowed for completion shall begin at midnight, local time, on the date which the Owner shall instruct the Contractor, in writing, to start work, but not later than 10 days after Notice to Proceed.

The Contract completion time stipulated above includes an allowance for an average number of inclement weather days as follows:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Precip.	7	7	9	8	8	8	8	7	6	5	6	7
Freeze	10	6	1								1	5

When number of days (including Saturdays, Sundays and Holidays) of precipitation in excess of 0.1" per day or maximum daily temperatures of 32 degrees F exceed those shown above in any month, the Contractor shall be entitled to an equal number of additional days for Contract Completion.

It is understood that time is the essence of this contract and that the Owner will sustain damages, monetary and otherwise, in the event of delay in completion of the work hereby contracted.

Therefore, if the said Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as part consideration for the awarding of this contract, to pay the Owner the amount specified in the contract, not as a penalty, but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the Contractor shall be in default after the time stipulated in the contract for completing the work.

The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the extreme difficulty in fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain and said amount shall be retained from time to time by the Owner from current periodical estimates.

Liquidated damages are fixed at \$1,000 per day for each calendar day of overrun beyond the date set for completion or authorized extension thereof for the contract.

4. Insurance

Insurance is to be furnished by the Contractor for the benefit of the Owner, Contractor and subcontractors as their interests may appear. The contractor shall procure and maintain the following insurance in addition to the insurance required by law:

SECTION 00800 - SPECIAL CONDITIONS

- (a) Commercial General Liability-Occurrence form-not less than \$2,000,000 General Aggregate, \$2,000,000 Products & Completed Aggregate, \$1,000,000 Personal and Advertising, \$1,000,000 each occurrence.
- (b) Automobile Liability - \$1,000,000 per accident
- (c) Employers Liability:
 - (1) \$100,000 Each Accident Bodily Liability
 - (2) \$500,000 Policy Limit Bodily Injury by Disease
 - (3) \$100,000 Each Employee Bodily Injury by Disease
- (d) The insurance required above must be evidenced by a Certificate of Insurance and this Certificate of Insurance must contain one of the following statements:
 - (1) "policy contains no deductible clauses".
 - (2) "policy contains _____ (amount) deductible property damage clause but company will pay claim and collect the deductible from the insured."
- (d) Kentucky Workmen's Compensation Insurance. The contractor shall furnish evidence of coverage of all his employees or give evidence of self-insurance by submitting a copy of a certificate issued by the Workmen's Compensation Board.

The cost of insurance is incidental to all contract items. All subcontractors must meet the same minimum insurance requirements.

All policies shall provide for a minimum of fifteen (15) days written cancellation notice with notice to be given both to the Owner and the Engineer. The Owner and Engineer shall be included as additional insured parties.

5. Performance and Payment Bond

The Contractor shall furnish separate performance and payment bonds issued by an approved bonding company (in accordance with the General Conditions) in an amount at least equal to one hundred (100%) percent of the contract price, as security for the faithful performance of this contract and for the payment of persons performing labor and furnishing materials in connection with this contract. These bonds shall be executed by a company authorized to do business in the State of Kentucky and shall be signed or countersigned by a Kentucky resident agent. Bonds shall remain in effect for one year after date of final acceptance of the work.

6. Additional Bonds and Insurance

Prior to delivery of the executed Agreement by the Owner to the Contractor, the Owner may require the Contractor to furnish such other Bonds and such additional insurance, in such forms and with such sureties or insurers as the Owner may require. If such other Bonds or such other insurance are specified by written instructions given prior to opening of the bids, the premium shall be paid by the Contractor; if subsequent thereto, they shall be paid by the Owner (except as otherwise provided for bonding of substitute materials or equipment).

7. Sequence of Work

Contractor shall apply their initial forces to the point of connection to the existing system and proceed to the outlying reaches.

8. Site Dimensions

All Contractors furnishing materials and equipment for this contract shall obtain exact dimensions at the site. Scale or figure dimensions on the drawings and details show the correct size under ideal conditions and shall not, under any circumstances, be so construed as to relieve the Contractor from responsibility for taking measurements at the site and furnishing materials or equipment of the correct size.

9. Damage to Equipment Stored and/or In Place Prior to Initial Operations

Any equipment damaged or which has been subjected to possible damage by reason of inundation, improper storage and/or protection during the construction period of a project, shall be replaced with new equipment, or with the approval of the Engineer, be returned to the manufacturer of the equipment, or his authorized repair agency, for inspection and repair; provided, however, that such repair after inspection will place the equipment in new condition and restore the manufacturer's guarantee the same as for new equipment.

10. Equipment Rental - Charges for Extra Work

Equipment rental charges by the Contractor for rented equipment units used on "Extra Work" or "Changes in Work" as may be ordered and authorized by the Owner shall not exceed those charges listed in the latest edition of the "Green Book," compiled and distributed by Associated Equipment Distributors, 615 West 22nd Street, Oak Brook, Illinois 60523.

11. Salvaged Materials and Equipment

All materials and/or equipment to be removed from existing structures and not specifically specified to be reused shall remain the property of the Owner. Such materials and/or equipment shall be stored on site by the Contractor as directed by the Owner.

12. Sanitary Facilities

Each Contractor shall construct and maintain, in a sanitary condition, sanitary facilities for his employees and also employees of his subcontractors. At completion of the contract work, these sanitary facilities shall be properly disposed of.

13. Utilities

Obtaining of all utilities for construction, including power and water, shall be the responsibility of the Contractor and he shall bear the cost of all utilities used for construction. Cost of all connections and facilities for use of utilities shall be borne by the Contractor.

14. Cash Allowances

No cash allowances are included in this project. However, the Contractor is required to make labor and material allowances for unforeseen repairs, to the existing improvements as described in these specifications.

15. Nondiscrimination in Employment

During the performance of this contract, the Contractor shall not discriminate against any employee or applicant for employment because of race, creed, color or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, creed, color or national origin.

16. Minimum Wage Rates

If available, the prevailing minimum wage rates are contained in these specifications. However, applicable wage rates may be provided at any time before bids are received. In that event the wage rates will be provided by addendum to these specifications.

The Contractor will be required to pay not less than the higher of the State or Federal minimum wage rate for each job classification as and if set forth in Part V of these specification or in an addendum to the specifications. The stipulated wage rates represent prevailing minimum rates of pay allowable as determined by the appropriate governing agency and shall not be construed to mean that the Contractor may not have to pay higher rates to secure labor. No contract adjustment is permissible should this condition become applicable.

17. Property Protection

Care is to be exercised by the Contractor in all phases of construction to prevent damage and injury to the Owner's or other property.

In connection with work performed on "private property" (property other than that belonging to the Owner), the Contractor shall confine his equipment and stored materials to lands and rights-of-way provided for the project by the Owner and shall take every precaution to avoid damage to the private property owner's buildings, grounds and facilities.

Fences, hedges, shrubs, etc., within the construction limits shall be carefully removed, preserved and replaced when the back filling has been completed. If sod is damaged or not handled properly, it shall be replaced with new sod equal to existing sod at the Contractor's expense. Grassed areas, other than lawns, shall be graded, fertilized and seeded when construction is completed. When construction is completed the private property owner's facilities and grounds shall be restored to as good or better condition than found as quickly as possible at the Contractor's expense.

When directed by the Engineer, large trees or other facilities that cannot be replaced or preserved shall be removed by the Contractor. The Owner will assume responsibility for settling with the property owner for such loss. The Contractor shall be solely and entirely responsible for any damage to all other trees or facilities.

The Contractor, in the use of easements and rights-of-way, will comply with any and all agreements between the Owner and the property owner.

Carelessness on the part of the Contractor or his employees in leaving gates open, parking cars, trucks or vehicles in such a way as to interfere with farming operations will not be tolerated. Contractor shall use existing roads to transport pipe, materials and workmen to and from the job.

Foundations, adjacent to where an excavation is to be made below the bottom of the foundation, shall be supported by shoring, bracing and underpinning as long as the excavation shall remain open and the Contractor shall be held strictly responsible for any damage to said foundation.

Highway rights-of-way, railroad rights-of-way, public parks, school yards and other such properties shall be considered "private properties" for the purpose of this section.

18. Rock Excavation

It is specifically noted that separate payment for solid rock excavation will not be made under this contract, all excavation being considered "unclassified."

19. Extra Fill Material

Extra fill material required to complete the finished grading to the line and grade shown on the plans shall be obtained by the Contractor at no extra cost to the Owner above that included in the unit price bid.

20. Layout of the Work

The layout of the work shall be the responsibility of the Contractor and shall be subject to checking by the Engineer. All instruments, stakes, batter boards, barricades, traffic signs, flags and other materials necessary and personnel needed for establishing and marking lines, grades and structure location during construction, shall be furnished and paid for by the Contractor. The Contractor's personnel engaged in the layout work described herein and any aides used shall be fully capable of performing the duties set out herein.

21. Conflict With or Damage to Existing Utilities and Facilities

Insofar as location data is available to the Engineers, existing underground utilities (such as water lines, sewer lines, gas lines, telephone conduits, etc.) are accurately located on the drawings. Due, however, to the approximate nature of much of this data, the location of any particular facility can not be certified to be correct. In general, locations and elevations shown are approximate only.

Repair to existing utilities and facilities damaged by the Contractor's construction forces shall be considered as a part of the Contract covered only by the price bid for the new construction. The only exceptions to this provision, wherein extra compensation will be authorized, are relocation of an existing facility due to direct conflict with the new pipeline, and relocation (outside of limits of maximum allowable trench widths) of an existing facility presently located within the bounds of maximum allowable trench width, where necessitated for assurance against future damage due to settlement or to permit reasonable access to the new work.

Before proceeding with the work, the Contractor shall confer with all public or private companies, agencies, or departments that own and operate utilities in the vicinity of the construction work to verify the location of and possible interference with, the existing utilities that are shown on the Plans, arrange for necessary suspension of service and make arrangements to locate and avoid interference with all utilities (including house connections) that are not shown on the Plans.

Where the existing utilities must be disturbed during construction under this contract, their operation and function shall be maintained by the Contractor to such a degree that service to customers will be interrupted for minimum time periods only. Such disturbances and any maintenance use of these lines shall constitute no cost to the Owner. The Owner shall be notified of interruptions in sufficient time to prepare for them and shall agree to the hour, date and duration of them before they are undertaken.

Should shutdowns in service be in excess of the time of duration agreed upon and such excessive shutdown time be due to the Contractor's negligence, faulty work and/or inability to perform, then and in that event, the Contractor shall be held liable to the Owner, by reason of such excessive shutdown periods.

When existing utilities or appurtenant structures, either underground or above ground, are encountered, they shall not be displaced or disturbed unless necessary and in such case shall be replaced in as good or better condition that found, as quickly as possible. Temporary relocation and replacement of all utilities and appurtenant structures to accommodate the construction work shall be at the Contractor's expense and permanent relocation of such facilities as described herein to accommodate the construction work shall be at the Owner's expense, unless such temporary or permanent relocation and replacement is by statute or agreement the responsibility of the Owner. It is expected that the Contractor will be diligent in his efforts and use every possible means to locate existing utilities.

Payment for necessary disconnection and reconnection of utility services shall be included as a part of the Contractor's bid and no extra compensation will be made for same.

The Contractor shall at all times maintain on hand an adequate supply of repair materials and tools with which to make repair to damaged water, gas and sewer lines. Should the Contractor inadvertently damage existing utilities, he shall make immediate repair thereto and in no event shall he leave the site before such repair has been made and proven to be successful. Repair to damaged utilities must meet the requirements of the agency in charge of that particular utility.

The intent of this article is to assure compensation to the Contractor for changes in existing utilities reasonably necessary and at the same time, to protect the Owner against excessive damage due to carelessness of the Contractor's construction force.

22. Personal Liability of Public Officials

In carrying out any of the provisions of the Contract or in exercising any power or authority granted to them thereby, there shall be no personal liability upon the Engineer, or its authorized agents or employees, or upon any other officer or employee of the Owner, it being understood that in such matters they act as the agent and representative of that Owner.

23. Blasting

All blasting operations shall be conducted in strict accordance with Kentucky Revised Statutes 351.320 to 351.340 and the rules and regulations promulgated under KRS 351.320 to 351.340, effective October 6, 1972, which shall be deemed to be included in these Specifications the same as though herein written out in full. The Contractor shall also comply with applicable municipal ordinances, Federal safety regulations and Section 9 of the Manual of Accident Prevention in Construction published by the Associated General Contractor's of America, Inc. All explosives shall be stored in conformity with said ordinances, laws and safety regulations. No blasting shall be done within five feet of any water mains, except with light charges of explosives. Any damage done by blasting is the responsibility of the Contractor and shall be promptly and satisfactorily repaired by him.

To implement these requirements and unless otherwise required by ordinance or law, each excavation crew shall be provided with two metal boxes equipped with suitable locks. One of these boxes shall be for storing explosives and one for caps. The boxes shall always be locked except when in actual use. They shall be painted a bright color and stenciled with appropriate warning signs. At night explosives and caps shall be stored in separate magazines.

All shots shall be covered with heavy timber, steel or rope blasting mats to prevent flying material. Unless otherwise specified or directed, delay caps shall be used to reduce earth vibration and noise. In sparsely populated areas, the Engineer may permit the Contractor to use regular type caps.

The Contractor shall keep a blasting log and, for each blast, shall record the date, time of blast, number of holes, type of explosive, number of delays, amount of charge per delay, stemming and number and type of caps. An inventory of all explosives handled and stored shall also be kept. Blasting operations shall be covered by comprehensive general liability insurance or separate public liability insurance to cover blasting as set forth in the General Conditions.

24. Control of Erosion

The Contractor shall be responsible for control of siltation and erosion from the project work. Control shall include all necessary ditching, check dams, mulching, etc. to prevent deposition of materials in roadside ditches. The Owner shall incur no extra costs from such work.

25. Occupational Safety and Health

It shall be the Contractor's responsibility to be informed of and comply with all Kentucky Department of Labor, Division of Occupational Safety and Health requirements for this type of construction. He shall also comply with all reporting requirements of the Occupational Safety and Health Law. The Contractor shall provide adequate protection against accidents due to special hazards caused by blasting, deep trenches, excavations, heavy equipment or vehicle operation, electrical work, work in dangerous atmospheres, work above the ground, traffic control, work with augering and drilling equipment and any other construction work which he might undertake as a part of this project.

The Contractor shall provide safety controls for protection of the life and health of employees. He will utilize precautionary methods for the prevention of damage to property, materials, supplies and equipment and for avoidance of work interruptions in the performance of this contract. In order to provide such safety controls aforesaid, the Contractor shall comply with all pertinent provisions of the Kentucky Safety Standards of the Division of Occupational Safety, Department of Labor, that are in effect at the time this contract is entered into and during the period in which the contract is to be performed. The Contractor shall also take or cause to be taken such additional measures as the Division of Occupational Safety may determine to be reasonably necessary for the purpose.

The Contractor shall maintain an accurate record of, and shall report to the Division of Occupational Safety in the manner and on the forms prescribed by the Division; exposure date and all accidents resulting in death, traumatic injury, occupational disease and/or damage to property, materials, supplies and equipment incident to work performed under this contract.

The Division of Occupational Safety will notify the Contractor through the Owner of any noncompliance with the foregoing provisions and the action to be taken. The Contractor shall, after receipt of such notice, immediately correct conditions. Such notice when delivered to the Contractor or his representative at the site of the work, shall be deemed sufficient for the purpose.

If the Contractor fails or refuses to comply promptly, the Owner may issue an order stopping all or part of the work until satisfactory or corrective action has been taken. Failure or refusal to comply with the order will be grounds for stopping all payments due under the contract to the Contractor. No part of the time lost due to any such stop order shall be made the subject of claim or extension of time or for excess cost or damages to the Contractor.

Compliance with the provisions of the foregoing sections by subcontractors will be the responsibility of the prime Contractor.

