

LEXINGTON

**Lexington-Fayette Urban County Government
Division of Engineering**

CONTRACT DOCUMENTS AND SPECIFICATIONS

Southland Drive Sidewalk Project

LFUCG Bid No. : 167-2018

Prepared by: Palmer Engineering

TABLE OF CONTENTS
CONTRACT DOCUMENTS
Southland Drive Sidewalk Project

2018

PART I	ADVERTISEMENT FOR BIDS
PART II	INFORMATION FOR BIDDERS
PART III	FORM OF PROPOSAL
PART IV	GENERAL CONDITIONS
PART V	SPECIAL CONDITIONS
PART VI	CONTRACT AGREEMENT
PART VII	PERFORMANCE AND PAYMENT BONDS
PART VIII	TECHNICAL SPECIFICATIONS
APPENDIX A	STANDARD DRAWINGS

PART 1

ADVERTISEMENT FOR BIDS

INDEX

1. INVITATION
2. DESCRIPTION OF WORK
3. OBTAINING PLANS, SPECIFICATIONS, AND BID DOCUMENTS
4. METHOD OF RECEIVING BIDS
5. METHOD OF AWARD
6. BID WITHDRAWAL
7. BID SECURITY
8. SUBMISSION OF BIDS
9. RIGHT TO REJECT
10. NOTIFICATION TO THE LFUCG FOR AFFIRMATIVE ACTION
11. NOTICE CONCERNING DBE GOAL - LFUCG
12. PRE-BID MEETING

PART 1

ADVERTISEMENT FOR BIDS

1. INVITATION

Sealed proposals for the **Southland Drive Sidewalk Project** will be received by the Lexington-Fayette Urban County Government (LFUCG) until 2:00 p.m., local time, **December 21, 2018**, for furnishing all labor and/or materials and performing all work as set forth by this advertisement, conditions (general and special), specifications, and/or the drawings prepared by and for Lexington-Fayette Urban County Government, Division of Engineering. Immediately following the scheduled closing time for reception of bids, all proposals which have been submitted in accordance with the above will be publicly opened and read aloud.

Except as otherwise indicated on the Plans, and in the Contract Documents and Specifications, all items of Work including materials, construction methods, method of measurement and basis of payment shall comply with the current edition of the *Kentucky Department of Highways (KDOH) Standard Specifications for Road and Bridge Construction, 2012 Edition* and all current revisions.

2. DESCRIPTION OF WORK

Consisting of the construction and/or furnishing of items as listed in the Bid Schedule included in Part III, Form of Proposal, of this document. The work entails the construction of 10,500 feet of sidewalk along the Southland Drive corridor from Rosemont Garden to Nicholasville Road, seeding/sod, tree plantings, storm sewers, and other incidentals to complete the work.

Bids will only be accepted from plan holders who have purchased plans from Lynn Imaging and are subsequently registered as "official plan holders." Bidders and DBE subcontractors must be prequalified with the Kentucky Transportation Cabinet and possess a Certificate of Eligibility at the time of the bid opening. All other subcontractors must be prequalified when accepting subcontracts.

3. OBTAINING PLANS, SPECIFICATIONS, AND BID DOCUMENTS

Specifications, Plans, and Bid Documents may be examined at the following places:

Lexington-Fayette Urban County Government
Division of Central Purchasing
200 East Main Street, Third Floor, Room 338
Lexington, Kentucky 40507
(859) 258-3320

Builders Exchange of Louisville, Inc.
2300 Meadow Drive
Louisville, Kentucky 40218
(502) 459-9800

LFUCG
Division of Engineering
101 East Vine Street, Suite 300
Lexington, Kentucky 40507
(859) 258-3830

Reed Construction Data
30 Technology Parkway South, Suite 100
Norcross, GA 30092
(800) 424-3996

AGC/McGraw-Hill Construction
950 Contract Street, Suite 100
Lexington, Kentucky 40505
(859) 425-6630

ISQFT
4500 Lake Forest Dr., Suite 502
Cincinnati, OH 45242

Plans, Specifications, and Contract Documents shall be obtained from the official bid document distributor, LYNN IMAGING, 328 Old Vine Street, Lexington, KY 40507, (859) 255-1021 or (www.lynnimaging.com) and click on plan room for a non-refundable price of reproduction for each full set of plans and documents.

4. **METHOD OF RECEIVING BIDS**

Bids will be received from **KYTC Prequalified Prime Contracting** firms on a **Line Item Unit Price Basis** for total Project. The Bidder must include a price for all bid items to be considered. **Bids shall be submitted in the manner and subject to the conditions as set forth and described in the Instruction to Bidders and Special Conditions.**

Mailed bids/proposals should be sent to the Director, Division of Central Purchasing, 200 East Main Street, Lexington, KY 40507.

5. **METHOD OF AWARD**

The Contract, if awarded, will be to the lowest responsive and responsible bidder for the total project whose qualifications indicate the award will be in the best interest of the OWNER and whose bid/proposal complies with all the prescribed requirements. No Notice of Award will be given until the OWNER has concluded such investigation as deemed necessary to establish the responsibility, qualifications and financial ability of Bidders to do the work in accordance with the Contract Documents to the satisfaction of the OWNER within the time prescribed. The OWNER reserves the right to reject the Bid of any Bidder who does not pass such investigation to the OWNER's satisfaction. In analyzing Bids, the OWNER may take into consideration alternate and unit prices, if requested by the Bid forms.

6. **BID WITHDRAWAL**

No bidder may withdraw his bid for a period of sixty (60) calendar days after the closing date for receipt of bids. Errors and omissions will not be cause for withdrawal of bid without forfeit of bid bond. Bids may be withdrawn in person prior to the closing date of receipt of bids.

7. BID SECURITY

If the bid is \$50,000 or greater, bid shall be accompanied by a certified check or bid bond payable to the Lexington-Fayette Urban County Government in an amount not less than Five Percent (5%) of the base bid. Bid bond shall be executed by a Surety Company authorized to do business in the Commonwealth of Kentucky and countersigned by a licensed Kentucky Resident Agent, representing the Surety Company. Bid Bonds are not required for bids under \$50,000. A cashier's check or irrevocable letter of credit is an acceptable form of bid security.

8. SUBMISSION OF BIDS

CONTRACTORS shall submit their bids to the Lexington-Fayette Urban County Government, Division of Central Purchasing, Third Floor, 200 East Main Street, Lexington, Kentucky 40507. Bids shall be submitted in a sealed envelope not later than 2:00 p.m. local time, **December 21, 2018**. Sealed proposals shall be clearly marked on the outside of the container as follows: Company Name and Address, Bid Invitation Number **167-2018**, and **Southland Drive Sidewalk Project** to be opened at 2:00 p.m. local time **December 21, 2018**. Bids are to remain sealed until official Bid closure time. Bids received after the scheduled closing time for receipt of bids will not be considered and will be returned unopened.

9. RIGHT TO REJECT

The Lexington-Fayette Urban County Government reserves the right to reject any and all bids and to waive all informalities and/or technicalities where the best interest of the Lexington-Fayette Urban County Government may be served.

10. NOTIFICATION TO THE LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT FOR AFFIRMATIVE ACTION PLAN AND CURRENT WORKFORCE

The successful bidder must submit the following to the Lexington-Fayette Urban County Government:

1. Affirmative Action Plan for his/her firm.
2. Current Workforce Analysis Form

Failure to submit this as required herein may result in disqualification of the Bidder from the award of the contract.

All submissions should be directed to:

Lexington-Fayette Urban County Government
Division of Purchasing
200 East Main Street, 3rd Floor, Room 338
Lexington, Kentucky 40507

11. NOTICE CONCERNING DBE GOAL - LFUCG

Notice of requirement for Affirmative Action to ensure Equal Employment Opportunities and Disadvantaged Business Enterprises (DBE) contract participation.

The Lexington-Fayette Urban County Government has set a goal that not less than ten percent (10%) of the total value of this contract be subcontracted to Disadvantaged Business Enterprises. The goal for the utilization of Disadvantaged Business Enterprises as subcontractors is a recommended goal. Contractors who fail to meet such goals will be expected to provide written explanations to the Director of the Division of Central Purchasing of efforts they have made to accomplish the recommended goals, and the extent to which they are successful in accomplishing the recommended goals will be a consideration in the procurement process.