The Contractor shall provide necessary first aid facilities and employees trained to provide first aid as required by the Occupational Safety and Health Law. In addition to the reporting requirements of other agencies, the Contractor must report promptly in writing to the Engineer all accidents whatsoever arising out of, or in connection with, the performance of the work, whether on or adjacent to the site, which caused death, personal injury, or property damages, giving full details and statements of witnesses. In addition, if death or serious injuries or serious damages are caused, such shall be reported to both the Engineer and the Owner.

26. Construction Warning Signs

The Contractor shall provide construction warning signs for each location where he is working in the highway right-of-way. Safety rules, including size, type and placement of construction signs, shall be equal to those required by the Kentucky Department of Highways.

27. Pipeline Right-of-way

The Owner will attempt to obtain all pipeline right-of-way before construction is begun. However, the Contractor must be prepared to work in right-of-way which have been acquired and shall not be entitled to a time extension due to delay over lack of particular right-of-way unless he has been provided no other place to work.

28. Responsibility for Trench Settlement

Where the pipelines installed under this contract are located within existing or proposed street right-of-way the Contractor shall be responsible for any settlement of the street surfacing, curbs, or sidewalks caused by the pipeline construction, that occurs within one year after the final acceptance of this contract. Repair of any damage caused by settlement shall meet the approval of the Owner.

29. Permission to Use Property Other Than That Provided by Owner

Should the Contractor desire or elect to use, pass over and/or encroach on private property title or right-of-way for a specific purpose, he shall obtain such rights and permission at his own expense and risk.

30. Resolving Conflicts in Contract Documents

Anything called for in the specifications and not shown on the drawings or shown on the drawings and not called for in the specifications shall be included in the Contractor's work, the same as if included in both. Where the details and general drawings do not agree, the Contractor shall notify the Engineer at least five (5) days before the date of the receipt of bids and the Engineer will have the Owner issue an addendum to all Contractors as to which of the two methods of construction shall be followed. Failure to make this determination shall make the Contractor subject to furnishing either method as may be later called for by the Engineer. In case of discrepancies between the various parts of the plans and the specifications, the detailed drawings shall take precedence over the general layouts or elevations and the written specifications shall take precedence over all other documents.

Figure dimensions on the drawings shall govern over scale dimensions. Work, materials or equipment described in words which so applied have a well-known technical or trade meaning shall be deemed to refer to such recognized standards.

In resolving conflicts, errors and discrepancies in the Contract Documents, the documents shall be given precedence in the following order: Agreement, Modifications, Addenda, Funding Agency Specifications or Contract Documents, Special Conditions, Special Provisions, Supplementary General Conditions, Information for Bidders, General Conditions, Technical Specifications and Drawings.

31. Access to the Work

The Engineer and the Owner shall have access to the work wherever it is in preparation or progress, and the Contractor shall provide proper facilities for such access and inspection.

32. Lubrication

The Contractor shall make suitable provision for the proper lubrication of all equipment furnished under this Contract. Accessible grease fittings shall be provided where required. A supply of oil, grease and other lubricants of proper quality, as recommended by the manufacturer of the equipment, shall be furnished. Lubricants shall be furnished in their original, unopened containers, in sufficient quantity for initial fillings and for at least one (1) year of operation.

33. Labor Regulations

All public works projects bid and constructed in the State of Kentucky are subject to the provisions of Chapter 337 of the Kentucky Revised Statutes entitled Wages and Hours. In addition, if the project to which these specifications apply is funded in whole or in part by a Federal grant program whereby the U.S. Department of Labor is required to prescribe predetermined prevailing minimum wages, compliance with the applicable Federal labor regulations is also required.

All Contractors and subcontractors on the work will be required to comply with all applicable provisions of State and Federal regulations as outlined in the Supplemental General Conditions.

34. Preconstruction Conference

A preconstruction conference shall be held prior to issuance of notice to proceed. The Contractor shall be represented by at least one (1) principal of the firm and the job superintendent. The Contractor shall at that time present the construction schedule, progress payment format and estimates, any available subcontractor approval requirements, required insurance and any other documents deemed necessary.

35. Record Drawings

The Contractor shall keep an accurate record of the location, size and material for all piping and changes in dimensions, and any other variations between the work actually provided and that shown on the Contract Drawings. The representation of such variations shall conform to standard drafting practice and shall include such supplementary notes, legends and details as may be necessary for legibility and clear portrayal of the construction. This requirement shall not be deleted regardless of the record keeping practices of the Engineer or the Owner.

End of Section

SECTION 01200 - PROJECT MEETINGS

PART 1. GENERAL

1.1 Requirements Included

- A. Contractor participation in pre-construction conferences, progress meetings, pre-final inspection and final inspection.
- B. Contractor administration of pre-installation conferences and pre-final inspection.

1.2 Related Requirements

- A. Section 01300 - Submittals: Progress Schedules.
- B. Section 01300 - Submittals: Shop drawings, product data, and samples.
- C. Section 01400 - Quality Control.
- D. Section 01700 - Contract Close-out: Project record documents.
- E. Section 01700 - Contract Close-out: Operation and maintenance data.

1.3 Pre-construction Conferences

- A. Engineer will administer pre-construction conference for execution of Owner-Contractor Agreement and exchange of preliminary submittals.

1.4 Progress Meetings

- A. Attend progress meetings.
- B. Review of Work progress, status of progress schedule and adjustments thereto, delivery schedules, submittals, maintenance of quality standards, pending changes and substitutions, and other items affecting progress of Work.

1.5 Pre-installation Conferences

- A. When required in individual specification Section, convene a pre-installation conference prior to commencing work of the Section.
- B. Require attendance of entities directly affecting, or affected by, work of the Section.
- C. Review conditions of installation, preparation and installation procedures, and coordination with related work.

1.6 Pre-final Inspection

- A. When work is substantially complete, convene a pre-final inspection.
- B. Require attendance of Owner, Engineer and funding agency officials.
- C. Review installation, cleanup and operation of work.
- D. Review record drawings, operation and maintenance materials, and other close-out documents.

1.7 Final Inspection

A. When punch list work is complete, attend a final inspection.

B. Review completion of punch list items.

PART 2. PRODUCTS

Not Used

PART 3. EXECUTION

Not Used

End of Section

SECTION 01300 - SUBMITTALS

PART 1. GENERAL

1.1 Requirements Included

- A. Procedures.
- B. Construction Progress Schedules.
- C. Shop Drawings.
- D. Product Data.
- E. Manufacturer's Instructions.
- F. Manufacturer's Certificates.
- G. Record Drawings.

1.2 Related Requirements

- A. Section 01005 - Administrative Provisions: Applications for Payment.
- B. Section 01400 - Quality Control: Testing laboratory reports.
- C. Section 01400 - Quality Control: Manufacturers' field service reports.
- D. Section 01700 - Contract Close-out: Close-out submittals.

1.3 Procedures

- A. Deliver submittals to Engineer at address listed on cover of Project Manual.
- B. Identify Project, Contractor, major supplier; identify pertinent Drawing sheet and detail number, and Specification Section number, as appropriate. Identify deviations from Contract Documents. Provide space for Contractor and Engineer review stamps.
- C. Submit initial progress schedule in duplicate within 15 days after date established in Notice to Proceed. After review by Engineer revise and resubmit as required. Submit revised schedule with each second Application for Payment, reflecting changes since previous submittal.
- D. Comply with progress schedule for submittals related to Work progress. Coordinate submittal of related items.
- E. After Engineer review of submittal, revise and resubmit as required, identifying changes made since previous submittal.
- F. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.

1.4 Construction Progress Schedules

- A. Submit horizontal bar chart or network analysis system using the critical path method, showing complete sequence of construction by activity, identifying work of separate stages and other logically grouped

activities. Show projected percentage of completion for each item of Work as of time of each Application for Progress Payment.

B. Show submittal dates required for shop drawings, product data, and samples, and product delivery dates.

1.5 Shop Drawings

A. Submit the number of copies which Contractor requires, plus two copies which will be retained by Engineer.

1.6 Product Data

A. Mark each copy to identify applicable products, models, options, and other data; supplement manufacturers' standard data to provide information unique to the Work.

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

1.7 Manufacturer's Instruction

A. When required in individual Specification Section, submit manufacturer's printed instructions for delivery, storage, assembly, installation, startup, operation, maintenance, adjusting, and finishing, in quantities specified for product data.

1.8 Record Drawings

A. Maintain accurate records of any variations between the work actually provided and that shown on the Contract Drawings. The representation of such variations shall conform to standard drafting practice and shall include such supplementary notes, legends and details as may be necessary for legibility and clear portrayal of the construction.

B. Submit one copy of all such records to the Engineer.

PART 2. PRODUCTS

Not Used

PART 3. EXECUTION

Not Used

End of Section

SECTION 01400 - QUALITY CONTROL

PART 1. GENERAL

1.1 Requirements Included

- A. General Quality Control.
- B. Workmanship.
- C. Manufacturer's Instructions.
- D. Manufacturer's Certificates.
- E. Manufacturers' Field Services.

1.2 Related Requirements

- A. Document 00700 - General Conditions: Inspection and testing required by governing authorities.
- B. Section 01005 - Administrative Provisions: Applicability of specified reference standards.
- C. Section 01300 - Submittals: Submittal of Manufacturer's Instructions.

1.3 Quality Control, General

- A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

1.4 Workmanship

- A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
- B. Perform work by persons qualified to produce workmanship of specified quality.
- C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.5 Manufacturer's Instructions

- A. Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Contract Documents, request clarification from Engineer before proceeding.

1.6 Manufacturer's Certificates

- A. When required by individual Specifications Section, submit manufacturer's certificate, in duplicate, that products meet or exceed specified requirements.

1.7 Manufacturer's Field Services

- A. When specified in respective Specification Sections, require supplier or manufacturer to provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship, startup of equipment, test, adjust and balance of equipment as applicable, and to make appropriate recommendations.

B. Representative shall submit written report to Engineer listing observations and recommendations.

PART 2. PRODUCTS

Not Used

PART 3. EXECUTION

Not Used

End of Section

SECTION 01420 - INSPECTION OF THE WORK

PART 1. GENERAL

1.1 The Engineer's Duties

It is not the Engineer's function to supervise or direct the manner in which the work under this Contract is carried on or conducted.

The Engineer is not responsible for construction means, methods, techniques, sequences, or procedures, nor for safety precautions and programs in connection with the work.

The Engineer will not be responsible for the Contractor's failure to carry out the work in accordance with the Contract Documents.

1.2 The Contractor's Duties

The Contractor shall perform no work in the absence of the Engineer or his assistants, without prior approval.

The Contractor shall use no material of any kind until it has been inspected and accepted by the Engineer.

The Contractor agrees that any method or procedure, which in the opinion of the Engineer does not achieve the required results or quality of the work specified, shall be discontinued immediately upon the order of the Engineer.

The Contractor shall remedy all materials or workmanship found at any time to be defective or not of the quality required by the Plans and Specifications, regardless of previous inspection of the materials and workmanship.

The Engineer's inspection does not relieve the Contractor from any obligation to perform the work specified, strictly in accordance with the Drawings and Specifications. Any work not so constructed shall be removed and made good by the Contractor free of all expense to the Owner.

Upon completion, the Contractor shall have Record Drawings and certified as to their completeness and correctness by the Resident Inspector and delivered to the Engineer for incorporation in the Drawings.

At Contract close-out, deliver Record Documents to the Engineer for the Owner.

Accompany submittal with transmittal letter in duplicate, containing:

Date. Project title and number. Contractor's name and address. Title and number of each Record Document. Signature of the Contractor or his authorized representative.

PART 2. PRODUCTS

Not Used.

PART 3. EXECUTION

Not Used.

End of Section

SECTION 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1. GENERAL

1.1 Requirements Included

- A. Barriers
- B. Protection of Installed Work.
- C. Security.
- D. Water Control.
- E. Cleaning During Construction.
- F. Project Identification.

1.2 Related Requirements

- A. Section 01005 - Administrative Provisions: Work sequence. Contractor use of premises.
- B. Section 01700 - Contract Close-out: Final cleaning.

1.3 Barriers

- A. Provide as required to prevent public entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.
- B. Provide barricades and covered walkways as required by governing authorities for public rights-of-way and for public access to existing building or site.

1.4 Protection of Installed Work

- A. Provide temporary protection for installed products. Control traffic in immediate area to minimize damage.
- B. Where applicable, follow project traffic control plan as required by state or local authorities having jurisdiction over roads or streets. Provide required signage, markings, cones, barriers, flaggers or other controls as may be required by the jurisdictional agency.

1.5 Cleaning During Construction

- A. Control accumulation of waste materials and rubbish; periodically dispose of off-site.

1.6 Project Identification

- A. Provide Project identification sign of wood frame and exterior grade plywood construction, painted with required design and colors. List title of Project, names of Owner, Engineer, Contractor.
- B. Erect on site at location established by Engineer.

1.7 Removal

SECTION 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

A. Remove temporary materials, equipment, services, and construction prior to Substantial Completion inspection.

B. Clean and repair damage caused by installation or use of temporary facilities.

PART 2. PRODUCTS

Not Used

PART 3. EXECUTION

Not Used

End of Section

SECTION 01700 - CONTRACT CLOSE-OUT

PART 1. GENERAL

1.1 Requirements Included

- A. Close-out Procedures.
- B. Project Record Documents.
- C. Operation and Maintenance Data.
- D. Warranties and Bonds.
- E. Spare Parts and Maintenance Materials.

1.2 Related Requirements

- A. Document 00700 - General Conditions: Fiscal provisions, legal submittals, and other administrative requirements.
- B. Section 01500 - Construction Facilities and Temporary Controls: Cleaning during construction.

1.3 Close-out Procedures

- A. Comply with procedures stated in General Conditions of the Contract for issuance of Certificate of Substantial Completion.
- B. When Contractor considers Work has reached final completion, submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's inspection.
- C. In addition to submittals required by the conditions of the Contract, provide submittals required by governing authorities, and submit a final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due.
- D. Engineer will issue a final Change Order reflecting approved adjustments to Contract Sum not previously made by Change Order.

1.4 Project Record Documents

- A. Store documents separate from those used for construction.
- B. Keep documents current; do not permanently conceal any work until required information has been recorded.
- C. At Contract close-out, submit documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor.

1.5 Operation and Maintenance Data

- A. Provide data for pump station.
- B. Submit two sets prior to final inspection, bound in 8-1/2 x 11 inch (216 x 279 mm) three-ring side binders with durable plastic covers.

1.6 Warranties and Bonds

A. Provide duplicate, notarized copies. Execute Contractor's submittals and assemble documents executed by subcontractors, suppliers, and manufacturers. Provide table of contents and assemble in binder with durable plastic cover.

B. Submit material prior to final application for payment. For equipment put into use with Owner's permission during construction, submit within 10 days after first operation. For items of Work delayed materially beyond Date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.7 Spare Parts and Maintenance Materials

A. Provide products, spare parts, and maintenance materials in quantities specified in each Section, in addition to that used for construction of Work. Coordinate with Owner, deliver to project site and obtain receipt prior to final payment.

PART 2. PRODUCTS

Not Used

PART 3. EXECUTION

Not Used

End of Section

SECTION 01720 - PROJECT RECORD DOCUMENTS

PART 1. GENERAL

1.1 Work Included

The Contractor shall maintain at the site for the Owner one record copy of:

- A. Drawings.
- B. Specifications.
- C. Addenda.
- D. Change orders and other modifications to the Contract.
- E. Engineer field orders or written instructions.
- F. Approved shop drawings, product data and samples.
- G. Field test records.

1.2 Related Requirements

- A. Section 01200 - Project Meetings
- B. Section 01340 - Shop Drawings, Product Data and Samples
- C. Section 01500 - Construction Facilities and Temporary Controls

1.3 Recording

- A. Each document shall be labeled "PROJECT RECORD" in large printed letters.
- B. Record information shall be kept current with construction progress.

1.4 Submittals

- A. Sketches showing the "Record" information shall be provided monthly to the Engineer and submitted with the partial pay request.
- B. Upon completion, the Contractor shall have Record Drawings and certified as to their completeness and correctness by the Resident Inspector and delivered to the Engineer for incorporation in the Drawings.
- C. At Contract close-out, the Contractor shall deliver Record Documents to the Engineer for the Owner.
- D. The Contractor shall accompany the submittal with a transmittal letter containing:
 - 1. Date.
 - 2. Project title and number.
 - 3. Contractor's name and address.
 - 4. Title and number of each Record Document.
 - 5. Signature of the Contractor or his authorized representative.

PART 2. PRODUCTS

Not Used.

PART 3. EXECUTION

Not Used.

End of Section

**Special Note for Erosion Prevention and Sediment Control
Garrard County Fiscal Court – Bradshaw Mill Road (CR 1011) – Bridge Replacement**

The contractor shall be responsible for filing the Kentucky Pollution Discharge Elimination System (KPDES) KYR10 permit Notice of Intent (NOI) with the Kentucky Division of Water (DOW). The NOI shall name the contractor as the Facility Operator and include the Owner Contract ID Number for reference.

The Contractor shall perform all temporary erosion/sediment control functions including: providing a Best Management (BMP) Plan, conducting required inspections, modifying the BMP plan documents as construction progresses and documenting the installation and maintenance of BMPs in conformance with the KPDES KYR10 permit effective on August 1, 2009 or a permit reissue to replace that KYR10 permit. This work shall be conducted in conformance with the requirements of Section 213 of KYTC 208 Department of Highway, Standard Specifications for Road and Bridge Construction.

In addition to the requirements of Section 213.03.03, paragraph 2, the Engineer may conduct inspections as needed to verify compliance with Section 213 of KYTC 208 Department of Highway, Standard Specification for Road and Bridge Construction. The Engineer's inspections shall be performed a minimum of once per month and within seven days after a storm of ½ inch or greater. Copies of the Engineer's inspections shall not be provided to the Contractor unless improvements to the BMP's are required. The contractor shall initiate corrective action within 24 hours of any reported deficiency and complete the work within 5 days. The Engineer shall use Form TC 63-61 A for this report. Inspection performed by the Engineer do not relieve the Contractor of any responsibility for compliance with the KPDES permit.

Contrary to Section 213.05, bid items for temporary BMPs may not be listed and will be replaced with one lump sum item for their services. Payment will be prorated based on the Project Schedule as submitted by the Contractor and as agreed by the Engineer.

The contractor shall provide the Engineer copies of all documents required by the KPDES permit at the time they are prepared.

The contractor shall be responsible for the examination of the soils to be encountered and make his own independent determination of the temporary BMPs that will be required to accomplish effective erosion prevention and sediment control.

The Contractor shall be responsible for filling the KPDES permit Notice of Termination (NOT) with the Kentucky DOW. The NOT shall be filed after the Engineer agrees that the project is stabilized or the project has been formally accepted.

SECTION 02100 - EROSION CONTROL

PART 1. GENERAL

1.1 Work Included

Submit KPDES Notice of Intent (NOI) and all follow-up information. Take responsibility for locating, furnishing, installing, and maintaining temporary sediment and erosion control best management practices for earth disturbing activity areas and developing a Best Management Practices (BMP) Plan using good engineering practices as required by the Kentucky Pollutant Discharge Eliminating System (KPDES) Permit. Make and record inspections of BMPs and areas as required by the KPDES Permit. In the event of conflict between these requirements and pollution control laws, rules, or regulations of other Federal, State or Local agencies, adhere to the more restrictive laws, rules, or regulations. A template for the Contractor's use in preparing the BMP Plan is supplied in these documents.

1.2 Related Work

- A. Section 02110 - Site Clearing
- B. Section 02200 - Earth and Rock Work
- C. Section 02936 - Seeding

PART 2. PRODUCTS

Not used

PART 3. EXECUTION

As the permittee, submit the KPDES Notice of Intent (NOI) form to the Division of Water. Additionally, delegate in writing to Manager, KPDES Branch, who will have signature authority for reports. Provide the Engineer a copy of the NOI and a BMP Plan to represent and warrant compliance with the Kentucky Division of Water (KDOW) KPDES Permit, related rules, and specifications prior to starting work.

Locate, furnish, install, and maintain temporary sediment and erosion control best management practices (BMP) to represent and warrant compliance with the Clean Water Act, (33 USC Section 1251 et seq.), the 404 permit, the 401 Water Quality Certification, local government agency requirements, and other related rules and permits until the project has a formal release issued.

Provide the Engineer a copy of all weekly and rainfall event inspections as they are completed. Ensure all reports are signed by the delegated authority. Keep a current BMP Plan and all inspection records available for public inspection as required by the KPDES Permit.

These provisions survive the completion and/or termination of the contract. The following provisions must be followed:

1. Take full responsibility and make all corrections when a governmental agency or a local governmental authority finds a violation of the above noted requirements; that the BMPs are incomplete; that the BMP Plan is incomplete; or that the implementation of the BMP Plan is not being performed correctly or completely.

2. Make payment to the Owner for the full amount, within 10 Calendar Days of notification, when a governmental agency or a local governmental authority furnishes an assessment, damage judgment or finding, fine, penalty, or expense for a violation of the above noted requirements; the BMPs being incomplete; or the BMP Plan being incomplete or its implementation not being performed correctly or completely. The Owner may withhold the amount of money requested for the above from the next pay estimate and deliver that sum to the governmental agency or local governmental authority issuing the assessment, damage judgment or finding, fine, penalty or expense.

3. Indemnify and hold harmless the Department, and reimburse the Department for any assessments, damage judgment or finding, fine, penalty, or expense as a result of the failure of performing this portion of the Contract. The Owner may withhold the amount of any assessments, damage judgments or finding, fine, penalty or expense from the next pay estimate.

4. The Owner will find the Contract in default if a governmental agency or a local governmental authority furnishes a stop work order for any of the following: a violation of the above noted requirements, that the BMPs are incomplete, that the BMP Plan is incomplete, that the implementation of the BMP Plan is not being performed correctly or completely.

5. When the Owner or any government regulatory agency finds a violation of the above noted requirements, or that the BMPs are incomplete, or that the "BMP Plan is incomplete or that the implementation of the BMP Plan is not being performed correctly or completely, correct and mitigate the conditions within 48 hours of notification by the Owner or regulatory agency. Failure to correct non-compliant site conditions will result in the Owner applying a penalty of \$500 per day until corrective actions are completed.

Upon completion of the project, provide the Engineer with a copy of the submitted KPDES Notice of Termination (NOT) form. Retain all records for 2 years.

6. Maintenance of all BMPs at the site will be handled by a Contractor's employee or sub-contractor who has been trained on construction site BMPs at workshops sponsored by the KY DOW and the Kentucky Erosion Protection and Sediment Control (KEPSC) Program. Other workers on-site will be trained in BMP installation, maintenance, and good housekeeping by this employee or sub-contractor.

These are the inspection and maintenance practices that will be used to maintain erosion and sediment controls:

- Areas at final grade will be seeded and mulched within 14 days.
- All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of being reported. This information will be logged on the SWPPP/BMP Plan.
- Silt fences will be inspected for bypassing, overtopping, undercutting, depth of sediment, tears, and to ensure attachment to secure posts. Bypasses will be repaired immediately.
- Built-up sediment will be removed from behind the silt fence before it has reached halfway up the height of the fence.
- The inlet sediment protection devices will be inspected for depth of sediment, and built-up sediment will be removed when it impairs flow into the inlet and at the end of the job.
- Diversion dikes and berms will be inspected and any breaches promptly repaired. Areas that are eroding or scouring will be repaired and re-seeded / mulched as needed.
- Temporary and permanent seeding and mulching will be inspected for bare spots, washouts, and healthy growth. Bare or eroded areas will be repaired as needed.

7. Inspection Procedures (Stormwater, Erosion, and Sediment Control Inspection Practices). Inspection of all BMPs at the site will be handled by the Contractor's qualified employee or sub-contractor, who has been trained on inspecting construction site BMPs at workshops sponsored by the KY DOW and the Kentucky Erosion Protection and Sediment Control (KEPSC) Program.

- All erosion prevention and sediment control measures will be inspected at least once each week and following any rain of one-half inch or more.
- The Contractor's erosion control inspector will train three other people who will be responsible for assisting in the inspections and installing, maintaining, and repairing the controls on the site.
- Inspection reports will be written, signed, dated, and kept on file for two years.

End of Section

SECTION 02110 - SITE CLEARING

PART 1. GENERAL

1.1 Work Included

- A. Furnish all labor and equipment required and perform all clearing, grubbing and stripping of topsoil complete as shown on the Drawings and as specified herein.
- B. Protect existing improvements and vegetation indicated to remain.

1.2 Related Work

- A. Section 02200 - Earth and Rock Work.

PART 2. PRODUCTS

Not used.

PART 3. EXECUTION

3.1 Protection

- A. Protect existing improvements, bench marks, monuments and other reference points.
- B. Protect existing trees and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning of bark, piling construction materials or excavated materials within drip line, excess traffic or parking of vehicles within drip line. Provide temporary guards to protect trees and vegetation to remain.

3.2 Site Clearing

- A. Remove trees, shrubs, grass and other vegetation, improvements, or obstructions, interfering with installation of new construction. All stumps, roots, and root clusters shall be grubbed out to a depth of at least two feet below subgrade elevation.
- B. Strip topsoil to whatever depths encountered in a manner to prevent mixing with subsoil or other material.

3.3 Removal

- A. Remove waste materials and unsuitable topsoil from to location designated by the Engineer.

End of Section

SECTION 03100 - CONCRETE FORMWORK

PART 1. GENERAL

1.1 Work Included

Forms shall be wood, steel, or other approved material. Wood forms shall be tongue-and-groove lumber of uniform width and thickness, or plywood having a minimum of five plies, a minimum thickness of 9/16 inch and a type made especially for concrete forms. Steel forms shall be of a type acceptable to, and commonly used in the construction field. The type, shape, size, quality and strength of all material of which the forms are made shall be subject to the approval of the Engineer.

1.2 Design, Inspection and Approval of Form Work

The design and engineering of the form work, as well as the construction, shall be the responsibility of the Contractor. The Engineer's approval of form work design and/or drawings, as submitted or as corrected in no way shall relieve the Contractor of his responsibility for adequately construction and maintaining the forms so that they will function properly.

Forms, form joints, and reinforcing steel placement shall be checked by the Engineer before closing up the forms. Concrete shall not be place in any form until the placing of steel and erection of form work have been completed and approved by the Engineer. Immediately after completion of pouring, tops of all forms shall be adjusted to line and approved by the Engineer as to conformity with the tolerances specified herein.

PART 2. PRODUCTS

2.1 Forms for Exposed Concrete

A. Unlined. The contact surface of forms shall be constructed from 5/8 inch or 3/4 inch 5 ply structural plywood of concrete form grade. All concrete form plywood shall be designated by grade marking each panel. Full sized sheets of plywood must be used except where smaller pieces will cover an entire area. The edges of all plywood sheets shall be straightened on the bench to insure close fitting, tight joints. All vertical joints shall be backed solidly and the edges of abutting sheet shall be nailed to the same stud.

Contact surfaces of forms shall be in good condition. The Engineer has the right to reject forms which will not produce a smooth, uniform, concrete surface.

B. Lined. The backing for form lining shall be constructed of a good grade of form lumber that is solid, straight and free from defects that might impair its strength but need not be of the quality used for contact forms. Square-edged, sized lumber may be used for form boarding in place of shiplap or tongue-and-groove.

The boarding for lined forms may be horizontal or vertical, depending upon convenience. Form sheathing shall be securely nailed to the studs and the edges of the boards shall be in contact to prevent any bulging of the lining.

Plywood faced panel or patented forms in good condition, with tight fitting joints, such as steel-ply forms, can be substituted for lined forms if a smooth wall surface, as required by these specifications, can be obtained. Minor variations in concrete texture at form joints will be permitted.

Lining material shall be 1/4 inch structural plywood securely nailed to the form sheathing. All lining material shall be used in as wide pieces as possible Areas less than 4 feet in width shall be lined with a single width of plywood.

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Joints in lining and backing shall not occur at the same place and butting edges of adjacent sheets shall be nailed to the same board. The lining material shall be nailed to the backing beginning at center of the board and working toward the edges to prevent buckling. Lining material may be reused, if it is in satisfactory condition and is approved by the Engineer. Open joints which would permit leakage of grout shall be sufficient cause for rejection of forms. If, in the opinion of the Engineer, pointing of slightly open joints will prevent leakage, then such pointing shall be allowed.

In the case of line circular forms where the backing for form lining is constructed in chords of a circle, the form lining shall be adequately supported by variable thickness shim strips on at least 6 inch centers so that the liner forms a circular surface within tolerances specified herein.

2.2 Forms for Unexposed Concrete

Forms shall be constructed of a good grade of form lumber that is solid, straight and free from defects which might impair its strength, but need not be of the quality required for contact surfaces of forms for exposed concrete. Forms shall be of shiplap or T 7 G No. 2 wood sheathing, 3/4 inch plywood, 5/8 inch plywood or approved equal.

2.3 Form Ties

Form ties shall be as follows:

- (a) "Water-Seal" type of ties shall be used for water holding structures or structures subject to flooding.
- (b) Non-water holding structures, which are not subject to flooding, shall have ties approved by the Engineer.

Form ties shall have a minimum working strength when fully assembled of at least 3,000 pounds. Ties shall be so adjustable in length as to permit tightening of forms and of such type as to leave no metal closer than 1 inch from the surface and they shall not be fitted with any lugs, cones, washers, or other device to act as a spreader within the form or for any other purpose which will leave a hole larger than 7/8 inch in diameter of a depression back of the exposed surface of the concrete. Wire ties shall not be permitted.

PART 3. EXECUTION

3.1 Construction

Forms shall be true to line and grade, mortar tight and sufficiently rigid to prevent objectionable deformation under load. Where forms for continuous surfaces are placed in successive units, care shall be taken to fit the forms over the complete surface so as to obtain accurate alignment of the surface and to prevent leakage of mortar. Forms shall be constructed such that keyways, waterstops, and dowels can be placed as shown in the plans.

The form surfaces shall be smooth, free from irregularities, depressions, sags, or holes when used for permanently exposed faces. Bolts and rods used for internal ties shall be so arranged that, when all forms are removed, all metal will not be less than one from any concrete surface. Wire ties will not be permitted. All forms shall be so constructed so that they can be removed without hammering or prying against the concrete. All exposed joints shall be chamfered and suitable molding shall be placed to bevel or round exposed edges or corners, unless otherwise directed by the Engineer.

Temporary openings shall be provided in the inside form of all wall forms and column forms to facilitate cleaning and inspection immediately before depositing concrete. When wood sheeting is used for the inside form, the bottom board shall be fitted and removed to provide a continuous clean out space and if plywood is used, the forms shall be started with a 6 inch wide piece for the same purpose. Washing out of

SECTION 03100 - CONCRETE FORMWORK

all forms and other concrete before pouring new materials must be done with water or air from hose under pressure. The hose must be provided with a suitable nozzle for this work. The intent of these specifications is to produce a perfectly watertight structure in all cases, without any subsequent repair work. Forms shall be so assembled that their removal will not damage the concrete.

Contact surfaces of forms shall be divided into two categories: forms for exposed concrete and forms for unexposed concrete. Exposed concrete shall mean concrete normally exposed to view and shall be considered extending 6 inches below planned regrade or water level. Exposed concrete shall exclude interior surfaces of covered water holding basins and unpainted, unfinished, interior surfaces of manholes and vaults. Unexposed concrete shall be concrete not normally exposed to view and shall include all concrete not included by exposed concrete, unless otherwise noted on the plan or in the specifications. Either unlined forms or lined forms (as hereinafter specified) shall be used for exposed concrete. A combination of lined forms for exposed concrete and unlined forms for unexposed concrete may be used in a structure where only a part of the structure is exposed. When this combination occurs, the Engineer will determine, upon request of the Contractor, if that portion of the structure which requires lined forms can be reduced in section to accommodate the liner without offsetting the liner backing from the sheathing used for the unexposed portion of the structure.