For assistance in locating Disadvantaged Business Enterprises Subcontractors contact:

Sherita Miller, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, 3rd Floor, Room 338
Lexington, Kentucky 40507
(859) 258-3323

12. PRE-BID MEETING (Non-Mandatory)

There is a pre-bid meeting scheduled for this project for 2:30 PM on December 13, 2018 at Lexington-Fayette Urban County Government, 200 East Main Street, 3rd Floor, Conference Room.

END OF SECTION

PART II
INFORMATION FOR BIDDERS

INDEX

1. RECEIPT AND OPENING OF BIDS
2. PREPARATION OF BID
3. SUBCONTRACTS
4. QUALIFICATION OF BIDDER
5. BID SECURITY
6. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT
7. TIME OF COMPLETION AND LIQUIDATED DAMAGES
8. EXAMINATION OF CONTRACT DOCUMENTS AND SITE
9. ADDENDA AND INTERPRETATIONS
10. SECURITY FOR FAITHFUL PERFORMANCE
11. POWER OF ATTORNEY
12. TAXES AND WORKMEN'S COMPENSATION
13. LAWS AND REGULATIONS
14. EROSION AND SEDIMENT CONTROL AND PERMITS
15. PREVAILING WAGE LAW AND MINIMUM HOURLY RATES
16. AFFIRMATIVE ACTION PLAN
17. CONTRACT TIME
18. SUBSTITUTION OR "OR-EQUAL" ITEMS
19. ALTERNATE BIDS
20. SIGNING OF AGREEMENT
21. ASSISTANCE TO BE OFFERED TO DBE CONTRACTORS
22. DBE PARTICIPATION GOALS
23. REQUIRED SUBMITTALS

PART II

INFORMATION FOR BIDDERS

1. RECEIPT AND OPENING OF BIDS

The Lexington-Fayette Urban County Government (herein called the OWNER) invites bids from firms on the project described in the Advertisement for Bids. The OWNER will receive bids at the Division of Purchasing, at the time and in the manner set forth in the Advertisement for Bids, and the Bids will then be publicly opened and read aloud. The OWNER may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids. Any bid may be withdrawn prior to the 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 60 days after the actual time and date of the bid opening, but OWNER may, in its sole discretion, release any bid and return the Bid Security prior to that date.

The Lexington-Fayette Urban County Government assumes no responsibility for bids that are not addressed and delivered as indicated above. Bids that are not delivered to the Division of Central Purchasing by the stated time and date will be rejected.

2. PREPARATION OF BID

Each bid must be submitted on the prescribed Form of Proposal. The bid must be submitted with the entire proposal and include all pages. All blank spaces for the bid prices must be filled in, either in ink or typewritten, for both unit prices and extensions. Totals for each bid item must be added to show the total amount of the bid. Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, their address, the name of the project, the invitation number and time and date for which the bid is submitted. Bids must be addressed to the Director of Central Purchasing, Lexington-Fayette Urban County Government, Third Floor, 200 East Main Street, Lexington, Kentucky 40507. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified above.

3. SUBCONTRACTS

The bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this Contract must be acceptable to the OWNER. All proposed subcontractors must be identified on the Form of Proposal. Prior to the award of Contract, the OWNER or the OWNER'S representative will advise the CONTRACTOR of the acceptance and approval thereof or of any action necessary to be taken. Should any Subcontractor be rejected by the OWNER, the

CONTRACTOR shall present a new name and/or firm to the OWNER at no change in the Contract Price.

4. QUALIFICATION OF BIDDER

The OWNER may make such investigations as the OWNER deems 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 Contract and to complete the Work contemplated therein. Conditional bids will not be accepted.

In evaluating Bids, OWNER shall consider the qualifications of the BIDDERS, whether or not the Bids comply with the prescribed requirements, and alternatives and unit prices, as requested. OWNER may consider maintenance requirements, performance data, and disruption or damage to private property. It is OWNER'S intent to accept alternatives by the bid forms, in the order in which they are listed in the Bid Form but OWNER may accept or decline them in order or combination. The contract, if awarded, will be awarded to the lowest responsive and qualified, responsible BIDDER based upon OWNER'S evaluation which indicates that the award will be in the best interest of OWNER and the general public.

In the event there is any question as to the bidder's qualifications and ability to complete the work, a final determination will be made in accordance with a fair evaluation by the Urban County Government of the above listed elements.

- A. If the OWNER requires filling out a detailed financial statement, the bidder may provide its current certified financial statement(s) for the required time interval.
- B. Corporate firms are required to be registered with the Office of the Secretary of State, Commonwealth of Kentucky.
- C. Documents Required of CONTRACTOR - (1) A sworn statement signed by the President or owner of the Company regarding all current work in progress anywhere; (2) A document showing the percent of completion of each project and the total worth of each project; and (3) Documentation showing the percentage of the DBE employment levels on each project of the Bidder's current work force, and DBE participation levels for Subcontractors.
- E. Optional OWNER Requirements - The OWNER, at its discretion, may require the BIDDER/CONTRACTOR to provide: (1) A current detailed financial statement for a period including up to 3 prior years. (2) Financial security or

insurance in amounts and kinds acceptable to the OWNER to meet the financial responsibility requirements for the CONTRACTOR to indemnify the OWNER.
(3) Additional information and/or DBE work force data, as well as DBE participation data.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid.

- F. Bids will only be accepted from plan holders who have purchased plans from Lynn Imaging and are subsequently registered as "official plan holders." Bidders and DBE subcontractors must be prequalified with the Kentucky Transportation Cabinet and possess a Certificate of Eligibility at the time of the bid opening; All other subcontractors must be prequalified when accepting subcontracts.
- G. **Prequalified DBE list can be found at:**
<http://transportation.ky.gov/Civil-Rights-and-Small-Business-Development/Pages/Certified-and-Prequalified-DBEs.aspx>

5. BID SECURITY

- A. Each bid must be accompanied by a bid bond prepared on a Form of Bid Bond and attached hereto, duly executed by the bidder as principal and having as surety thereon a surety company approved by the OWNER, in the amount of 5% of the bid. Such bid bond will be returned to the unsuccessful bidder(s) only upon written request to the Director of Central Purchasing within seven (7) days of opening of bids. Bid bond shall be made payable to the Lexington-Fayette Urban County Government. Bid security is not required for projects under \$50,000.
- B. Bonds shall be placed with an agent licensed in Kentucky with surety authorized to do business within the state. When the premium is paid for such coverage, the full commission payable shall be paid to such local agent who shall not divide such commission with any person other than a duly licensed resident local agent.

6. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT

The successful bidder, upon his failure or refusal to execute and deliver the Contract and bonds required within ten (10) days after he has received notice of the acceptance of his bid, shall forfeit to the OWNER, as liquidated damages for such failure or refusal, the security deposited with his bid.

7. TIME OF COMPLETION AND LIQUIDATED DAMAGES

It is mutually agreed by and between the parties hereto that time is of the essence of this Contract, and that there will be sustained by the OWNER damages, monetary and otherwise, in the event of delay in the completion of the Work hereby contracted. The CONTRACTOR will be held responsible to the OWNER for delays in completion of the Work herein contracted beyond the date set for completion. Completion is defined in Section 108.03 of the KDOH Standard Specifications, Current Edition. Such monetary damage shall be deducted from the Contract sum in the amount of SEVEN HUNDRED FIFTY DOLLARS (\$750.00) per calendar day of such delay. If the Work contracted to be done shall not, in good faith, be commenced at the time specified, then the CONTRACTOR together with the Surety or Sureties upon the bond herein provided for, shall be liable for and shall pay to the OWNER all damages sustained by reason of such failure for breach of Contract, and the OWNER may immediately re-let the Work involved.

Bidder must agree to commence work on or before a date to be specified in a written "Notice to Proceed" from the OWNER and to fully complete the Project within the time as specified in the Contract. Bidder must agree also to pay liquidated damages, or the sum as specified in the Contract for each consecutive calendar day thereafter as hereinafter provided in the General Conditions.

8. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

- A. It is the responsibility of each Bidder before submitting a Bid, to (a) examine the Contract Documents thoroughly, (b) visit the site(s) to become familiar with local conditions that may affect cost, progress, performance or furnishing of the work, (c) consider Federal, State and Local laws and regulations that may affect cost, progress, performance or furnishing of the work, (d) study and carefully correlate Bidder's observations with the Contract Documents, and (e) notify Engineer of all conflicts, errors or discrepancies in the Contract Documents.
- B. Bidders should examine the requirements of Section 4 of the General Conditions for information pertaining to subsurface conditions, underground structures, underground facilities, and availability of lands, easements, and rights-of-way. The completeness of data, presented in the Contract Documents, pertaining to subsurface conditions, underground structures, and underground facilities for the purposes of bidding or construction is not assured. The Bidder will, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (surface and subsurface) which may affect cost, progress, performance or furnishing of the Work and which Bidder deems necessary to determine its Bid for performing

and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contract Documents. On request in advance, OWNER will provide access to the site to conduct such explorations and tests as each Bidder deems necessary for submission of a bid. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations.

- C. The submission of a Bid will constitute an incontrovertible representation by the Bidder that Bidder has complied with every requirement of this paragraph; that without exception the Bid is premised upon furnishing and performing the Work required by the Contract Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Contract Documents; and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

9. ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the Contract Documents will be made to any bidder orally. Every request for such interpretation should be in writing addressed to the Director of Central Purchasing, who in turn will have an addendum issued under signature of the Engineer for the Lexington-Fayette Urban County Government, and to be given consideration must be received at least seven (7) days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be mailed by certified mail with return receipt requested, faxed or emailed to all prospective bidders. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

10. SECURITY FOR FAITHFUL PERFORMANCE

- A. Simultaneously with his delivery of the executed Contracts, the CONTRACTOR shall furnish a surety bond or bonds as security for the faithful performance of this Contract and for payment of all persons performing labor on the Project under this Contract and furnishing materials in connection with this Contract, as specified in the General Conditions. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the OWNER and authorized to do business in the Commonwealth of Kentucky.
- B. All bonds required by this Contract and laws of this State shall be placed with agents licensed in the State of Kentucky. When the premium is paid for such coverages, the full commission shall be paid to such local agent who shall not

divide such commission with any person other than a duly licensed resident local agent.

- C. **Contractor shall use standard Performance and Payment Bond forms such as documents provided with this contract book or AIA form A312-1984 (or later).**

11. POWER OF ATTORNEY

Attorney-in-fact who signs bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

12. TAXES AND WORKMEN'S COMPENSATION

The CONTRACTOR and subcontractor will be required to accept liability for payment of all payroll taxes, sales and use tax, and all other taxes or deductions required by local, state or federal law. Each shall carry Workmen's Compensation Insurance to the full amounts as required by Statutes and shall include the cost of all foregoing items in the proposal. The CONTRACTOR will not otherwise be reimbursed or compensated for such tax payments. The CONTRACTOR is urged to ascertain at his own risk his actual tax liability in connection with the execution or performance of his Contract.

13. LAWS AND REGULATIONS

The bidder's attention is directed to the fact that all applicable state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout, and they will be deemed to be included in the contract, the same as though herein written out in full.

14. EROSION AND SEDIMENT CONTROL AND PERMITS

The CONTRACTOR and Subcontractors performing work on projects on behalf of the OWNER shall also comply with all applicable federal, state, and local environmental regulations and all requirements and conditions set forth in "special" permits including but not limited to Corp of Engineers 404 permits, 401 Water Quality Certifications, Stream Crossing and Floodplain Encroachment Permits as described in Part 4 General Conditions Paragraph 5.17.

15. PREVAILING WAGE LAW AND MINIMUM HOURLY RATES

Federal wage rates and regulations are not required.

16. AFFIRMATIVE ACTION PLAN

The successful Bidder must submit the entire proposal with their bid, the following items to the Urban County Government:

1. Certification of Bid Proposal/DBE – see Part III
2. DBE Subcontractor Bidders List – see Part III

A Work Force Analysis Form shall be submitted for each Contract. Failure to submit any of these items as required herein may result in disqualification of the Bidder from award of the Contract.

All submissions should be directed to:

Director, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, Third Floor
Lexington, KY 40507

17. CONTRACT TIME

The number of calendar days within which the Work is to be substantially completed and ready for final payment (the Contract Time) is set forth in the Form of Proposal and the Agreement.

18. SUBSTITUTE OR "APPROVED EQUAL" ITEMS

The Contract, if awarded, will be on the basis of materials and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "approved equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "approved equal" item of material or equipment may be furnished or used by the CONTRACTOR if acceptable to the ENGINEER and OWNER, application for such acceptance will not be considered by the ENGINEER and OWNER until after the effective date of the Agreement. The procedure for submission of any such application by the CONTRACTOR and consideration by the ENGINEER and OWNER is set forth in the General Conditions.

19. ALTERNATE BIDS

Bidders shall submit alternate bids/proposals only if and when such alternate bids/proposals have been specifically requested in an Invitation for Bids. If alternate bids/proposals are requested in an Invitation for Bids, the form of submission

of such alternate bid and the conditions under which such alternate bids will be considered for award of a contract will be established in the Invitation.

Any Bidder who submits a bid incorporating an alternate proposal when alternate bids/proposals have not been requested in the Invitation for Bids shall have his/her bid rejected as non-responsive.

Any Bidder who submits a bid incorporating two (2) or more prices for an item or groups of items (unless such method of pricing is requested in the Invitation for Bids), or which imposes conditions for acceptance other than those established in the Invitation for Bids, shall have their bid rejected as non-responsive.

20. SIGNING OF AGREEMENT

When OWNER gives a Notice of Award to the successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within ten days thereafter, CONTRACTOR shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER with the required Bonds, Certificate of Insurance, and Power of Attorney. The OWNER will deliver one fully signed counterpart to CONTRACTOR at such time as it has been signed by the Mayor.

21. ASSISTANCE TO BE OFFERED TO DISADVANTAGED BUSINESS ENTERPRISE (DBE) CONTRACTORS

I. Outreach

The Lexington-Fayette Urban County Government (LFUCG) maintains a data base of DBE companies. When a LFUCG construction project is advertised for bidding, notices are sent to the appropriate commodity code via email through the LFUCG Economic Engine Marketplace. The bid notices describe the project, indicate the deadline for submitting bids, and review the bonding assistance which is available. If you wish to be added to the LFUCG Economic Engine database please register your company at <https://lfucg.economicengine.com>. If you wish to be added to the LFUCG DBE contractor mailing list, please contact:

Sherita Miller
Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507

II. Eligibility for Bid Bond Assistance

In order to be eligible for any bid bonding assistance, a DBE construction company must be owned or controlled at the level of 51% or more, by a member or members of a minority group or females. Prior to receiving assistance, a statement providing evidence of ownership and control of the company by a member or members of a minority group or females must be signed by the OWNER or corporate officer and by an attorney or accountant and submitted to:

Sherita Miller
Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507

III. Subcontractors

The LFUCG will, upon request, assist prime contractors in the procurement of eligible DBE subcontractors in an effort to achieve the ten percent (10%) **minimum DBE goal.**

For a list of eligible DBE subcontractors please contact:

Sherita Miller
Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507

IV. Questions

If you have questions or wish to have additional information, please contact:

Buyer for Project
Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, 3rd Floor
Lexington, Kentucky 40507
(859) 258-3320

22. DBE PARTICIPATION GOALS

A. GENERAL

- 1) The LFUCG request all potential contractors to make a concerted effort to include Disadvantaged Business Enterprises (DBE) as subcontractors or suppliers in their bids.
- 2) Toward that end, the LFUCG has established 10% of total procurement costs as a Goal for participation of Disadvantaged Businesses Enterprise (DBE) on this contract.
- 3) DBE Subcontractors must be prequalified and certified with the Kentucky Transportation Cabinet at the time of bid if utilized as a DBE meeting the DBE Goal.
- 4) **It is therefore a request of each Bidder to include in its bid, the same goal ten percent (10%) for DBE participation and other requirements as outlined in this section.**

B. PROCEDURES

- 1) The successful bidder will be required to report to the LFUCG, the dollar amounts of all purchase orders submitted to DBE subcontractors and suppliers for work done or materials purchased for this contract. (See Subcontractor Monthly Payment Report)
- 2) Replacement of a DBE subcontractor or supplier listed in the original submittal must be requested in writing and must be accompanied by documentation of Good Faith Efforts to replace the subcontractor / supplier with another DBE Firm; this is subject to approval by the LFUCG.
- 3) For assistance in identifying qualified, certified businesses to solicit for potential contracting opportunities, bidders may contact:
 - a) The Lexington-Fayette Urban County Government, Division of Central Purchasing (859-258-3320)
- 4) The LFUCG will make every effort to notify interested DBE subcontractors and suppliers of each Bid Package, including information on the scope of work, the pre-bid meeting time and location, the bid date, and all other pertinent information regarding the project.