3.2 Construction Tolerance

The forms shall be constructed and rigidly braced in place within the following tolerances:

(1) Variation from true alignment as shown on the drawings in the lines and surfaces of walls:

In 10 feet	1/4 inch
In 20 feet maximum	3/8 inch
In 40 feet or more	3/4 inch

(2) Variation from the level or from the grades indicated on the drawings in floors or slabs:

In 10 feet	1/4 inch
In 20 feet maximum	3/8 inch
In 40 feet or more	3/4 inch

(3) Variation in sizes and/or locations of floor and/or wall openings: 1/3 inch

(4) Variation in thickness of slabs and walls and in cross-sectional dimensions of columns and beams:

Minus	1/4 inch
Plus	1/2 inch

(5) Variation in plan dimension of footings:

Minus	1/2 inch
Plus	2 inches

3.3 Wetting and Oiling Forms

The inside surface of wood board forms shall be soaked with clean water and kept continuously wet for 12 hours before any concrete is placed. In case forms have been erected for some time and have become dry so that joints have opened, then the forms shall be thoroughly soaked at least twice each day for at least 3 days prior to placing concrete. If the forms cannot be tightened to the satisfaction of the Engineer, they shall be torn down and rebuilt. Plywood forms may be treated with a non staining form oil, mineral oil or lacquer. If oil is used, all excess oil shall be wiped off with rags to leave the surface of the forms just oily to the touch. In freezing weather, oil shall be used.

SECTION 03100 - CONCRETE FORMWORK

3.4 Form Removal

Forms shall not be removed without approval of the Engineer. All form removal shall be accomplished in such a manner as to prevent injury to the concrete.

Forms shall not be removed sooner than the following minimum times after the concrete is placed. These periods represent cumulative number of days and fractions of days, not necessarily consecutive, during which the temperature of the air adjacent to the concrete is above 50°F.:

<u>Element</u>	<u>Time</u>
Beams, arches - supporting forms and shoring	14 days
Conduits, deck slabs - supporting (inside) forms and shoring	7 days
Conduits (outside forms), sides of beams, small structures	24 hours
Columns, walls, spillway risers - with side or vertical load	7 days
Columns, walls, spillway risers - with no side or vertical load	4 days
Concreting supporting more than 30 feet of wall in place above it.	7 days
Concrete supporting 20 to 30 feet of wall in place above it.	4 days

Age of stripped concrete shall be at least 7 days before any load other than the weight of the column or wall itself is applied.

When conditions on the job are such as to justify the requirements, forms will be required to remain in place for longer periods. Forms for beams, girders, and floor slab shall remain in place for at least seven days and shall only be removed when test cylinders used under the same condition as the members break with a compressive strength as required in these specifications.

End of Section

SECTION 03200 - CONCRETE REINFORCEMENT

PART 1. GENERAL

1.1 Work Included

The work covered by this specification consists of furnishing, cutting, bending and placing all steel reinforcement, including rods and fabric, as indicated on the drawings or otherwise required and in accordance with these specifications.

1.2 Submittals

Submit manufacturer's specifications for materials and installation instructions. Include test reports showing compliance with project requirements where test method is indicated.

1.3 Delivery and Storage

Notify the Engineer when materials will be received on the job so that proper arrangements may be made for inspecting the unloading operations and examining the materials.

PART 2. PRODUCTS

2.1 Bars

All bar reinforcement for reinforced concrete construction shall be new billet steel of intermediate, or hard grade or rail steel reinforcement bars and conforming to ASTM A-615 and A-616. All bars shall be rolled so as to comply with the requirements of ASTM A-305.

2.2 Welded Wire Fabric

Welded wire fabric shall comply with the requirements of ASTM A-185.

2.3 Cold-Drawn Steel Wire

Cold-drawn steel wire shall comply with the requirements of ASTM A-82.

2.4 Black Annealed Wire

Black annealed wire shall be cold-drawn wire and shall have a tensile strength of not less than 40,000 pounds per square inch.

PART 3. EXECUTION

3.1 Bending

Reinforcing bars may be mill or field bent. All bends shall be made in compliance with the requirements of the American Concrete Institute Standard 315 and by approved machine methods except as noted otherwise on the drawings. All bends shall be made without heating. Bars with kinks, cracks or improper bends will be rejected.

3.2 Installation

All reinforcement shall be free from dirt, oil, grease, paint, mill scale, loose or thick rust, or other coating which might destroy or reduce its bonds with the concrete when the surrounding concrete is placed.

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All reinforcement shall be placed in accordance with the drawings as furnished or approved by the Engineer and shall be held so securely in position by wiring and blocking from the forms and by wiring together at intersections that it will not be displaced during the placement of the concrete. Tack welding of bars will not be permitted.

The minimum cover for all main reinforcement shall conform to the dimensions shown on the drawings which will indicate the clear distance from the edge of the reinforcement to the concrete surface.

The following tolerances will be allowed in the placement of reinforcing bars as shown on the drawings:

(1) Variation in protective cover

1/4 inch for 2-inch cover
1/2 inch for 3-inch cover

(2) Variation of spacing

1/12 of indicated spacing

Any supplemental bar schedules, bar lists or bar-bending diagrams required to accomplish the fabrication and placement of reinforcement shall be provided by the Contractor. Prior to placement of reinforcement, the Contractor shall furnish three prints or copies of any such lists or diagrams to the Engineer. Acceptance of the reinforcement will not be based on approval of these lists or diagrams but will be based on inspection of the reinforcement after it has been placed.

All reinforcement for any pour shall be secured in place by use of metal or concrete supports, spacers, or ties, as approved by the Engineer, before the pour is started. The supports shall be used in such a manner that they will not be exposed or contribute in any way to the discoloration or deterioration of the concrete.

Steel in slabs poured on earth or compacted dense graded aggregate shall be supported by concrete masonry units on subgrade, and/or by approved metal supports with sand plates. Steel in slabs poured on solid rock shall be supported as for slabs on earth except that sand plates are not required.

All splices in reinforcement shall be as shown on the drawings or as directed by the Engineer. Unless otherwise specified on the drawings, splices shall overlap at least 30 times the diameter of the smaller bar in the splice, but not less than 12 inches. Splices shall overlap 40 diameters for hoop steel in circular walls. The lapped ends of bars shall be connected by lapping and tying as a single continuous bar to develop the strength of the bar.

Welded wire fabric shall be spliced using wire ties or standard clips in the following manner.

(1) Adjacent sections shall be spliced end to end by either:

- (a) Overlapping the two pieces of fabric one full mesh (measured from the ends of the longitudinal wires in one piece to the ends of the longitudinal wires in the other piece) and securing the two pieces together with wire ties placed at intervals of 18 inches; or,
- (b) Overlapping the two pieces of fabric so that the end crosswire of each piece comes in contact with the next-to-end crosswire of the other piece and securing the two pieces together only as required to keep the fabric in place and to prevent it from curing.

(2) Adjacent sections of fabric shall be spliced side to side by either:

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- (a) Placing the two selvage wires (the longitudinal wires at the edge of the fabric) one along side and overlapping the other and securing the two pieces together with wire ties placed at intervals of 3 feet; or
- (b) Placing each selvage wire in the middle of the first mesh of the other section of fabric and securing it to the other section at intervals of 10 feet by means of wire ties placed on the selvage wires alternately at intervals of 5 feet.

3.3 Inspection

The Contractor shall secure from the manufacturer, and furnish in duplicate, certified copies of the mill test report for each delivery of bar reinforcing steel to the job. The bars shall be properly tagged so as to permit identification of the heat number shown on the mill test report for any and all steel delivered to the work.

3.4 Storage

Steel reinforcement shall be stored above the surface of the ground upon platforms, skids, or other supports and shall be protected, as far as practicable, from mechanical injury and surface deterioration caused by conditions producing rust.

3.5 Testing

When tests are required, reinforcement will be tested in accordance with the above ASTM Specifications for each class, except that tensile tests shall comply with the requirements of ASTM E-8.

End of Section

SECTION 03300 - CAST-IN-PLACE CONCRETE

PART 1. GENERAL

1.1 Work Included

This specification covers the furnishing of all materials, equipment, and labor, and performing all operations specified herein, including the manufacturing, transporting, placing, finishing and curing of the concrete. The furnishing and placing of reinforced steel is covered in a separate technical specification.

1.2 Submittals

The Contractor shall be responsible for the design of the concrete mixtures and the quality of the concrete including ready-mix. Prior to any concrete placement, the Contractor shall furnish a statement to the Engineer giving the proportions by dry weight of cement and of fine and coarse aggregate that will be used in the manufacture of each class of concrete contained in the contract.

1.3 Delivery

Notify the Engineer 48 hours before concrete will be received on the job so that proper arrangements may be made for inspecting the materials and installation.

PART 2. PRODUCTS

2.1 Concrete

Concrete shall be composed of Portland cement, water, fine aggregate, coarse aggregate and required admixtures. The design of the concrete mixture will be based on the water-cement ratio necessary to secure a plastic workable mixture suitable for the specific conditions of placement and, when properly cured, a product having durability, impermeability and strength. The concrete mixture shall be designed so that the concrete placed according to plans shall produce a minimum laboratory cylinder compressive strength equal to the required strength.

Concrete shall be classified as Class A, Class B, Class C and Class D or E. The basis of classification of concrete shall be the minimum compressive strength at twenty-eight days as listed below. Other minimum design requirements are also shown.

Class	Minimum Strength (psi)		Cement/Factor (Bags/C.Y.)	Slump Range (Inches)
	(7-day)	(28-day)		
A	2850	4000	6.0	1 1/2 to 3
B	2200	3000	5.2	2 to 4
C	1800	2500	4.8	2 to 4
D	1500	2000	4.5	3 to 6
E	-	-	3.5	3 to 6

Unless otherwise specified, the air content (by volume) of the concrete at the time of placement shall be:

Maximum Size Aggregate	Air Content (%)
3/8 inch to 1/2 inch	6 to 9
Over 1/2 inch to 1 inch	5 to 8
Over 1 inch to 2 1/2 inches	3 to 6

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2.2 Cement

Portland cement shall meet the requirements of ASTM C-150 for the type of cement specified. Air entraining Portland cement shall meet the requirements of ASTM C-175 for the type of cement specified.

2.3 Aggregates

Aggregates shall conform to the provisions of ASTM C-136 and ASTM C-33. Sand shall consist of clean, well graded particles of hard, durable stone and shall contain limited amount of deleterious substances. It shall be equivalent to washed Ohio, Scioto, or Cumberland River sand.

Coarse aggregate shall be washed river gravel or crushed limestone of hard durable particles and shall contain limited amounts of deleterious substances. The maximum size of coarse aggregate will be limited to one and one-half inches.

2.4 Water

Water used in mixing concrete shall be fresh, clean and free from sewage, oil, acid, alkali, salts, or organic matter. The water used in mixing must be a minimum required for a plastic mix. No water will be permitted for purposes of hastening mixing and reducing tamping or vibration.

2.5 Admixtures

A. Air-Entrainment. The air-entraining admixtures shall fully meet the requirements of ASTM C-260 and shall be subject to tests in accordance with ASTM C-233.

B. Retarding Agents. Approved types of retarding agents shall be included in the concrete mix when specified or authorized in writing by the Engineer.

C. Other Compounds. The use of calcium chloride or other accelerators or anti-freeze compounds will not be allowed.

2.6 Waterstops

Copper used for waterstops shall conform to ASTM B-248.

Steel used for waterstops shall conform to ASTM A-366 or ASTM A-93.

Wrought iron used for waterstops shall conform to ASTM A-162 or ASTM A-163.

Plastic material used for waterstops shall conform to ASTM D-742

The rubber waterstop material shall meet the following physical requirements when and if tested, in accordance with the appropriate sections of Federal Test Method Standard No. 601, ASTM D-395, and ASTM D-1432.

Hardness - The Shore A durometer hardness shall be 60 to 70.

Elongation - The elongation shall be a minimum of 400 percent.

Tensile Strength - The tensile strength shall be a minimum of 2,500 pounds per square inch.

Water Absorption - The water absorption shall be a maximum of 5 percent by weight after immersion in water for two days at 158°F.

SECTION 03300 - CAST-IN-PLACE CONCRETE

Tensile Strength After Aging - The tensile strength after accelerated aging for five days at 158°F, shall not be less than 80 percent of the original tensile strength.

Compression Set - The compression set after 22 hours at 158°F., shall not be more than 30 percent.

Specific Gravity - The specific gravity shall be 1.20 plus or minus .05.

PART 3. EXECUTION

3.1 Batching and Mixing

A. Equipment. Mixing equipment shall be capable of combining the aggregate, cement and water into a uniform mixture and of discharging this mixture without segregation. Adequate facilities shall be provided for the accurate measurement of the materials entering the concrete.

Truck mixers shall be equipped with an accurate device for measuring the amount of water added. Truck mixers and agitator shall be operated within the limits of capacity and speed of rotation designated by the manufacturer of the equipment.

B. Mixing Time. Neither the speed nor the volume capacity of the mixer shall exceed those recommended by the manufacturer. Excessive overmixing, requiring additions of water to preserve the required consistency, will not be permitted. The mixing time for each batch after all solid materials are in the mixer drum, provided that all the mixing water shall be introduced before one-fourth of the mixing time has elapsed, shall be not less than two minutes for mixers having capacities up to two cubic yards. For mixers of larger capacities, this minimum shall be increased fifteen seconds for each cubic yard of fraction thereof of additional capacity.

When a truck mixer is used, each batch of concrete shall be mixed not less than fifty nor more than three hundred revolutions, at a mixing speed of not less than four rpm. after all materials are in the mixer drum. In all such cases, however, the concrete shall be delivered to the job site and discharged within 1-1/4 hours or before the drum has revolved 300 times, whichever comes first, after the mixing water has been added.

C. Consistency. The consistency of any concrete shall be such that it can be worked readily into the corners and angles of the forms and around reinforcement with the method of placing employed on the work, but without permitting the materials to segregate or excess free water to collect on the surface. The following ranges represent the extreme limits of allowable slump when tested, in accordance with ASTM C-143. Where vibrators are used, the Engineer may allow a slightly less slump than the specified minimum.

The quantity of mixing water shall not be changed without the consent of the Engineer.

D. Air-Entrained Concrete. When air-entrained concrete is specified, air-entrainment shall be accomplished by using an air-entrained Portland cement or by using an air-entraining admixture with normal Portland cement. Air-entraining admixtures shall be added in solutions to a portion of the mixing water by means of a mechanical batcher in a manner that will insure uniform distribution of the agent throughout the batch. The air content of freshly mixed air-entrained concrete shall be determined as a percentage of the volume of the concrete by following the methods specified in ASTM C-138, C-173, or C-231. Air content determination shall be made on samples of concrete during placement of the concrete in the forms.

When air-entrained concrete is specified, the amount of water and fine aggregate prescribed for normal concrete shall be reduced to compensate for the increased volume of air contained in the air-entrained concrete.

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3.2 Testing

A. Slump Test. At least one slump test shall be made before first concrete pour, at the start of pouring any concrete and at each seven cubic yards deposited during one operation. These shall be made from same samples as those taken for cylinder tests and records of same kept therewith. Tests shall be made according to ASTM C-143 and as required under ASTM C-94 for ready-mixed concrete. The Contractor shall furnish the necessary equipment and labor for making slump tests.

B. Entrained Air Tests. The Contractor shall furnish and have on the job at all times, one LA-345 Chase Air Indicator Kit, one LA-340 Spare Chase Air Indicator and two quarts of isopropyl alcohol (rubbing alcohol) for the Engineer's use in making entrained air measurements.

The amount of measured entrained air shall be recorded by the Engineer. Mortar shall be sampled only from concrete taken directly from the mixer. At least one air measurement shall be made for each test cylinder taken.

C. Periodic Cylinder Tests. All cylinders shall be made per ASTM C-31 and tested per ASTM C-39. The Contractor shall furnish all labor and equipment for sampling and curing cylinders on the job site and transportation to the laboratory for testing.

At the start of concreting, three cylinders shall be made. One shall be tested at 7 days and two shall be tested at 28 days.

Throughout the remainder of the job, the Engineer shall direct when cylinders shall be taken and in what number they shall be taken. At each time when twenty or more cubic yards of concrete are placed during one operation and when the sum of smaller deposits of concrete equal thirty cubic yards since previous test and at any change in mix, three cylinders shall be made. One shall be tested at 7 days and two shall be tested at 28 days.

For a strength test, three test specimens will be made from a composite sample. The test result will be the average of the strength of the three specimens, except that, if one specimen in a test shows manifest evidence of improper sampling, molding, or testing, it shall be discarded and the remaining two strengths averaged. Should more than one specimen, representing a given test, show definite defects due to improper sampling, molding, or testing, the entire test shall be discarded.

The Engineer will ascertain and record the batch number for the concrete and the exact location in the work at which each batch represented by a strength test is deposited.

The Engineer shall have free entry to the plant and equipment furnishing concrete under the contract. Proper facilities shall be provided for the Engineer to inspect materials, equipment and process and to obtain samples of the concrete. All tests and inspections will be conducted so as not to interfere unnecessarily with the manufacture and delivery of the concrete.

If cylinders do not meet strength requirements, the Engineer can order shutdown on all concreting and redesign of concrete mix. The cost of mix redesign shall be paid for by the Contractor. The Engineer can also order additional tests, such as load tests, Swiss Hammer tests and/or core tests in the areas of the work represented by unacceptable cylinders. If areas of work are found to be under strength requirements, the Engineer can order the Contractor to strengthen or replace those areas at the expense of the Contractor.

When it is determined that such concrete shall be removed and replaced the Contractor shall be notified in writing, stating the extent of the replacement to be made.

3.3 Conveying

Concrete shall be conveyed from mixer to forms as rapidly as practicable, by methods which will prevent segregation or loss of ingredients. There shall be no vertical drop greater than five feet, except where suitable equipment is provided to prevent segregation.

Belt conveyers, chutes or other similar equipment in which the concrete is delivered to the structure in a thin, continuously exposed flow, will not be permitted, except for very limited or isolated sections of the work. Such equipment shall be arranged to prevent segregation.

Where wall forms exceed five feet in height, suitable measures, such as the use of tremie tubes, where practicable, or portholes, shall be provided in the forms to limit the vertical drop of the concrete to a maximum of five feet. Openings shall be spaced around the perimeter of five feet. Openings shall be spaced around the perimeter of the formed area so that lateral flow of fresh concrete will be limited to three feet. Drop chutes which may be provided to convey the concrete through wall ports shall have an outside pocket under each form opening to stop the concrete and allow it to flow easily over into the form without separation.

3.4 Placing

A. General. No concrete shall be placed until the forms and subgrade are free of chips, dirt, sawdust, or other extraneous materials and the Engineer has given his approval of the subgrade, forms and reinforcing steel in place. No concrete shall be placed except in the presence of the Engineer and the Contractor shall give reasonable notice of his intention to place concrete.

Concrete shall be placed within one and one-quarter hours after the introduction of the water to the cement and aggregates. In hot weather or under conditions contributing to quick stiffening of the concrete, or where the temperature of the concrete is 85°F or above, the time shall be reduced to 45 minutes. Concrete shall be deposited as closely as possible to its final position in the forms so that flow within the mass and consequent segregation are reduced to minimum. Vibrators may be used to aid in the placement of the concrete provided they are used under experience supervision and the forms designed to withstand their action. The duration of vibration shall be limited to that necessary to produce satisfactory consolidation without causing segregation. Vibration shall not be applied directly to the reinforcement steel or the forms nor to concrete which has hardened to the degree that it does not become plastic when vibrated.

When a vibrator is used, the Contractor shall also spade the concrete along form surfaces a sufficient amount to prevent excessive size or numbers of air-void pockets in the concrete surface, except where an approved absorptive form lining is used; in which case the spading specified above will not be permitted.

B. Lifts in Concrete. The permissible depth of concrete placed in each lift shall be as shown on the drawings or specified herein. All concrete shall be deposited in horizontal layers not exceeding twenty inches in thickness, unless otherwise authorized. The placement shall be carried on at such a rate that the formation of cold joints will be prevented. If a delay occurs in excess of a thirty minute interval between any two consecutive batches or loads, or in case of any delay between placing batches that allows previously placed concrete to take initial set, the Contractor shall discontinue the placing of concrete and make a construction joint before proceeding with the placing operations. He shall remove any portion of the previously placed concrete that is deemed necessary for the proper formation of the construction joint and no payment shall be made to the Contractor for the concrete removed. The thirty minute limitation, cited immediately above, may be extended in those cases where an approved type retarder is added to the concrete mixture to delay the set of the concrete.

Hoppers, chutes and pipes shall be used as necessary to prevent splashing of mortar on forms and reinforcing above the layer being placed.

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C. Placing Temperature. When the atmospheric temperature may be expected to drop below 40°F at the time concrete is delivered to the work site, during placement or any time during the curing period, the following provisions also apply:

- (1) The temperature of the concrete at the time of placing shall not be less than 50°F nor more than 90°F. The temperature of neither aggregates nor mixing water shall be more than 100°F just prior to mixing with the cement.
- (2) When the daily minimum temperature is less than 40°F, concrete structures shall be insulated or housed and heated after placement. The temperature of the concrete and air adjacent to the concrete shall be maintained at not less than 50°F nor more than 90°F for the duration of the curing period.
- (3) Methods of insulating, housing and heating the structure shall conform to "Recommended Practice for Cold Weather Concreting", ACI Standard 306.
- (4) When dry heat is used to protect concrete, means of maintaining an ambient humidity of at least 40 percent shall be provided unless the concrete has been coated with curing compound or is covered tightly with an approved impervious material.

For obtaining the proper curing conditions for the concrete poured, steam heating equipment, oil-fired blowers (airplane heaters) located outside the enclosure and blowing hot air into the enclosure, or other similar equipment of a capacity sufficient to maintain the required minimum temperature all over, will be required. In conjunction with forced air heaters, means of supplying moisture to the area being cured will also be required. Oil or coke burning salamanders and other fuel-burning heaters produce carbon dioxide which combines with calcium hydroxide in fresh concrete to form a weak layer of calcium carbonate. When this occurs, the surface of the concrete floor will dust under traffic. For this reason, carbon dioxide producing heaters shall not be used while placing concrete and for the first 24 to 36 hours of the curing period unless they are properly vented.

The Contractor must have a sufficient steam retaining canvas or other protective covering at the site to cover all sides and tops of forms to be poured and concrete to be cured, before pouring of concrete will be allowed. This covering must be placed over and around forms and concrete being cured in such a manner that circulation of curing air will prove effective to the tops of floors and to the outside, top and corners of concrete structures, as well as to their interiors. The Contractor may strip forms during curing period with covering removed, provided atmospheric temperatures are above specified curing temperatures, concrete surfaces are kept moist, and time and labor are available for recovering for lower night temperatures.

When climatic or other conditions are such that the temperature of the concrete may reasonably be expected to exceed 85°F at the time of delivery at the work site, during placement, or during the first 24 hours after placement, the following provisions also shall apply:

- (1) The Contractor shall maintain the temperature of the concrete below 85°F during mixing, conveying, and placing. Methods used shall conform to "Recommended Practice for Hot Weather Concreting," ACI Standard 605.
- (2) The concrete shall be placed in the work immediately after mixing. Truck mixing shall be delayed until only time enough remains to accomplish it before the concrete is placed.
- (3) Exposed concrete surfaces which tend to dry or set too rapidly shall be continuously moistened by means of fog sprays or otherwise protected from drying during the time between placement and finishing, and after finishing.
- (4) Finishing of slabs and other exposed surfaces shall be started as soon as the condition of the concrete allows and shall be completed without delay.

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(5) Concrete surfaces exposed to the air shall be covered as soon as the concrete has hardened sufficiently and shall be kept continuously wet for at least the first 24 hours of the curing period and for the entire curing period unless curing compound is applied.

(6) Formed surfaces shall be kept completely and continuously wet for the duration of curing period (prior to, during and after form removal) or until curing compound is applied.

(7) If moist curing is discontinued before the end of the curing period, white pigmented curing compound shall be applied immediately.

D. Concrete on Rock Foundations. Rock surfaces upon which concrete is to be placed shall be clean, standing water, mud, debris, and loose or unsound fragments. All rock surfaces shall be kept continuously wet for forty-eight hours and all horizontal surfaces shall be covered, immediately before the concrete is placed, with a layer of mortar of the same sand-cement ratio as used in the concrete.

E. Concrete on Earth Foundations. Unless otherwise authorized all concrete shall be placed upon clean, damp surfaces free from frost, ice, or deleterious materials and standing or running water. Concrete shall not be placed in mud, dried porous earth or upon fill that has not been subject to approved rolling or tamping until optimum compaction has been obtained.

F. Vertical Joint Spacing. The layout of all monoliths shall be as shown on the drawings or as directed by the Engineer before construction is started.

G. Placing Concrete through Reinforcement. In dropping concrete through reinforcement, care shall be taken that no segregation of the coarse aggregate occurs.

3.5 Construction Joints

Construction joints shall be located as indicated on the contract drawings, or as approved by the Engineer. The surfaces of construction joints shall be clean when covered with fresh concrete. Cleaning shall consist of the removal of all laitance, loose or defective concrete and foreign material. Cleaning of the surface of construction joints shall be accomplished by the use of high velocity air-water jets, wet sandblasting, or other effective means. Surfaces of construction joints that have been permitted to dry by reason of the succeeding lift or adjoining concrete not being placed within the specified post-curing period shall be moistened and kept continuously moist for at least forty-eight hours immediately prior to the placing of the succeeding lift of adjoining concrete. All pools of water shall be removed from the surfaces of construction joints before the new concrete is placed.

3.6 Finishing

A. Repair of Defects. Honeycombed areas and voids left by the removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water on the finished structure, shall be repaired immediately after the removal of forms. Voids left by removal of tie rods shall be reamed and completely filled with dry-patching mortar.

Defective concrete shall be repaired by cutting out the unsatisfactory material and placing new concrete which shall be secured with keys, dovetails, or anchors. Defective areas shall be chipped away to a depth of not less than 1 inch with the edges perpendicular to the surface. The area to be patched and a space at least 6 inches wide entirely surrounding it shall be wetted to prevent absorption of water from the patching mortar. A grout of equal parts Portland cement and sand with sufficient water to produce a brushing consistency, shall then be well rushed into the surface, followed immediately by the patching mortar. The patch shall be made of the same material and of approximately the same proportions as used for the concrete except that the coarse aggregate shall be omitted. The mortar shall not be richer than 1 part cement to 3 parts sand. On exposed surfaces, white Portland cement shall be substituted for a part of the gray Portland cement to match the color of the surrounding concrete. The proportion of white and gray cements shall be determined by making a trial patch.

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The amount of mixing water shall be as little as consistent with the requirements of handling and placing. The mortar shall be retempered without the addition of water by allowing it to stand for a period of 1 hour during which time it shall be mixed occasionally with a trowel to prevent setting.

The mortar shall be thoroughly compacted into place and screeded off so as to leave the patch slightly higher than the surrounding surface. It shall then be left undisturbed for a period of 1 to 2 hours to permit initial shrinkage before being finally finished. The patch shall be finished in such a manner as to match the adjoining surface.

Excessive rubbing of formed surfaces will not be permitted. All uniformed surfaces of concrete, exposed in the completed work, shall have a wood float finish without additional mortar.

B. Removal of Forms. In order that the rubbing required by these specifications shall be effective, nonsupporting forms may be stripped with 24 hours after concrete pouring is completed and initial rubbing required completed within 48 hours. If possible, patching and rubbing shall be done at the same time. This requirement regarding form removal is secondary to heating requirements and the specifications heretofore included regarding heating of concrete shall take precedence.

After the required curing time has elapsed, support forms may be removed to allow finishing. Finish shall be Type I, II, or III as required by the "Concrete Finishes" section. In general, surfaces that will show in the finished work will be rubbed down with a coarse carborundum stone. Floors and slabs shall be float finished as soon as possible after pouring unless otherwise specified. Cement or mortar coating will not be permitted. The Contractor should refer to the section on "Concrete Finishes" for complete finish requirements for all concrete units.

Rubbing is not required lower than 6 inches below water levels in basins, but all fins must be removed and holes patched. Exposed inside surfaces to be painted must be rubbed smooth.

The surfaces of exposed concrete roofs, walks and copings shall be finished with a wooden float and left with a gritty surface similar to that in general use for sidewalks. This finish and floating must be done at the proper period in the setting of the concrete. These outside exposed surfaces of floors and roofs must be finished as one piece of work without a separate top coat.

Basin and channel floors shall be struck off smooth and finished with a steel float to produce a surface easily cleaned. The inside exposed floors must be finished with a steel float to even surfaces and present a neat, smooth and satisfactory appearance. Finish with bevel around all curbs and other openings. Floors must be finished drain to floor traps and sump with slopes as shown on the plans. Floors at the walls must be level except where shown otherwise on the plans.

Surfaces of precast concrete members that are to be painted shall have all air holes and other imperfections filled and dressed to present surfaces comparable in smoothness and appearance to rubbed concrete as set forth above.

C. Watertightness. All concrete when finished must be watertight. Exposed concrete surfaces shall show no dampness when the interior of basins or exterior of pits have been filled with water for seven days. To obtain this result, the foregoing specifications must be rigidly followed. In case any leakage or dampness shows on the surface of any such walls after testing the time stated, then such defects must be remedied by the Contractor and work will not be accepted until this is done.

D. Openings for Pipes and Joints to Pipes. Pipes shall not be fixed in concrete wall or interior floor pours. Holes of a diameter 1 inch greater than the outside pipe diameter shall be formed accurately to pipe layout dimensions or shall be cored (10 inch diameter and under) in existing concrete slabs or walls.

When piping is placed, the annular ring around it shall be caulked from both sides with dry braided hemp (or unbraided where pipes do not center on grout closure is not necessary), to within 1 inch of wall surface

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or 2 inches if grout closure is necessary. Where exposed to view, inside basins, or where watertightness, airtightness, support or prevention of vibration is necessary, the remaining annular ring at the surface shall be troweled full with a nonshrink grout. Then the joint shall be raked back 1/2 inch from the surface and filled with a one to two mix grout of Portland Cement and sand. such joints shall be water and seepage tight.

Where malleable pipe (steel, wrought iron, or copper), a brittle pipe (hard rubber), rubber hose, or any pipe cut to fit on the job, passes through any concrete slab, floor or wall, a wrought or cast iron pipe nipple with about 1/2 inch greater diameter than the outside of the pipe shall be used as a sleeve and cast into the slab. In case of floors above ceilings, these sleeves shall extend 1/2 inch to 1 inch above floor surface, to prevent scouring water from running into them. If joint about pipe is required for watertightness or pipe support, the annular ring shall be caulked with dry, unbraided oakum to within 2 inches of surface. The ring at surface shall be filled with nonshrink grout, raked back 1/2 inch, and filled with 1/2 inch can of Portland Cement grout as previously mentioned.

Where holes greater than 10 inch diameter have to be cut for pipe in existing concrete slabs or walls, the space about the pipe shall be formed to original surfaces and the pipe wrapped with 1/2 inch braided hemp. Where walls and space give sufficient room for safely using large aggregate, this may be added in a quantity equal to the sand specified. After removal of forms, the yarn shall be removed for a depth of 2 inches from water side and/or exposed surfaces and the space refilled to surface with a nonshrink grout. Then the joint shall be raked back 1/2 inch from the surface and filled with a one to two mix grout of Portland Cement and sand.