C. DEFINITIONS

- 1) A Disadvantaged Business Enterprise (DBE) is defined as a business which is certified as being at least 51% owned and operated by persons of African

American, Hispanic, Asian, Pacific Islander, American Indian or Alaskan Native Heritage or by one or more Females.

D. OBLIGATION OF BIDDER

- 1) **The bidder shall make a Good Faith Effort to achieve the Participation Goal for DBE subcontractors/suppliers. The failure to meet the goal shall not necessarily be cause for disqualification of the bidder; however, bidders not meeting the goal are required to furnish with their bids written documentation of their Good Faith Efforts to do so.**
- 2) **Award of Contract shall be conditioned upon satisfaction of the requirements set forth herein.**
- 3) **Failure to submit this information as requested will be cause for rejection of bid.**

23. REQUIRED SUBMITTALS

The entire proposal must be completed and submitted or your bid will be considered non-responsive and rejected.

PART III

FORM OF PROPOSAL

INDEX

1. FORM OF PROPOSAL
2. LEGAL STATUS OF BIDDER
3. BIDDERS AFFIDAVIT
4. BID SCHEDULE – SCHEDULE OF VALUES
5. STATEMENT OF BIDDER'S QUALIFICATIONS
6. LIST OF PROPOSED SUBCONTRACTORS
7. LIST OF MATERIALS /SUPPLIERS
8. DBE SUB-CONTRACTOR BIDDERS LIST
9. CERTIFICATION FOR FEDERAL-AID CONTRACTS
10. CERTIFICATION OF PERFORMANCE
11. CERTIFICATION OF ORGANIZATION(S)
12. CERTIFICATION OF BID PROPOSAL / DBE
13. NON-COLLUSION CERTIFICATION
14. STATEMENT OF EXPERIENCE
15. EQUAL OPPORTUNITY AGREEMENT
16. EQUAL EMPLOYMENT OPPORTUNITY AFFIRMATIVE ACTION POLICY
17. WORKFORCE ANALYSIS FORM
18. EVIDENCE OF INSURABILITY

PART III

Invitation to Bid No. XX-2018

Southland Drive Sidewalk Project

1. FORM OF PROPOSAL

Place: Lexington, Kentucky

Date: January 10, 2019

The following Form of Proposal shall be followed exactly in submitting a proposal for this Work.

This Proposal Submitted by Bluegrass Contracting Corporation

1075 Red Mile Road, Lexington, KY 40504
(Name and Address of Bidding Contractor)

(Hereinafter called "Bidder"), organized and existing under the laws of the State of Kentucky, doing business as a Corporation
"a corporation," "a partnership", or an "individual" as applicable.

To: Lexington-Fayette Urban County Government
(Hereinafter called "OWNER")
Office of the Director of Purchasing
200 East Main Street, 3rd Floor
Lexington, KY 40507

Gentlemen:

The Bidder, in compliance with your Invitation for Bids for the **Southland Drive Sidewalk Project** having examined the Plans and Specifications with related documents, having examined the site for proposed Work, and being familiar with all of the conditions surrounding the construction of the proposed Project, including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the Project in accordance with the Contract Documents, within the time set forth therein, and at the lump sum and/or unit prices stated hereinafter. These prices are to cover all expenses incurred in performing the Work required under the Contract Documents, of which this proposal is a part.

BIDDER hereby agrees to commence work under this contract as to be specified in the Notice to Proceed and to fully complete the project within one-hundred fifty (150)

consecutive calendar days thereafter. BIDDER further agrees to pay liquidated damages, the sum of \$750.00 for each consecutive calendar day thereafter.

The Bidder hereby acknowledges receipt of the following addenda:

Addendum No. 1 Date 12-07-18

Addendum No. 2 Date 12-17-18

Addendum No. 3 Date 12-21-18

Addendum No. 4 Date 01-02-19

Addendum No. 5 Date 01-03-19

Addendum No. Date

Addendum No. Date

Addendum No. Date

Insert above the number and the date of any Addendum issued and received. If none has been issued and received, the word "NONE" should be inserted.

2. LEGAL STATUS OF BIDDER

Bidder Bluegrass Contracting Corporation

Date January 10, 2019

* 1. A corporation duly organized and doing business under the laws of the State of Kentucky, for whom Mark W. Johnson, bearing the official title of President, whose signature is affixed to this Bid/Proposal, is duly authorized to execute contracts.

~~* 2. A Partnership, all of the members of which, with addresses are: (Designate general partners as such)~~

~~_____

_____~~

~~* 3. An individual, whose signature is affixed to this Bid/Proposal (please print name)~~

~~_____
_____~~

***(The Bidder shall fill out the appropriate form and strike out the other two.)**

3. BIDDERS AFFIDAVIT

REQUIRED AFFIDAVIT FOR BIDDERS, OFFERORS AND CONTRACTORS FOR BIDS AND CONTRACTS IN GENERAL:

I. Each bidder or offeror swears and affirms under penalty of perjury, that:

a. In accordance with KRS 45A.110 and KRS 45A.115, neither the bidder or offeror as defined in KRS 45A.070(6), nor the entity which he/she represents, has knowingly violated any provisions of the campaign finance laws of the Commonwealth of Kentucky; and the award of a contract to the bidder or offeror or the entity which he/she represents will not violate any provisions of the campaign finance laws of the Commonwealth.

b. The bidder or offeror swears and affirms under penalty of perjury that, to the extent required by Kentucky law, the entity bidding, and all subcontractors therein, are aware of the requirements and penalties outlined in KRS 45A.485; have properly disclosed all information required by this statute; and will continue to comply with such requirements for the duration of any contract awarded.

c. The bidder or offeror swears and affirms under penalty of perjury that, to the extent required by Kentucky law, the entity bidding, and its affiliates, are duly registered with the Kentucky Department of Revenue to collect and remit the sales and use tax imposed by KRS Chapter 139, and will remain registered for the duration of any contract awarded.

d. The bidder or offeror swears and affirms under penalty of perjury that the entity bidding is not delinquent on any state taxes or fees owed to the Commonwealth of Kentucky and will remain in good standing for the duration of any contract awarded.

FOR "NON-BID" CONTRACTS (I.E. SOLE-SOURCE; NOT-PRACTICAL OR FEASIBLE TO BID; OR EMERGENCY CONTRACTS, ETC):

II. Each contractor further swears and affirms under penalty of perjury, that:

a. In accordance with KRS 121.056, and if this is a non-bid contract, neither the contractor, nor any member of his/her immediate family having an interest of 10% or more in any business entity involved in the performance of any contract awarded, have contributed more than the amount specified in KRS 121.150 to the campaign of the gubernatorial slate elected in the election last preceding the date of contract award.

b. In accordance with KRS 121.330(1) and (2), and if this is a non-bid contract, neither the contractor, nor officers or employees of the contractor or any entity affiliated with the contractor, nor the spouses of officers or employees of the

contractor or any entity affiliated with the contractor, have knowingly contributed more than \$5,000 in aggregate to the campaign of a candidate elected in the election last preceding the date of contract award that has jurisdiction over this contract award.

c. In accordance with KRS 121.330(3) and (4), and if this is a non-bid contract, to the best of his/her knowledge, neither the contractor, nor any member of his/her immediate family, his/her employer, or his/her employees, or any entity affiliated with any of these entities or individuals, have directly solicited contributions in excess of \$30,000 in the aggregate for the campaign of a candidate elected in the election last preceding the date of contract award that has jurisdiction over this contract.