E. Floor Finishes. The finish of all floors and slabs shall be as described below, by types. Listed below are descriptions of the various type finishes.

(1) Type "A" Screeded. This finish shall be obtained by placing screeds at frequent intervals and striking off to the surface elevation required. Unless otherwise stipulated, this type of finish shall be used on slabs over which quarry tile, ceramic tile, terrazzo, bituminous mixtures, grout swept in by mechanism, or similar type wearing surface is subsequently to be applied.

(2) Type "B" Wood Floated. This type of integral finish shall be obtained by working a previously screeded surface with a wood float until the desired texture is reached. Unless otherwise stipulated, this type finish shall be used for exterior paved areas, sidewalks, ramps and steps. Care shall be taken to prevent the formation of laitance and excess water on the finished surface.

(3) Type "C" Steel Troweled. This type of integral floor finish shall be obtained by first screeding and then giving a preliminary wood float finish which shall be true, even and free from depressions.

After this operation, and when the concrete has hardened sufficiently to prevent excess fine materials from working to the surface, the surface shall be compacted and smoothed with not less than two through and complete steel troweling operations. The finish shall be brought to a smooth, dense surface, free from defects and blemishes. In areas that are to be covered with resilient flooring, one complete steel troweling operation will be sufficient.

(4) Type "D" Swept-in Grout Topping. This finish shall be applied to certain tank floors as specified. Grout topping shall be placed and spread on a previously screeded and hardened concrete slab. Before placing the grout, the surface shall be properly cleaned, washed and coated with a mixture of water and Portland Cement. The grout shall then be plowed and swept into neat conformance with the blades or farms of the apparatus by turning or rotating the previously positioned mechanical equipment. Special attention is to be paid to true grades, shapes and tolerances as specified by the manufacturer of the equipment. Before beginning this finish, the CONTRACTOR shall notify the ENGINEER and the equipment manufacturer of the details of the operation, and obtain approval and recommendations, respectively, before commencing work.

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(5) Type "E" Hardened Finish. Floor surfaces requiring a hardened finish shall receive a concrete hardener of a type scheduled on the final pages of this section. Concrete hardeners shall be either a liquid applied to the floor surface or a metallic compound which is troweled into the floor surface and made integral with the floor. All concrete hardeners shall be applied in strict conformance with the manufacturer's directions and instructions.

(6) Type "F" Color Finish. Coloring agents shall be a product of an experienced manufacturer and shall be applied in complete accordance with the manufacturer's instructions. Colors and make will be specified on the final pages of this section, if their use is required.

F. Non-floor Finishes. Type I - All holes left by removal of ends of ties, and all other holes, depressions or voids shall be filled solid with mortar after first being thoroughly wetted. Holes shall be filled with a small tool that will permit pack the hole solidly with mortar. Mortar shall consist of one part cement to three parts sand, and the amount of mixing water shall be as little as consistent with the requirement of handling and placing. Color of mortar shall match the adjacent wall surface.

Type II - After completing the Type I finish specified above, the Contractor shall also remove all fins, burrs and other projections left by the removed forms.

Type III - This finish shall be applied after the completion of the Type II finish. A smooth, uniform surface shall be obtained using the "carborundum-rub" finish which shall consist of the following procedure: Surfaces shall be rubbed with a carborundum stone to eliminate irregularities. Unless the nature of the irregularities require it, the general surface of the concrete shall not be cut into. Bulging or protruding areas, which result from slipping or deflecting forms shall be ground flush or chipped out and re-dressed as directed by the Engineer. Brush finishing or painting with grout or neat cement will not be permitted. Corners and edges shall be slightly rounded by the use of the carborundum stone. No rubbing shall be done before the concrete is seven days old or until the concrete is thoroughly hardened and the mortar used for patching is firmly set.

3.7 Curing and Protection

A. General. All concrete shall be cured for a period of not less than seven consecutive days by an approved method, or combination of methods. The curing process shall be done so as to prevent loss of moisture from the concrete for the duration of the entire curing period. Unhardened concrete shall be protected from heavy rains and flowing water. All concrete shall be adequately protected from damage.

B. Moist Curing. Concrete shall be moist cured by maintaining all surfaces continuously (not periodically) wet for the duration of the entire curing period. Water for curing shall be clean and free from any elements which will cause staining or discoloration of the concrete. Where forms of wood are used and left in place during curing, the wood shall be kept wet at all time.

C. Membrane Curing. At the option of the Contractor and when approved by the Engineer, the concrete may be cured with an approved curing compound of the surface membrane type in lieu of moist curing with water provided a permanent stain is not produced and provided the concrete surface is not to receive rubbed finish, terrazzo, tile, paint, chemical hardening, grout, cement patch, or concrete topping. The curing compound shall be applied to formed surfaces immediately after the forms have been removed and the surfaces cleaned of any loose sand, mortar and debris. The surface to receive the compound shall be moistened thoroughly with water and the compound applied as soon as the moisture film has disappeared but when the surface is still damp. On unformed surfaces, the compound shall be applied immediately after the surface loses its free water and has a dull appearance.

The curing compound shall be applied in a two coat continuous operation by approved spraying equipment and at a coverage of not more than two hundred square feet per gallon for both coats. The second coat shall be applied to overlap the first coat in a direction at approximately right angles to the direction of the first application. Concrete surfaces which are subjected to heavy rainfall within three hours after the curing compound has been applied shall be resprayed by the method and at the coverage herein

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specified. All concrete surfaces on which curing compound has been applied shall be adequately protected for the duration of the entire curing period from any damage that would disrupt the continuity of the curing membrane.

The curing compound shall conform to Type 2 or Type 3 of ASTM C-309.

All curing compound shall be delivered to the site of the work in the original sealed container bearing the name of the manufacturer, the brand name and the manufacturer's batch number. The compound shall be approved prior to use. The compound shall be stored so as to prevent damage to the containers and water-emulsion types shall be protected from freezing.

D. Cold Weather. The air and forms in contact with the concrete shall be maintained at temperatures above forty degrees for at least seven days and at a temperature above freezing for at least 21 days. Concrete, permitted to be cured with curing compounds, shall be provided the same protection against freezing and low temperatures as provided herein. No fire or excessive heat shall be permitted near or in direct contact with concrete at any time.

3.8 Expansion and Contraction Joints

A. General. Joints shall be provided at the location indicated on the drawings and according to the details shown, or as otherwise approved. The methods and materials used shall be subject to approval and the materials shall conform to the specification applicable. In no case shall any fixed metal, embedded in concrete be continuous through an expansion or contraction joint, except as specifically detailed in the drawings.

B. Expansion Joint Filler. At all expansion joints shown on the drawings, a premolded joint filler of the thickness specified, shall be provided to prevent bond between and allow for the expansion and contraction of adjacent parts. The filler material shall be of sufficient length and width, and shall be accurately cut, matched and placed to prevent contact of the concrete in the parts of the structure to be separated.

Preformed expansion joint filler shall conform to the requirements of ASTM D-1752, Type I, Type II or Type III, unless bituminous type is specified. Bituminous type preformed expansion joint filler shall conform to the requirements of ASTM D-994.

C. Asphalt-Treated Roofing Felt. Two layers of heavy, smooth surface asphalt-treated roofing felt, approximate weight 55 pounds per 100 square feet, shall be placed at expansion joints, as shown on the drawings.

D. Waterstops. Waterstops shall be installed in joints as shown on the drawings or as otherwise directed to provide a continuous watertight diaphragm in the joint. All joints in metal waterstops shall be brazed or welded. Joints in rubber and plastic waterstops shall be cemented, fused, or vulcanized as recommended by the manufacturer. Adequate provisions shall be made to support and completely protect the waterstops during progress of the work. The Contractor shall replace or repair, at this own expense, any waterstops punctured, ruptured, or otherwise damaged before final acceptance of the work.

E. Dowel Bar Assembly. When required, dowel bar assembly shall be installed at the expansion joints as shown on the drawings. The dowel bars shall be plain, smooth steel bars of the size specified on the drawings and shall conform to ASTM A-15. An expansion sleeve shall be provided on one end of each dowel bar. The sleeve shall be metal of an approved type, crimped or capped on one end and provided a minimum of three inch length of covering of the dowel bar with a minimum of three-quarters of an inch expansion chamber beyond the end of the dowel bar. The portion of the dowel bar on the expansion sleeve side of the joint shall be coated with a heavy grease to prevent bond between the bar and the concrete. The dowel bar assembly shall be securely held in place by use of metal dowel chairs at each intersection of a dowel bar and spacer bar. The dowel bars shall be installed on proper horizontal and longitudinal alignment to assure a workable expansion device. The premolded joint filler at these

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expansion joints shall be held in a true vertical plane by means of a header board. The header board shall remain in place for a minimum of thirty minutes after the concrete has been placed on one side or until the concrete has set sufficiently to prevent sloughing, before the header is removed and the work of placing concrete continued.

3.9 Embedded Items

A. General. Before placing concrete, care shall be taken to determine that all embedded items are firmly and securely fastened in place as indicated on the drawings or required by the Engineer. All embedded items shall be clean and free of oil and other foreign matter such as loose coatings of rust, paint and scale. Any air lines, water lines, wall sleeves, or other materials embedded in structures shall conform to the above requirements and, upon completion of their use, shall be backfilled with concrete or grout as directed by the Engineer.

B. Pipe Embedded in Concrete. Where pipe is partially or wholly encased in concrete, care shall be taken that the pipe is firmly and securely held in place so that the alignment and grade of the pipe is not disturbed while the concrete is placed around the pipe.

End of Section

TEMPLATE FOR HIGHWAY CONSTRUCTION BEST MANAGEMENT PRACTICES (BMP) PLAN

This template is provided for the Contractor's use (optional) in the required submission of a Best Management Practices (BMP) plan. This narrative and the attached plan sheets address requirements of the Kentucky Division of Water KPDES KYR10 General Permit and the Kentucky Transportation Cabinet / Best Management Practices (BMP) plan – Groundwater Protection plan for Highway Construction Activities.

Template Preparer Glen Ross, P.E. 859.223.5694, glenross@msexlex.com

Date: August 6, 2018 KY DOW NOI Attached: Yes _____ No: _____

1. CONTACT INFORMATION AND SITE DESCRIPTION

Project Name and Location

Bradshaw Mill Road (CR 1011) – Bridge Replacement
Garrard County, KY 40444

Site Owner Name and Contact Information

Garrard County Fiscal Court
15 Public Square
Lancaster, KY 40444
Attn: John Wilson, Judge Executive
859-792-3531

Construction Site SWPPP/BMP Plan Manager and Contact Information

Name, Title
(Contact Info)

Project Start and End Dates

Start: _____, 2018
End: _____, 2018

Description – Existing Site Conditions, Purpose, and Types of Soil Disturbing Activities

Site Area and Disturbed Acreage

Sequence of Major Activities

Construction Activity	Schedule Considerations
Work crew orientation	Pre-construction meeting to review permits, plans, schedule, and staffing.
Construction access – install entrance to road work site, initial construction routes, initial areas designated for vehicle parking	This is the first land-disturbing activity. Minimal clearing/grading will be done to install stabilized #2 rock material storage site exit with geotextile underliner, at least 50 ft long. Downgradient silt fences will be installed below areas to be cleared, graded, or cut/filled. Do-not-disturb areas will be marked off.
Sediment traps and barriers –traps, sediment fences, outlet protection	ID locations and install temporary sediment traps as needed to intercept flow. Build diversions prior to upgradient work where possible, and seed/mulch/blanket slopes immediately. Relocate and reinstall silt fences as necessary prior to upgradient work. Maintain and remove sediment as necessary.
Runoff and run-on controls – filter socks or pillows, straw wattles	Install controls as needed to divert clean flows in streets around soils stockpiles. Additional runoff control measures may be installed during excavation.
Land clearing and excavation— site preparation (cutting, back filling, and grading, sediment traps, barriers, diversions, and drains)	Clearing and excavation will begin after installation of principal sediment and runoff control measures, and additional control measures will be installed as excavation continues. Trees and buffer areas around streams, sinkholes, and other protected areas will be marked for preservation.
Runoff conveyance system - culverts, channels, inlet and outlet protection, slope drains	Inlet and outlet protection measures will be installed at culverts and surface inlets. Drainage ditches will be stabilized immediately with sod or seed with erosion control blanket.
Surface stabilization— temporary and permanent seeding, mulching, sodding, riprap	All disturbed grass areas will be graded and stabilized as soon as possible. Stabilization will begin within 14 days on areas of the site where construction has permanently or temporarily ceased. Temporary and permanent stabilization will comply with the project specifications. Erosion control blankets will be used on slopes in accordance with the project specifications.
Utilities, paving	During construction, erosion and sedimentation control measures will be installed as needed, such as construction entrances and downgradient silt fences and sediment traps. Areas at final grade not in the immediate construction area will be seeded/mulched as soon as possible. Trench areas will be protected from erosion until final restoration.
Landscaping and final stabilization—topsoiling, trees and shrubs, permanent seeding, mulching.	This is the last construction phase. All remaining disturbed areas will be stabilized, including borrow and spoil areas. Temporary control structures will be removed and the area will be seeded and mulched.

1. SITE DESCRIPTION, MAPS, AND DRAWINGS (INCLUDED BELOW OR ATTACHED)

Site Plan Showing Pre/Post Construction Topography, Construction, Drainage Features, and all BMPs

Name of Receiving Waters

There are no other streams in the project site.

TMDLs and Pollutants of Concern in Receiving Waters

Potential Sources of Pollutants

Sediment from land clearing and pipeline excavation; fertilizer; concrete washout water; oil/fuel/grease from equipment; sanitary waste; and trash/debris.

2. EROSION PREVENTION AND SEDIMENT CONTROL MEASURES

Limits of Disturbance and Project Phasing

Land disturbance activities will be phased to minimize the amount of soil exposed and the length of exposure time. The overall objective will be to achieve final grades as quickly as possible, and to stabilize all gross areas with seed, mulch or blankets/mats within 14 days after final grade is achieved, or after grading work is suspended on that portion of the site.

Stabilization Practices

Temporary Stabilization – Top soil stockpiles and disturbed portions of the site where construction activity stops for 14 days or more will be stabilized with temporary seed or straw mulch no later than 14 days from the last construction activity in that area (portion) of the site. Seeding rates will be consistent with the Kentucky Erosion Prevention and Sediment Control Field Guide. Lime and fertilizer will be applied only when necessary. After seeding, each area shall be mulched with at least 3,000 pounds per acre of blown or hand-scattered straw. The straw will be netted down or crimped into place by a disk harrow with the blades set straight. Slopes will be covered with blankets or mats consistent with the project details. Areas of the road which are to be paved will be temporarily stabilized by applying stone sub-base until bituminous pavement can be applied. Dust will be controlled by water sprayed from a tanker truck as needed during dry weather.

Permanent Stabilization – Disturbed portions of the site where construction activities are completed will be stabilized with permanent seed no later than 14 days after completion of grading in that area. Seed and mulch will be applied consistent with the Kentucky Erosion Protection and Sediment Control Field Guide. Lime and fertilizer will be applied only if needed. After seeding, each area will be mulched with 4,000 pounds per acre of straw. The straw mulch will be netted down or crimped into place by a disk harrow with blades set straight. Slopes will be covered with erosion control blankets or turf reinforcement mats consistent with the project details. Ditches will be triple-seeded and lined with erosion control blanket or turf reinforcement matting.

Structural Practices

Sediment Traps – will be sited and constructed as needed, according to the attached drawings and through field adaptations to changing grades and emergence of gullies that need to be controlled. Traps will consist of rock or rock bag berms across concentrated flow areas and be designed to intercept, detain, and settle out these flows. Traps installed as field adaptations will be logged on the erosion control plan sheets.

Inlet Protection Measures – will be used to detain, pond, and settle (or filter) out sheet and concentrated flows moving toward curb, drop, or other inlets. Inlet protection structures will consist of rock bags, #2 rock berms, trenched in silt fence on framing, or commercial devices.

Ditch Check Dams – will be installed as needed to control ditch downcutting, trap sediment, and stabilize ditches. Check dam installation will be consistent with the Kentucky Erosion Protection and Sediment Control Field Guide and BMP Technical Specifications Manual.

Site Runoff Management

Sediment will be prevented from leaving the site to the maximum extent practicable. Runoff will be diverted

onto undisturbed vegetated areas and revegetated areas where possible for infiltration. Landscaped areas with no buildings or roads will be brought to grade and planted/seeded/mulched within 14 days. Operations are limited to a 60' wide temporary construction easement along the proposed roads.

3. OTHER CONTROL MEASURES

Offsite Vehicle Tracking

A stabilized #2 and larger rock construction exit with geotextile underliner will be installed to help reduce vehicle tracking of sediments at all storage/parking area exits onto paved roads. The stabilized exit will be 100 ft where possible, and at least 50 ft in length. The paved street adjacent to the site entrance will be swept/cleaned daily if necessary to remove any excess mud, dirt, or rock tracked from the site. The rock exit will be grubbed lightly or otherwise maintained as needed to clear (shake down) dry mud. Dump trucks hauling material from the construction site will be covered with a tarpaulin.

Waste Disposal

Waste Materials – All waste materials that may leach pollutants (caulk tubes, oil/grease containers, liquids of any kind, soluble materials, etc.) will be collected and stored in a covered metal dumpster rented from the _____, which is a licensed solid waste management company in Kentucky. The dumpster will meet all state solid waste management regulations. Construction debris and other wastes that do not leach pollutants will be deposited in a covered or open-topped dumpster. The dumpster will be emptied when full, and the contents will be hauled to the Rowan County Landfill. No construction waste materials will be buried onsite. All personnel will be instructed regarding the correct procedure for waste disposal. Notices stating these practices will be posted at the jobsite and _____, the individual who manages the day-to-day site operations, will be responsible for seeing that these procedures are followed.

Hazardous Waste – All waste materials will be disposed of in the manner specified by local or state regulation or by the manufacturer. Site personnel will be instructed in these practices and _____, the individual who manages day-to-day site operations, will be responsible for seeing that these practices are followed.

Sanitary Waste – Portable toilets will be used on site for sanitary wastes. All sanitary waste will be collected from the portable units as needed to prevent excessive odors and overflows by the _____, a licensed Kentucky sanitary waste management contractor, as required by local regulation. Portable units will be placed away from storm drain inlets, ditches, creeks, and other water bodies

Timing of Control Measures

As indicated in the Sequence of Major Activities, the stabilized construction exit, silt fences and sediment barriers will be constructed prior to clearing or excavation of any other portions of the site. Sediment traps will be constructed as needed in areas where gulying occurs. Ditches will be repaired and triple seeded/mulched (or blanketed) after construction. Areas where construction activity temporarily ceases for more than 14 days will be stabilized with temporary seed and/or mulch within 14 days of the last disturbance. Once construction activity ceases permanently in an area, that area will be seeded and mulched within 14 days. Temporary controls in permanently stabilized areas, such as silt fences, sediment barriers, ditch checks, temporary sediment traps, surface inlet traps, etc., will be removed. Controls will remain in place until all vegetation is established and ditches are stable.

4. OTHER STATE AND LOCAL PLANS

Certification of Compliance with Federal, State, and Local Regulations

This Stormwater Pollution Prevention Plan (BMP Plan) reflects Kentucky Division of Water and KYTC requirements for stormwater management and erosion and sediment control. To ensure compliance, this

plan was prepared in accordance with the Kentucky BMP Planning and Technical Specifications Manual published by KY DOW and KY DOC. There are no other local, state, or federal permits (e.g., Clean Water Act Section 404 dredge/fill permit, KY DOW Section 401 Water Quality Certification, KY DOW Floodplain Permit, etc.) needed for this project.

5. MAINTENANCE PROCEDURES

Stormwater, Erosion, and Sediment Control Maintenance Practices

Maintenance of all BMPs at the site will be handled by _____, who has been trained on construction site BMPs at workshops sponsored by the KY DOW and the Kentucky Erosion Protection and Sediment Control (KEPSC) Program. Other workers on-site will be trained in BMP installation, maintenance, and good housekeeping by _____. These are the inspection and maintenance practices that will be used to maintain erosion and sediment controls:

- Areas at final grade will be seeded and mulched within 14 days.
- All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of being reported. This information will be logged on the SWPPP/BMP Plan.
- Silt fences will be inspected for bypassing, overtopping, undercutting, depth of sediment, tears, and to ensure attachment to secure posts. Bypasses will be repaired immediately.
- Built-up sediment will be removed from behind the silt fence before it has reached one third (1/3) up the height of the fence.
- The inlet sediment protection devices will be inspected for depth of sediment, and built-up sediment will be removed when it impairs flow into the inlet and at the end of the job.
- Diversion dikes and berms will be inspected and any breaches promptly repaired. Areas that are eroding or scouring will be repaired and re-seeded / mulched as needed.
- Temporary and permanent seeding and mulching will be inspected for bare spots, washouts, and healthy growth. Bare or eroded areas will be repaired as needed.

6. INSPECTION PROCEDURES

Stormwater, Erosion, and Sediment Control Inspection Practices

Inspection of all BMPs at the site will be handled by _____, who has been trained on inspecting construction site BMPs at workshops sponsored by the KY DOW and the Kentucky Erosion Protection and Sediment Control (KEPSC) Program.

- All erosion prevention and sediment control measures will be inspected at least once each week and following any rain of one-half inch or more.
- Inspections will be conducted by _____, who has been trained by the KY DOW and KEPSC. _____ will train three people who will be responsible for assisting in the inspections and installing, maintaining, and repairing the controls on the site.
- Inspection reports will be written, signed, dated, and kept on file for two years.

7. NON-STORMWATER DISCHARGES

It is expected that the following non-storm water discharges will occur from the site during the construction period:

- Water from water line flushings.
- Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred).
- Uncontaminated groundwater and rain water (from dewatering during excavation).

All non-storm water discharges will be directed to a filter bag to remove sediment and other contaminants. Contractor will provide details of discharge filtration to LFUCG of any diversion bypass pumping proposed at the site.

The materials or substances listed below are expected to be present onsite during construction:

- Concrete
- Caulk
- Grout/Concrete Repair Materials
- Tar/Mastic Compounds
- Fertilizers for Seeding
- Petroleum Based Products
- Cleaning Solvents
- Wood

Spill Prevention and Material Management Practices

The following material management practices will be used to reduce the risk of spills or other accidental exposure of materials and substances to exposure to the weather and/or runoff.

Good Housekeeping

The following good housekeeping practices will be followed onsite during the construction project.

- An effort will be made to store only enough product required to do the job
- Products and materials will be stored away from the surface drainage system.
- All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure
- Products will be kept in their original containers with the original manufacturer's label
- Substances will not be mixed with one another unless recommended by the manufacturer
- Whenever possible, all of the product will be used up before disposing of the container
- Manufacturers' recommendations for proper use and disposal will be followed
- The site superintendent will inspect daily to ensure proper use and disposal of materials onsite.
- Dust will be controlled by water sprayed from a tanker truck as needed during dry weather.

Hazardous Products

These practices will be used to reduce the risks associated with any and all hazardous materials.

- Products will be kept in original containers unless they are not resealable.
- Original labels and material safety data sheets (MSDS) will be reviewed and retained.
- If surplus product must be disposed of, manufacturers' or state/local recommended methods for proper disposal will be followed.

Petroleum Products

This project (will / will not) have over 1,320 gallons of petroleum products with a total capacity, sum of all containers 55 gallon capacity and larger.

All onsite vehicles will be fueled and maintained at _____, monitored for leaks, and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products stored onsite will be stored in tightly sealed containers, which are clearly labeled. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations.

Fertilizers

If used, fertilizers used will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be covered with mulch or blankets or worked into the soil to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

Concrete Truck Washout

Concrete truck mixers and chutes will not be washed on pavement, near storm drain inlets, or within 75 feet of any ditch, stream, wetland, lake, or sinkhole. Where possible, excess concrete and wash water will be discharged to areas prepared for pouring new concrete, flat areas to be paved that are away from ditches or drainage system features, or other locations that will not drain off site. Where this approach is not possible, a constructed concrete wash-out pit will be installed away from ditches to receive the concrete wash water.

Spill Control Practices

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:

- Manufacturers' recommended methods for spill cleanup will be clearly posted. All personnel will

be made aware of procedures and the location of the information and cleanup supplies.

- Materials and equipment necessary for spill cleanup will be kept in the material storage area. Equipment and materials will include but not limited to brooms, dust pans, mops, rags, gloves, kitty litter, sand, sawdust, and plastic and metal trash containers.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous material will be reported to the appropriate state/local agency.
- The spill prevention plan will be adjusted as needed to prevent spills from reoccurring and improve spill response and cleanup.
- _____, the site superintendent responsible for the day-to-day site operations, will be the spill prevention and cleanup coordinator. He will designate at least three other people onsite to receive spill prevention/cleanup training and assist in cleanups. Their names will be posted in the material storage area and in the office trailer outside.

8. CONTRACTOR AND SUBCONTRACTOR CERTIFICATIONS

SWPPP/BMP Files, Updates, and Amendments

This BMP Plan and related documents (e.g., NOI, inspection reports, etc.) will be kept on file at the construction site by _____, the Site Manager. The SWPPP/BMP plan will be updated by the Owner and/or Site Manager to reflect any and all significant changes in site conditions, selection of BMPs, the presence of any unlisted potential pollutants on site, or changes in the Site Manager, contractor, subcontractors, or other key information. Updates and amendments will be made in writing within 7 days and will be appended to the original BMP Plan and available for review.

Stormwater Pollution Prevention Plan Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed: _____

Date: _____

(Name, Title, Organization)

I certify under penalty of law that I understand the terms and conditions of the general KPDES permit that authorizes the storm water discharges associated with the construction site activity identified as part of this certification.

Subcontractor Certification

The subcontractors below certify under penalty of law that they understand the terms and conditions of the general KPDES permit that authorizes the storm water discharges associated with the construction site activity identified as part of this certification.

Name, Title
Organization Contact
Info

Name, Title
Organization
Contact Info

Construction Site Inspection Report

Company:	Site:	County:
Site Operator:		Inspection Date:
Receiving Water:	Total Site Area (acres):	# Disturbed Acres:
Inspector Name:	Inspector Qualifications:	
Inspection Type: Every 7 days: Every 14 days and after ½ inch rain	Days Since Last Rainfall _____	# Inches of Last Rainfall: _____

Field Inspection Observations

BMP Category	Compliance Poor Fair Good	Field Indicators for Compliance
Project Operations		Notice of Intent (KPDES permit) and other local/state permits on file BMP Plan on site and available for review; project activities following BMP plan Weekly inspection and rain-event reports on BMPs available for review Diversions, silt checks/traps/basins, and silt fences/barriers installed prior to clearing Grading and clearing conducted in phases to minimize exposed soil areas No vegetation removal or operations in stream or sinkhole buffer area (25 ft min) Rock pad with underliner in place on all construction site exits leading to paved roads No sediment, mud, or rock on paved public roads in project area Dust control if needed when working in residential areas during dry conditions
Drainage Management		Upland runoff diverted around bare soil areas with vegetated/lined ditches/berms Drainage channels exiting the site are lined with grass/blanket/rock and stabilized Discharges from dewatering operations cleaned in silt fence enclosure or other filter No muddy runoff leaving site after rains up to 1½ inches
Erosion Protection		Exposed soil seeded/mulched after 2 weeks if no work is planned for the next 7 days Soils on steep slopes seeded/mulched/blanketed as needed to prevent rutting
Sediment Barriers		Silt fence, rock filter, or other sediment barrier below all bare soil areas on slopes Barrier installed across slope on the contour, trenched in, posts on downhill side Multiple sediment barriers at least 125 ft apart on unseeded slopes steeper than 4:1 J-hook interceptors along silt fence where heavy muddy flows run along fencing No visible undercutting or bypassing or blowout of sediment barrier Accumulated sediment is less than halfway to the top of sediment barrier
Slope Protection		Slopes tracked, disked, or conditioned after final grade is established Slopes seeded, mulched, or blanketed within 14 days, no unmanaged rills or gullyng Heavy downslope flows controlled by lined downdrain channels or slope drain pipes No muddy runoff from slopes into streams, rivers, lakes, or wetlands
Inlet Protection		Inlet dam/device or filtration unit placed at all inlets receiving muddy flows No visible undercutting, bypassing, or blowout of inlet protection dam or device Accumulated sediment is less than halfway to the top of the inlet protection dam/device
Outlet Protection		High flow discharges have rock or other flow dissipaters of adequate sizing at outlet Culvert outlets show no visible signs of erosion/scour, bank failure, or collapse
Ditch and Channel Stabilization		No unmanaged channel bank erosion or bottom scouring visible within or below site Ditches with slopes more than 3% have check dams spaced as needed, if not grassed Ditch check dams tied in to banks, with center 4" lower than sides, and no bypassing Ditches with slopes of up to 5% are thickly seeded with grass (minimum requirement) Ditches 5% to 15% are lined with thick grass and erosion control blankets as needed Ditches 15% to 33% are lined with thick grass and matting or other approved product Ditches exceeding 33% are paved or lined with rock or other approved product

**GARRARD COUNTY FISCAL COURT
BRADSHAW MILL ROAD (CR 1011) – BRIDGE REPLACEMENT
CONSTRUCTION IMPACTS ON UTILITIES**

Utility coordination efforts determined that utility relocation work is required to complete the project. Any work pertaining to these utility facilities are defined in the bid package and are to be carried out as instructed by the Owner. The contractor will be responsible for any coordination or adjustments that are discussed or quantified in the proposal.

Utility Information Note

SPECIAL CAUTION NOTE - PROTECTION OF UTILITIES

The contractor will be responsible for contacting all utility facility owners on the subject project to coordinate his activities. The contractor will coordinate his activities to minimize and, where possible, avoid conflicts with utility facilities. Due to the nature of the work proposed, it is unlikely to conflict with the existing utilities beyond minor facility adjustments. Where conflicts with utility facilities are unavoidable, the contractor will coordinate any necessary relocation work with the facility owner and Project Engineer. The Owner maintains the right to remove or alter portions of this contract if a utility conflict occurs.

The Owner makes no guarantees regarding: the existence of utilities, the location of utilities, the utility companies in the project scope, or the potential for conflicts encountered during construction. Any location of utilities provided herein has been furnished by the facility owners, field inspection, and/or reviewing record drawings. The accuracy of the information provided is undetermined. It will be the contractor's responsibility to locate utilities before excavating. If necessary, the roadway contractor shall determine the exact location and elevation of utilities by hand digging to expose utilities before excavating in the area of a utility.

The contractor is advised to contact KY 811 one-call system; however, the contractor should be aware that owners of underground facilities are not required to be members of the KY 811 one-call system. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the project area. Note: See attached sheet for Rowan County Utility Contacts.

UTILITY CONTACT LIST

1.

GARRARD COUNTY FISCAL COURT

Garrard County Fiscal Court
15 Public Square
Lancaster, KY 40444

Contact: John Wilson, Judge Executive
859792-3531

Quality Control - Quality Assurance

As per the KYTC Standard Specifications and the appropriate KY Methods detailed herein, the Contractor is responsible for quality control of asphalt mixtures. Quality Assurance shall be provided by the Owner's Representative. Quality Control-Quality Assurance for concrete mixtures shall be provided by the Owner's Representative. Other sampling and testing of materials, as detailed in the project specifications, the KYTC Standard Specifications, the KYTC Sampling Manual, and the KY Methods shall be coordinated between the Contractor and Owner's Representative as required. All materials used on the project shall meet the appropriate requirements established herein and proper documentation and certifications are to be provided by the Contractor to the Owner's Representative for approval prior to use of said material on the project.