As a duly authorized representative for the bidder, offeror, or contractor, I have fully informed myself regarding the accuracy of all statements made in this affidavit, and acknowledge that the Commonwealth is reasonably relying upon these statements, in making a decision for contract award and any failure to accurately disclose such information may result in contract termination, repayment of funds and other available remedies under law.

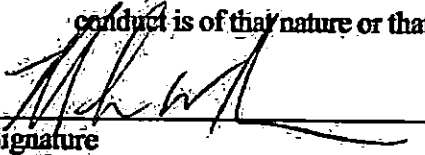
BIDDERS AFFIDAVIT (LFUCG)

Comes the Affiant Mark W. Johnson, and after being first duly sworn, states under penalty of perjury as follows:

1. His/her name is Mark W. Johnson
and he/she is the individual submitting the bid or is the authorized representative of Bluegrass Contracting Corporation, the entity submitting the bid (hereinafter referred to as "Bidder").
2. Bidder will pay all taxes and fees, which are owed to the Lexington-Fayette Urban County Government at the time the bid is submitted, prior to award of the contract and will maintain a "current" status in regard to those taxes and fees during the life of the contract.
3. Bidder will obtain a Lexington-Fayette Urban County Government business license, if applicable, prior to award of the contract.
4. Bidder has authorized the Division of Central Purchasing to verify the above-mentioned information with the Division of Revenue and to disclose to the Urban County Council that taxes and/or fees are delinquent or that a business license has not been obtained.

5. Bidder has not knowingly violated any provision of Chapter 25 of the Lexington-Fayette Urban County Government Code of Ordinances, known as the "Ethics Act."

6. Bidder acknowledges that "knowingly" for purposes of this Affidavit means, with respect to conduct or to circumstances described by a statute or ordinance defining an offense, that a person is aware or should have been aware that his conduct is of that nature or that the circumstance exists.


Signature

Mark W. Johnson
Printed Name

President
Title

01-10-19
Date

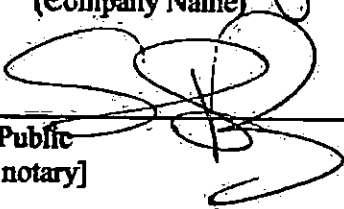
Company Name Bluegrass Contracting Corporation

Address 1075 Red Mile Road, Lexington, KY 40504

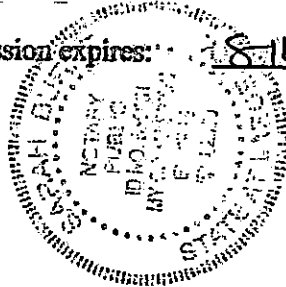
Subscribed and sworn to before me by Mark W. Johnson
(Affiant)

President
(Title)

of Bluegrass Contracting Corp. this 10th day of January, 20 19.
(Company Name)


Notary Public
[seal of notary]

My commission expires: 8-14-2020



4. BID SCHEDULE – SCHEDULE OF VALUES

The Bidder agrees to perform all the Work described in the Specifications and shown on the Plans for the following proposed lump sum and/or unit prices, if applicable, which shall include the furnishing of all labor, materials, supplies, equipment and/or vehicle usage, services, all items of cost, overhead, taxes (federal, state, local), and profit for the Contractor and any Subcontractor involved, within the time set forth herein. If unit prices are applicable, Bidder must make the extensions and additions showing the total amount of bid.

If a discrepancy between the unit price and the item total exists, the unit price prevails except:

If the unit price is illegible, omitted, or the same as the item total, item total prevails and the unit price is the quotient of the item total and the quantity.

If the unit price and the item total are illegible or are omitted, the bid may be determined nonresponsive. If a lump sum total price is illegible or is omitted, the bid may be determined nonresponsive.

For a unit price based bid, the sum of the item totals is the bid amount the Division uses for bid comparison.

The LFUCG's decision on the bid amount is final.

The contract, if awarded, will be on the basis of materials and equipment specified in the specifications without consideration of possible substitute or "or equal" items.

The estimated quantities of items of unit price work are not guaranteed and are solely for the purpose of comparison of bids and determining an initial Contract price. Determination of the actual quantities and classification of unit price work performed by the Contractor will be made by the Engineer in accordance with the General Conditions.

Payment:

Accepted quantities for Work shall be paid for at their respective Contract "Unit Price" as quoted (which shall be for all Work required under this Section) and paid per "Unit To Bid On" of specified "Description" satisfactorily placed. All labor, materials, equipment, and excavation shall be incidental to the Work.

Digital Bid Submittals:

Bidders will also be required to submit a digital version of the Unit Prices and Total Amount Bid. The excel spreadsheet is available through the LFUCG's Economic Engine website (<https://lfucg.economicengine.com>). If there is a discrepancy between the digital and written versions, then the written version shall prevail.

Southland Drive Sidewalk Project					
Bid Schedule: Bid					
County:	Fayette				
Project No.	P 655				
Road Name	Southland Drive				
From To	Rosemont Garden to Nicholasville Road				
Net Length	5935 feet				
Item #	Unit	Item Description	Quantity	Unit Price	Total Price
1	LS	MAINTAIN & CONTROL TRAFFIC	1	\$ 65,000.00	\$ 65,000.00
2	LS	Clearing and Grubbing	1	\$ 92,000.00	\$ 92,000.00
3	LS	Erosion and Sediment Control	1	\$ 31,000.00	\$ 31,000.00
4	TN	DGA Base	1,889	\$ 32.00	\$ 60,448.00
5	TN	CL2 ASPH BASE 0.75D PG64-22	297	\$ 133.25	\$ 39,575.25
6	TN	CL2 ASPH SURF 0.38D PG64-22	261	\$ 141.25	\$ 36,866.25
7	LF	STORM SEWER PIPE-12 IN	13	\$ 62.75	\$ 815.75
8	LF	STORM SEWER PIPE-15 IN	1,084	\$ 71.25	\$ 77,235.00
9	LF	STORM SEWER PIPE-18 IN	1,420	\$ 80.00	\$ 113,600.00
10	LF	STORM SEWER PIPE-24 IN	80	\$ 94.50	\$ 7,560.00
11	LF	STORM SEWER PIPE-36 IN	27	\$ 138.00	\$ 3,726.00
12	EA	PIPE CULVERT HEADWALL-24 IN	2	\$ 1,808.00	\$ 3,616.00
13	EA	SLOPED BOX OUTLET TYPE 1-12 IN	1	\$ 2,302.00	\$ 2,302.00
14	EA	SLOPED BOX OUTLET TYPE 1-18 IN	2	\$ 2,302.00	\$ 4,604.00
15	EA	CURB BOX INLET TYPE A	4	\$ 3,352.00	\$ 13,408.00
16	EA	CURB BOX INLET TYPE B	2	\$ 3,317.00	\$ 6,634.00
17	EA	CURB BOX INLET TYPE F	16	\$ 2,270.00	\$ 36,320.00
18	EA	DROP BOX INLET TYPE 11	10	\$ 2,073.00	\$ 20,730.00
19	EA	DROP BOX INLET TYPE 14	1	\$ 2,049.00	\$ 2,049.00
20	EA	JUNCTION BOX-24 IN	1	\$ 1,898.00	\$ 1,898.00
21	EA	FRAME AND LID TY 1	7	\$ 475.00	\$ 3,325.00
22	LF	BARRIER CURB AND GUTTER	1,437	\$ 26.25	\$ 37,721.25
23	LF	STANDARD HEADER CURB	3,919	\$ 27.50	\$ 107,772.50
24	CY	Earthwork	2,625	\$ 26.25	\$ 68,906.25
25	LS	MOBILIZATION	1	\$ 102,700.00	\$ 102,700.00
26	LS	DEMOBILIZATION	1	\$ 30,806.00	\$ 30,806.00
27	EA	PORTABLE CHANGEABLE MESSAGE SIGN	2	\$ 4,635.00	\$ 9,270.00
28	LF	SILT FENCE	2,750	\$ 2.50	\$ 6,875.00
29	EA	SILT TRAP TYPE A	12	\$ 164.75	\$ 1,977.00
30	EA	SILT TRAP TYPE B	12	\$ 298.00	\$ 3,576.00
31	EA	SILT TRAP TYPE C	12	\$ 120.00	\$ 1,440.00
32	SY	SIDEWALK-4.5 IN CONCRETE	5,460	\$ 52.25	\$ 285,285.00
33	LS	Construction Staking	1	\$ 37,800.00	\$ 37,800.00
34	LS	REMOVE STRUCTURE	2	\$ 7,200.00	\$ 14,400.00
35	SY	EROSION CONTROL BLANKET	5,000	\$ 1.50	\$ 7,500.00
36	SY	SEEDING AND PROTECTION	21,589	\$ 1.00	\$ 21,589.00
37	SY	SODDING	10,000	\$ 5.00	\$ 50,000.00

Item #	Unit	Item Description	Quantity	Unit Price	Total Price
38	LF	PAVE STRIPING-PERM PAINT-4 IN	1,200	\$ 0.85	\$ 1,020.00
39	LF	PAVE MARKING-THERMO X-WALK-12 IN	4,060	\$ 5.00	\$ 20,300.00
40	LF	PAVE MARKING-THERMO STOP BAR-24IN	486	\$ 7.00	\$ 3,402.00
41	EA	PAVE MARKING-Bike Symbol	4	\$ 300.00	\$ 1,200.00
42	SF	DETECTABLE WARNINGS	1,212	\$ 22.75	\$ 27,573.00
43	EA	DRAINAGE JUNCTION BOX TY B	8	\$ 2,203.00	\$ 17,624.00
44	SF	STONE WALLS	8,400	\$ 40.75	\$ 342,300.00
45	EA	TREES-SHADE & EVERGREEN	65	\$ 385.00	\$ 25,025.00
46	EA	TREES-ORNAMENTAL	62	\$ 384.00	\$ 23,808.00
47	EA	SHRUBS	344	\$ 49.00	\$ 16,856.00
48	EA	PERENNIALS	2,750	\$ 19.75	\$ 54,312.50
49	SF	BIKE BOX - COLOR DEMARCATION	1,400	\$ 10.75	\$ 15,050.00
50	TN	MILLING AND TEXTURING	13	\$ 225.50	\$ 2,931.50
51	EA	REMOVE AND RESET SIGNS	4	\$ 3,000.00	\$ 12,000.00
52	LS	Payment and Performance Bond	1	\$ 21,873.00	\$ 21,873.00
53	SF	RIVER COBBLE/FLAT ROCK LINING	3,600	\$ 21.00	\$ 75,600.00
54	EA	WHEEL STOPS	170	\$ 121.00	\$ 20,570.00
55	LS	PRECAST-BOX CULVERT - 20' x 5'	1	\$ 73,100.00	\$ 73,100.00
56	LS	PRECAST-JUNCTION BOX 14' x 8' x 5'	1	\$ 16,000.00	\$ 16,000.00
57	CY	Rock Excavation (mechanical)	100	\$ 208.00	\$ 20,800.00
58	SY	Concrete Entrance	15	\$ 68.75	\$ 1,031.25
59	LF	Guide Rail	56	132.75	\$ 7,434.00
TOTAL					\$ 2,210,140.50

TOTAL OF BASE BID PRICES FOR Southland Drive Sidewalk—(Items 1 through 59)
in words and figures. In case of discrepancy, the amount shown in words will govern.

Two Million Two-Hundred Ten Thousand One Hundred Forty Dollars and Fifty Cents

(\$ 2,210,140.50).

Submitted by:

Bluegrass Contracting Corporation

Firm

1075 Red Mile Road

Address

Lexington, KY 40504

City, State & Zip

*Bid must be signed:
(original signature)*


Signature of Authorized Company Representative – Title

Mark W. Johnson

Representative's Name (Typed or Printed)

(859) 231-0069

(859) 281-6457

Area Code – Phone – Fax #

markj@bluegrasscontracting.com

E-Mail Address

OFFICIAL ADDRESS:

1075 Red Mile Road

P.O. Box 11638

Lexington, KY 40504



(Seal if Bid is by Corporation)

By signing this form you agree to ALL terms, conditions, and associated forms in this bid package

5. STATEMENT OF BIDDER'S QUALIFICATIONS

The following statement of the Bidder's qualifications is required to be filled in, executed, and submitted with the Proposal:

- 1. Name of Bidder: Bluegrass Contracting Corporation
- 2. Permanent Place of Business: 1075 Red Mile Road, Lexington, KY 40504
- 3. When Organized: April 3, 1969
- 4. Where Incorporated: Kentucky
- 5. Construction Plant and Equipment Available for this Project:
See attached Resume.

(Attach Separate Sheet If Necessary)

- 6. Financial Condition:
If specifically requested by the OWNER, the apparent low Bidder is required to submit its latest three (3) years audited financial statements to the OWNER'S Division of Central Purchasing within seven (7) calendar days following the bid opening.
- 7. In the event the Contract is awarded to the undersigned, surety bonds will be furnished by:
North American Specialty Insurance Company (Surety)
Signed: Monica A. Kaiser (Representative of Surety)
Monica A. Kaiser, Attorney-in-Fact

8. The following is a list of similar projects performed by the Bidder. (Attach separate sheet if necessary).

<u>NAME</u>	<u>LOCATION</u>	<u>CONTRACT SUM</u>
See Attached Corporate Resume		

9. The Bidder has now under contract and bonded the following projects:

<u>NAME</u>	<u>LOCATION</u>	<u>CONTRACT SUM</u>
Center Hill Dam Site Restoration	Lancaster, TN	\$ 5,644,039.00
UK Parking Lots Expansion	Lexington, KY	\$ 848,089.33
General Butler Emergency Spillway	Carrollton, KY	\$ 418,740.00

10. List Key Bidder Personnel who will work on this Project.

<u>NAME</u>	<u>POSITION DESCRIPTION</u>	<u>NO. OF YEARS WITH BIDDER</u>
See Attached Corporate Resume		

11. DBE Participation on current bonded projects under contract:

<u>SUBCONTRACTORS (LIST)</u>	<u>PROJECT (SPECIFIC TYPE)</u>	<u>DBE</u>	<u>% of WORK</u>
<u>Cedar Valley Seeding Inc.</u>	<u>Highway</u>	<u>Yes</u>	<u>9.5 %</u>
<u>Cedar Valley Seeding Inc</u>	<u>Highway</u>	<u>Yes</u>	<u>14.7%</u>
<u>Pro-Mark Inc.</u>	<u>Highway</u>	<u>Yes</u>	<u>3%</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>

(USE ADDITIONAL SHEETS IF NECESSARY)

12. We acknowledge that, if we are the apparent low Bidder, we will submit to the OWNER within 7 calendar days following the Bid Opening, a sworn statement on the OWNER'S form regarding all current work on hand and under contract, and a statement on the OWNER'S form of the experience of our officers, office management and field management personnel. Additionally, if requested by the OWNER, we will within 7 days following the request submit audited financial statements and loss history for insurance claims for the 3 most recent years (or a lesser period stipulated by the OWNER)—all in accordance with the Bid Documents.

Respectfully submitted:

Bluegrass Contracting Corporation
(Name of Contracting Firm)

BY: 
Mark W. Johnson, President

TITLE: President

DATE January 10, 2018

6. LIST OF PROPOSED SUBCONTRACTORS

The following list of proposed subcontractors is required by the OWNER to be executed, completed and submitted with the BIDDER'S FORM OF PROPOSAL. All subcontractors are subject to approval of the Lexington-Fayette Urban County Government. Failure to submit this list completely filled out may be cause for rejection of bid.