Asphalt

1. The inspector shall verify the mixture volumetrics per 4,000 tons of material that is placed for (AC) asphalt surface content and gradation.
2. The core density will be collected and tested at four randomly selected locations per 1,000 tons of material that is placed along the mainline area of roadway. Two additional samples will be taken from the joint area along the same corridor. The percent of solid density of each core will be determined.
3. Temperature reading shall be randomly taken at least four times for every 1,000 tons of material that is placed.
4. Emulsified asphalts should be sampled per 15,000 tons of asphalt mixture. Mixture should then be tested to ensure it meets KYTC standard specifications. If less than 1,000 tons of asphalt mixture are used on a project, no sample is required.

Sampling Methods: For all approved sampling methods, see KYTC specifications:

Sampling Material by Random Number Sampling: See KM 64-113

Sampling Asphalt Mixtures: See KM 64-425

Method for Coring and Determining Percent of Solid Density of In-Place, Compacted, Asphalt Mixture Courses: See KM 64-442

Concrete/Cement

1. Test the first truck load for air content test, slump test, temperature, and prepare cylinders (set of 2 for 6x12's or a set of 3 for 4x8's).
2. If a satisfactory control is established, then test will be performed for each 100 cubic yards poured daily.
3. If the initial test does not fall within specified limits, the load shall be turned away and every subsequent load will be tested until production meets the specifications.
4. For every slump and air test performed, cylinders shall be cast on all batches.
5. For pours of 15 cubic yards and less, no test will be required unless concrete quality is questionable.

Sampling Methods: For all approved sampling methods, see KYTC specifications:

Air Content: See KM 64-303

Slump Test: See KM 64-302

Sampling Fresh Concrete: See KM 64-301

Temperature: See KM 64-318

Cylinders: See KM 64-305

****NOTE:** All tests are to be performed by certified inspector or construction coordinator. Lab test shall be performed by a prequalified State approved testing facility. All results shall be properly documented and turned in with inspector's daily inspection logs. Lab results shall be turned in with weekly or monthly report, whichever is required by the department.**

**TECHNICAL SPECIFICATIONS
KYTC STANDARD SPECIFICATIONS FOR
ROAD AND BRIDGE CONSTRUCTION
2012 EDITION**

The Technical Specifications used to describe a certain project material, item or construction procedure, is “Standard Specifications for Road and Bridge Construction”, 2012 or latest edition from the Kentucky Transportation Cabinet. The KYTC standard specifications are incorporated herein by reference. A copy can be downloaded at the KYTC website.

The following exceptions are taken to the referenced Specifications:

- (1) Where reference is made in the technical specifications to measurement and method of payment, the method of measurement and payment is indicated by Section 00310 – Bid Form in these project specifications shall govern.
- (2) Where reference is made to administration procedures; inspections by KYTC; engineering procedures by KYTC, such procedures are superseded by the project plans and documents.

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
P.O. BOX 59
LOUISVILLE KY 40201-0059

August 2, 2018

Regulatory Division
South Branch
ID No. LRL-2018-673-mad

John Wilson
Garrard County Fiscal Court
15 Public Square, Ste 3
Lancaster, KY 40444

Dear Mr. Wilson:

This is in response to your request for authorization to replace an existing cast-in-place concrete bridge with new pre-cast concrete box beam bridge 75' long and 16' wide over Back Creek in Garrard County Fiscal Court. The information supplied by you was reviewed to determine whether a Department of the Army (DA) permit will be required under the provisions of Section 404 of the Clean Water Act.

Your project is considered a discharge of backfill or bedding material for a road crossing. The project is authorized under the provisions of 33 CFR 330 Nationwide Permit (NWP) No. 14, Linear Transportation Projects, as published in the Federal Register January 6, 2017. Under the provisions of this authorization you must comply with the enclosed Terms and General Conditions for Nationwide Permit No. 14.

You must also comply with the enclosed Water Quality Certification (WQC) Conditions for Nationwide Permit No. 14, dated March 19, 2017, issued by the Kentucky Division of Water (KDOW). Once you obtain your certification, or if no application was required, you may proceed with the project without further contact or verification from us.

This verification is valid until March 18, 2022. The enclosed Compliance Certification must be submitted to the District Engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later. Note that we also perform periodic inspections to ensure compliance with our permit conditions and applicable Federal laws. A copy of this letter will be forwarded to your agent and to the KDOW.

If you have any questions, please contact this office by writing to the above address, ATTN: CELRL-RDS, or by calling me at 502-315-6689. All correspondence pertaining to this matter should refer to our ID No. LRL-2018-673-mad.

Sincerely,

ORIGINAL SIGNED

Matt Dennis
Senior Project Manager
Regulatory Division



MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

**ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION**

R. BRUCE SCOTT
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

General Certification--Nationwide Permit # 14 Linear Transportation Projects

This General Certification is issued March 19, 2017, in conformity with the requirements of Section 401 of the Clean Water Act of 1977, as amended (33 U.S.C. §1341), as well as Kentucky Statute KRS 224.16-050.

For this and all nationwide permits, the definition of surface water is as per 401 KAR 10:001 Chapter 10, Section 1(80): Surface Waters means those waters having well-defined banks and beds, either constantly or intermittently flowing; lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface. Lagoons used for waste treatment and effluent ditches that are situated on property owned, leased, or under valid easement by a permitted discharger are not considered to be surface waters of the commonwealth.

Agricultural operations, as defined by KRS 224.71-100(1) conducting activities pursuant to KRS 224.71-100 (3), (4), (5), (6), or 10 are deemed to have certification if they are implementing an Agriculture Water Quality Plan pursuant to KRS 224.71-145.

For all other operations, the Commonwealth of Kentucky hereby certifies under Section 401 of the Clean Water Act (CWA) that it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 304, 306 and 307 of the CWA, will not be violated for the activity covered under NATIONWIDE PERMIT 14, namely Linear Transportation Projects, provided that the following conditions are met:

1. The activity will not occur within surface waters of the Commonwealth identified by the Kentucky Division of Water as Outstanding State or National Resource Water, Cold Water Aquatic Habitat, or Exceptional Waters.
2. The activity will not occur within surface waters of the Commonwealth identified as perpetually-protected (e.g. deed restriction, conservation easement) mitigation sites.
3. The activity will impact less than 1/2 acre of wetland/marsh.

General Certification--Nationwide Permit # 14

Linear Transportation Projects

Page 2

4. The activity will impact less than 300 linear feet of surface waters of the Commonwealth. Stream realignment greater than 100 feet and in-stream stormwater detention/retention basins are not covered under this general water quality certification.
5. For complete linear transportation projects, all impacts shall not exceed a cumulative length of 500 linear feet within each Hydrologic Unit Code (HUC) 14.
6. Any crossings must be constructed in a manner that does not impede natural water flow.
7. Stream impacts covered under this General Water Quality Certification and undertaken by those persons defined as an agricultural operation under the Agricultural Water Quality Act must be completed in compliance with the Kentucky Agricultural Water Quality Plan (KWQP).
8. The Kentucky Division of Water may require submission of a formal application for an individual certification for any project if the project has been determined to likely have a significant adverse effect upon water quality or degrade the waters of the Commonwealth so that existing uses of the water body or downstream waters are precluded.
9. Activities that do not meet the conditions of this General Water Quality Certification require an Individual Section 401 Water Quality Certification.
10. Activities qualifying for coverage under this General Water Quality Certification are subject to the following conditions:
 - Projects requiring in-stream stormwater detention/retention basins shall require individual water quality certifications.
 - Erosion and sedimentation pollution control plans and Best Management Practices must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur (401 KAR 10:031 Section 2 and KRS 224.70-100).
 - Sediment and erosion control measures, such as check-dams constructed of any material, silt fencing, hay bales, etc., shall not be placed within surface waters of the Commonwealth, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, design and placement of temporary erosion control measures shall not be conducted in such a manner that may result in instability of streams that are adjacent to,

General Certification--Nationwide Permit # 14

Linear Transportation Projects

Page 3

upstream, or downstream of the structures. All sediment and erosion control devices shall be removed and the natural grade restored within the completion timeline of the activities.

- Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
- Removal of riparian vegetation in the utility line right-of-way shall be limited to that necessary for equipment access.
- To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions.
- Heavy equipment, e.g. bulldozers, backhoes, draglines, etc., if required for this project, should not be used or operated within the stream channel. In those instances in which such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation.
- Any fill shall be of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters and/or cause violations of water quality standards. If rip-rap is utilized, it should be of such weight and size that bank stress or slump conditions will not be created because of its placement.
- If there are water supply intakes located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when such work will be done.
- Should evidence of stream pollution or jurisdictional wetland impairment and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the KDOW shall be notified immediately by calling (800) 928-2380.

Non-compliance with the conditions of this general certification or violation of Kentucky state water quality standards may result in civil penalties.



MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

ANTHONY R. HATTON
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

STREAM CONSTRUCTION PERMIT
For Construction In Or Along A Stream

Issued to: **Garrard Co Fiscal Court**
Address: **15 Public Sq. Ste. 3**
Lancaster, KY 40444

Permit expires on
July 2, 2019

Permit No. **27931P** AI: **136987**

In accordance with KRS 151.250 and KRS 151.260, the Energy and Environment Cabinet approves the application dated **June 26, 2018** for **replacement of 80 feet long and 7 pier existing bridge on Bradshaw Mill Road with a new bridge of 75 feet long supported by two piers and low-cord of the deck one foot higher than the existing bridge deck across Back Creek (Bradshaw Mill Road), at about 0.05 stream mile from Paint Lick Creek, with coordinates 37.70750, -84.48028, near the community of Buckeye in Garrard County.**

There shall be no deviation from the plans and specifications submitted and hereby approved unless the proposed change shall first have been submitted to and approved in writing by the Cabinet. This approval is subject to the attached limitations. **Please read these limitations carefully!** If you are unable to adhere to these limitations for any reason, please contact this office prior to construction.

This permit is valid from the standpoint of stream obstruction only. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal and local agencies. Specifically if the project involves work in a stream, such as bank stabilization, dredging, relocation, or in designated wetlands, a 401 Water Quality Certification from the Division of Water will be required.

This permit is nontransferable and is not valid unless actual construction of this authorized work is begun prior to the expiration date noted above. Any violation of the Water Resources Act of 1966 as amended is subject to penalties as set forth in KRS 151.990.

If you have any questions regarding this permit, please call Mr. Solitha Dharman at 502-782-6936.

Issued July 2, 2018.

Ron Dutta, P.E., Supervisor
Floodplain Management Section
Surface Water Permit Branch
Division of Water

RD/SD/rd

pc: Frankfort Regional Office
Timothy Scott – Garrard County Floodplain Coordinator
Glenn Ross, P.E., MSE
File



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Stream Construction Permit
Bradshaw Mill Rd Bridge - Garrard Co
Facility Requirements
Permit Number: 27931P
Activity ID No.:APE20180001

STRC0000000001 (AI: 136987 - Bridge) replacement of 80 feet long and 7 pier existing bridge on Bradshaw Mill Road with a new bridge of 75 feet long supported by two piers and low-cord of the deck one foot higher than the existing bridge deck in the floodplain of Back Creek, at about 0.05 stream miles, with coordinates 37.70750, -84.48028, near Buckeye in Garrard County.:

Submittal/Action Requirements:

Condition No.	Condition
S-1	Garrard County Fiscal Court must submit final construction report within 90 days after completion of construction. Garrard County Fiscal Court must certify in writing that the project has been completed in accordance with the approved plans and specifications. A Final Construction Report Form is enclosed. [401 KAR 4:060 Section 6]

Narrative Requirements:

Condition No.	Condition
T-1	The issuance of this permit by the cabinet does not convey any property rights of any kind or any exclusive privilege. [KRS 151.250 & 401 KAR 4:060]
T-2	This permit is issued from the standpoint of stream obstruction only and does not constitute certification of any other aspect of the proposed construction. The applicant is liable for any damage resulting from the construction, operation, or maintenance of this project. This permit has been issued under the provisions of KRS Chapter 151.250 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal and local agencies. [KRS 151.250]
T-3	A copy of this permit must be available at the construction site. [KRS 151.250]
T-4	Any work performed by or for Garrard County Fiscal Court that does not fully conform to the submitted application or drawings and the limitations set forth in this permit, is subject to partial or total removal and enforcement actions pursuant to KRS 151.280 as directed by the Kentucky Department for Environmental Protection. [KRS 151.280]
T-5	Any design changes or amendments to the approved plans must be submitted to the Division of Water and approved in writing prior to implementation. [KRS 151.250]
T-6	Since Garrard County participates in the National Flood Insurance Program, a local floodplain permit must be obtained prior to beginning of construction. Upon completion of construction Garrard County Fiscal Court must contact the local permitting agency for final approval of the construction for compliance with the requirements of the local floodplain ordinance. [401 KAR 4:060 Section 9(c)]

Stream Construction Permit
Bradshaw Mill Rd Bridge - Garrard Co
Facility Requirements
Permit Number: 27931P
Activity ID No.: APE20180001

STRC0000000001 (AI: 136987 - Bridge) replacement of 80 feet long and 7 pier existing bridge on Bradshaw Mill Road with a new bridge of 75 feet long supported by two piers and low-cord of the deck one foot higher than the existing bridge deck in the floodplain of Back Creek, at about 0.05 stream miles, with coordinates 37.70750, -84.48028, near Buckeye in Garrard County.:

Narrative Requirements:

Condition No.	Condition
T-7	At no point below the base flood elevation 674.0 feet (NAVD 88) shall the use of construction materials or the permanent storage of materials subject to flood damage be allowed. [401 KAR 4:060]
T-8	The permittee must obtain a Water Quality Certification (or a determination that none is required) through the Division of Water, Water Quality Branch before beginning construction. Contact the Water Quality Certification Supervisor at (502) 564-3410. [KRS 224.16-050 & Clean Water Act Section 401]
T-9	Garrard County Fiscal Court shall maintain the bridge in good condition and keep it free of drift and debris at all times. [401 KAR 4:060 Section 3(1), KRS 151.250]
T-10	Erosion prevention measures, sediment control measures, and other site management practices shall be designed, installed, and maintained in an effective operating condition to prevent migration of sediment off site. [KRS 224.70-110]
T-11	To avoid secondary adverse impacts, all materials used shall be stable and inert, free from pollutants and floatable objects, and shall meet all appropriate engineering standards. (Inert here means materials that are not chemically reactive and that will not rot or decompose, such as soil, rock, broken concrete or similar materials.). [401 KAR 4:060 Section 7]
T-12	All debris and excess material shall be removed for disposal outside of the base floodplain. [401 KAR 4:060]
T-13	Upon completion of construction all disturbed areas shall be seeded and mulched or otherwise stabilized to prevent erosion. [401 KAR 4:060]
T-14	The entry of mobile equipment into the stream channel shall be limited as much as reasonably possible to minimize degradation of the waters of the Commonwealth. [401 KAR 4:060]
T-15	Construction other than as authorized by this permit shall require written approval from the Division of Water. [401 KAR 4:060]
T-16	The existing stream flow shall be maintained at all times during construction using standard flow diversion or pump around methods. Cofferdams or other structures placed in the stream shall be removed immediately if adverse flooding conditions result or if a flooding event is imminent. [401 KAR 4:060 Section 4]

FINAL CONSTRUCTION REPORT

NAME: Garrard Co Fiscal Court

PERMIT NO: 27931P

AI NO: 136987 Activity ID: APE20180001

Has all work on this project been completed according to the plans and specifications on file with the Division of Water?

Yes: _____

No: _____ If no, explain. You may include attachments if necessary.

Mailing Instructions

- Fold the top edge of this page to the top edge of this box.
- Fold the bottom edge of the page up to meet the top fold and tape shut.
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**Floodplain Management Section
Division of Water
300 Sower Boulevard
Frankfort, KY 40601**