<u>BRANCH OF WORK-LIST EACH MAJOR ITEM</u> Such as: Concrete, bituminous paving, concrete, pavement markings, construction staking, etc.	<u>SUBCONTRACTOR</u>	<u>DBE Yes/No</u>	<u>% of Work</u>
1. <u>Pavement Markings</u>	Name: <u>Central Seal Company</u> P.O. Box 490 Address: <u>Danville, KY 40423</u>	<u>N</u>	<u>1.65</u>
2. <u>Stone Wall</u>	Name: <u>Redi-Rock KIT</u> 850 Landis Lane Address: <u>Mt Washington, KY 40047</u>	<u>N</u>	<u>4.2</u>
3. <u>Misc. Concrete</u>	Name: <u>Stewart Contracting Corp</u> PO Box 402 Address: <u>Richmond, KY 40476</u>	<u>N</u>	<u>17.8</u>
4. <u>Sawing/Demolition</u>	Name: <u>Concrete Coring Co.</u> 835 Porter Place Address: <u>Lexington, KY 40508</u>	<u>N</u>	<u>0.53</u>
5. <u>Landscaping</u>	Name: <u>Klausing Group Inc.</u> 1356 Cahill Drive Address: <u>Lexington, KY 40504</u>	<u>N</u>	<u>10.4</u>
6. _____	Name: _____ Address: _____	_____	_____
7. _____	Name: _____ Address: _____	_____	_____

(Attach additional sheet(s) if necessary.)

7. LIST OF MATERIALS/SUPPLIERS

Bidders are hereby advised that this list must be complete and submitted with the Bid.

Listing "as per plans and specifications", will not be considered as sufficient identification. Where more than one "Make or Brand" is listed for any one item, the Owner has the right to select the one to be used.

Item	Brand Name, Manufacturer and/or Supplier
1. Concrete Supplier	<u>Triple Crown Concrete</u>

END LIST OF MATERIALS AND EQUIPMENT

8. DBE SUB-CONTRACTOR BIDDERS LIST

The Department of Transportation Federal Regulations requires that the Kentucky Transportation Cabinet provide a bidders list to be maintained in the Office of Personnel Management, Small Business Development Branch (49CFR 26:11) for each federally funded project awarded.

Project No.

List all quotes/bids received on this project.

DBE (Disadvantaged Business Enterprise) Contractors, Consultants, and Suppliers submitting quotes/bids for this project:

1. Cedar Valley Seeding
2. Pro-Mark Inc.
3. Landscaper's Corner, Inc.
4. Somethin' Bloomin'
- 5.
- 6.
- 7.
- 8.

DBE (Disadvantaged Business Enterprise) Contractors, Consultants, and Suppliers contacted who did NOT submit quotes/bids for this project.

1. GECO Enterprises
2. S&D Construction Management
3. TEM Group Inc.
- 4.
- 5.
- 6.
- 7.
- 8.

Non-DBE (Disadvantaged Business Enterprise) Contractors, Consultants, and Suppliers submitting quotes/bids for this project:

1. Redi-Rock KIT
2. Klausung Group Inc.
3. Stewart Contracting Corp
4. Concrete Coring Co. of Central KY
5. Central Seal Company
6. Fortiline Inc.
7. Oldcastle Inc.

If you need additional space, please attach a separate page. If you need assistance regarding this form, please contact Melvin Bynes or Anita Hall at (502)564-3601.

9. CERTIFICATION FOR FEDERAL-AID CONTRACT

The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agent.
2. If any funds other than the Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

This certification is a material representation of fact which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The prospective participation also agrees by submitting his or her bid proposal that he or she shall require the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such subrecipients shall certify and disclose accordingly.

Bluegrass Contracting Corporation
(Name of Individual, Co-Partnership, or Corporation submitting bid)

Mark W. Johnson
(Printed Name of officer signing certification)

President
(Title)


(Signature)

January 10, 2018

(Date)

10. CERTIFICATION OF PERFORMANCE

Certification with regard to the Performance of Previous Contracts or Subcontracts subject to the Equal Opportunity Clause and the filing of Required Reports.

The _____ bidder _____, hereby certifies that he/she _____ has _____, participated in previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, and that he, filed with the Joint Reporting committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the Former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Bluegrass Contracting Corporation


(Name of Individual, Co-Partnership, or Corporation submitting bid)

Mark W. Johnson

(Name of Officer or Authorized Agent)

President

(Title)



(Signature)

January 10, 2018

(Date)

NOTE:The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7 (b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with the contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EE0-1) is the only report required by the Executive Orders of their implementing regulation.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed reports should note that 41 CFR 60-1.7 (b) (1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

11. CERTIFICATION OF ORGANIZATION(S)

COMMONWEALTH OF KENTUCKY

COUNTY: FAYETTE

FED PROJECT NO:

I, Mark W. Johnson, President
(Name of officer or Authorized Agent) (Title)

under penalty of perjury under the laws of the United States, do hereby certify that, except as noted below,

Bluegrass Contracting Corporation
(Name of Individual, Co-Partnership, or Corporation submitting bid)

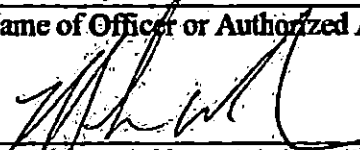
any person associated therewith in the capacity of (owner, partner, director, officer, principal investigator, project director, manager, auditor, or any position involving the Administration of Federal Funds): is not currently under suspension, debarment, voluntarily exclusion, or determination of ineligibility by any federal agency; has not been suspended, debarred, voluntarily excluded or determined ineligible by any federal agency within the past 3 years; does not have a proposed debarment pending; and has not been indicted, convicted, or had a civil judgment rendered against (it) by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

Please list below any exceptions to the foregoing, to whom it applies, initiating agency and dates of action.

Exceptions:

Bluegrass Contracting Corporation
(Name of Individual, Co-Partnership, or Corporation submitting bid)

Mark W. Johnson President
(Name of Officer or Authorized Agent) (Title)


(Signature) January 10, 2018
(Date)

12. CERTIFICATION OF BID PROPOSAL/DBE

We (I) proposed to furnish all labor, equipment and material necessary to construct and/or improve the subject project in accordance with the plans, the Transportation Cabinet's Standard Specifications for Road and Bridge Construction, current edition, special provisions, notes applicable to the project as indicated herein and all addenda issued on this project subsequent to purchase of proposal.

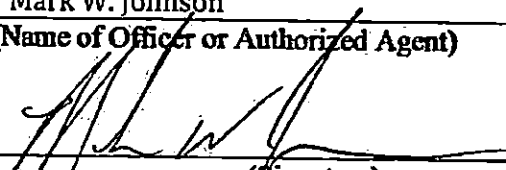
We (I) attach a bid guaranty as provided in the special provisions in an amount not less than 5% of the total bid. We agree to execute a contract in accordance with this proposal within 15 calendar days after the receipt of the notice of award for the project.

We (I) have examined the site of proposed work, project plans, specifications, special provisions, and notes applicable to the project referred to herein. We understand that the quantities shown herein are estimated quantities subject increase or decrease as provided in the specifications.

We (I) acknowledge receipt of all addendum(s) (if applicable) and have made necessary revisions to the bid proposal. We have considered all addendum(s) in calculation of the submitted bid and applied the updated bid items, which are included.

"The bidder certifies that it has secured participation by Disadvantaged Business Enterprises (DBE) in amount of 10.58 percent (10.58%) of the total value of this contract and that the DBE participation is in compliance with the requirements of 49 CFR 26 and the policies of the Kentucky Transportation Cabinet pertaining to the DBE Program."

Bluegrass Contracting Corporation
(Name of Individual, Co-Partnership, or Corporation submitting bid)

<u>Mark W. Johnson</u>	<u>President</u>
(Name of Officer or Authorized Agent)	(Title)
 <u>(Signature)</u>	<u>January 10, 2018</u> (Date)

When two or more organizations bid as a joint venture, enter names of each organization and an authorized agent for each organization must sign above.

**KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
DIVISION OF CONSTRUCTION PROCUREMENT
DBE Plan/SUBCONTRACT REQUEST**

TC 14-35
Rev. 07/07/16

CONTRACT ID (CONTID) _____
Subcontract # : 1
TO : Rachel Mills, Director

Division of Construction Procurement

FROM : Bluegrass Contracting Corporation 1st Tier Subcontractor: _____
Prime Contractor (if applicable)

SUBJECT : Fayette 167-2018
County Project Number

I hereby request to utilize for DBE participation a portion of the subject project to:
Cedar Valley Seeding Inc. of Paris, KY

DBE Employer Identification Numbers: Federal KY
The amount to be subcontracted by this request is DBE \$197,067.78 or 8.92% Contract \$197,067.78 or 8.92% of the
(original contract) or a subcontract amount of \$ 2,210,140.50 Worth \$2,210,140.50

I have previously requested approval for subcontracts or agreements with other DBE as follows:

Name of DBE firm	DBE Amount	DBE %	Contract "Worth" Amount	Contract %
Totals based on original contract Amounts	<u>\$197,067.78</u>	<u>8.92%</u>	<u>\$197,067.78</u>	<u>8.92%</u>

This section applicable if DBE firm is also a Subcontractor of work on Project:

This subcontractor has been furnished a copy of Appendix B of 49 CFR Part 29 and advised to include the Certification in all lower tier covered transactions and in all solicitations for lower tier transactions (Federal Aid Contracts only).

Prime Contractor's Signature

Date

1st Tier Subcontractor's Signature (if applicable)

Date

DBE Participant Signature

Date

**KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
DIVISION OF CONSTRUCTION PROCUREMENT
DBE Plan/SUBCONTRACT REQUEST**

TC 14-35
Rev. 07/07/16

CONTRACT ID (CONTID) _____
 Subcontract # : 2
 TO : Rachel Mills, Director
 Division of Construction Procurement
 FROM : Bluegrass Contracting Corporation 1st Tier Subcontractor:
 Prime Contractor (if applicable)
 SUBJECT : Fayette 167-2018
 County Project Number

I hereby request to utilize for DBE participation a portion of the subject project to:
Landscaper's Corner Inc. of Lexington, KY
 DBE Employer Identification Numbers: Federal KY
 The amount to be subcontracted by this request is DBE \$36,849.11 or 1.67% Contract \$36,849.11 or 1.67% of the
 (original contract) or a subcontract amount of \$ 2,210,140.50 Worth \$2,210,140.50

I have previously requested approval for subcontracts or agreements with other DBE as follows:

Name of DBE firm	DBE Amount	DBE %	Contract "Worth" Amount	Contract %
Cedar Valley Seeding Inc.	\$197,067.78	8.92%	197,067.78	8.92%
Totals based on original contract Amounts	\$233,916.89	10.58%	\$233,916.89	10.58%

This section applicable if DBE firm is also a Subcontractor of work on Project:
 This subcontractor has been furnished a copy of Appendix B of 49 CFR Part 29 and advised to include the Certification in all lower tier covered transactions and in all solicitations for lower tier transactions (Federal Aid Contracts only).

 Prime Contractor's Signature Date

 1st Tier Subcontractor's Signature(if applicable) Date

 DBE Participant Signature Date

14. NON-COLLUSION CERTIFICATION

COMMONWEALTH OF KENTUCKY

COUNTY: FAYETTE

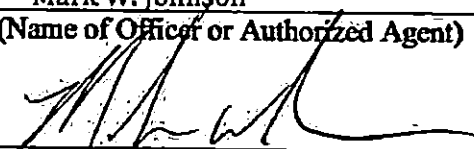
FED PROJECT NO:

I, Mark W. Johnson, President,
(Name of officer or Authorized Agent) (Title)

under penalty of perjury under the laws of the United States, do hereby certify that

Bluegrass Contracting Corporation
(Name of Individual, Co-Partnership, or Corporation submitting bid)

Its agent, officers or employees have not directly or indirectly entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding in connection with this proposal.

Mark W. Johnson President
(Name of Officer or Authorized Agent) (Title)
 January 10, 2018
(Signature) (Date)

15. STATEMENT OF EXPERIENCE

NAME OF INDIVIDUAL: See Attached Corporate Resume

POSITION/TITLE:

STATEMENT OF EXPERIENCE:

NAME OF INDIVIDUAL:

POSITION/TITLE:

STATEMENT OF EXPERIENCE:

NAME OF INDIVIDUAL:

POSITION/TITLE:

STATEMENT OF EXPERIENCE:

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

*** Include all officers, office management's, Affirmative Action officials, and field management personnel. (Attach separate sheets if necessary.)**

16. EQUAL OPPORTUNITY AGREEMENT

The Law


- * Title VII of the Civil Rights Act of 1964 (amended 1972) states that it is unlawful for an employer to discriminate in employment because of race, color, religion, sex, age (40-70 years) or national origin.
- * Executive Order No. 11246 on Nondiscrimination under Federal contract prohibits employment discrimination by contractor and subcontractor doing business with the Federal Government or recipients of Federal funds. This order was later amended by Executive Order No. 11375 to prohibit discrimination on the basis of sex.
- * Section 503 of the Rehabilitation Act of 1973 States:
The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap.
- * Section 2012 of the Vietnam Era Veterans Readjustment Act of 1973 requires Affirmative Action on behalf of disabled veterans and veterans of the Vietnam Era by contractors having Federal Contracts.
- * Section 206 (A) of Executive Order 12086, Consolidation of Contract Compliance Functions for Equal Employment Opportunity, states:
The Secretary of Labor may investigate the employment practices of any Government contractor or sub-contractor to determine whether or not the contractual provisions specified in Section 202 of this order have been violated.

The Lexington-Fayette Urban County Government practices Equal Opportunity in recruiting, hiring and promoting. It is the Government's intent to affirmatively provide employment opportunities for those individuals who have previously not been allowed to enter into the mainstream of society. Because of its importance to the local Government, this policy carries the full endorsement of the Mayor, Commissioners, Directors, and all supervisory personnel. In following this commitment to Equal Employment Opportunity and because the Government is the benefactor of the Federal funds, it is both against the Urban County Government policy and illegal for the Government to let contracts to companies which knowingly or unknowingly practice discrimination in their employment practices. Violation of the above mentioned ordinances may cause a contract to be canceled and the contractor may be declared ineligible for future consideration.

Please sign this statement in the appropriate space acknowledging that you have read and understand the provisions contained herein. Return this document as part of your application packet.

Bidders

I/We agree to comply with the Civil Rights Laws listed above that govern employment rights of minorities, women, Vietnam veterans, handicapped, and aged persons.


Signature

Bluegrass Contracting Corporation
Name of Business

The Entity (regardless of whether construction contractor, non-construction contractor or supplier) agrees to provide equal opportunity in employment for all qualified persons, to prohibit discrimination in employment because of race, color, creed, national origin, sex or age, and to promote equal employment through a positive, continuing program from itself and each of its sub-contracting agents. This program of equal employment opportunity shall apply to every aspect of its employment policies and practices.

The Kentucky equal Employment Opportunity Act of 1978 (KRS 45.560-45.640) requires that any count, city, town, school district, water district, hospital district, or other political subdivision of the state shall include in directly or indirectly publicly funded contracts for supplies, materials, services, or equipment hereinafter entered into the following provisions:

During the performance of this contract, the contractor agrees as follows:

- (1) *The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age or national origin;*
- (2) *The contractor will state in all solicitations or advertisements for employees placed by or on behalf of the contractors that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age or national origin;*
- (3) *The contract will post notices in conspicuous places, available to employees and applicants for employment, setting forth the provisions of the non-discrimination clauses required by this section; and*
- (4) *The contractor will send a notice to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding advising the labor union or workers' representative of the contractor's commitments under the nondiscrimination clauses.*

The Act further provides:

KRS 45.610. Hiring minorities – Information required

- (1) *For the length of the contract, each contractor shall hire minorities from other sources within the drawing area, should the union with which he has collective bargaining agreements be unwilling to supply sufficient minorities to satisfy the agreed upon goals and timetable.*
- (2) *Each contractor shall, for the length of the contract, furnish such information as required by KRS 45.560 to KRS 45.640 and by such rules, regulations and orders issued pursuant thereto and will permit access to all books and records pertaining to his employment practices and work sites by the contracting agency and the department for purposes of investigation to ascertain compliance with KRS 45.560 to 45.640 and such rules, regulations and orders issued pursuant thereto.*

KRS 45.620. Action against contractor – Hiring of minority contractor or subcontractor

- (1) *If any contractor is found by the department to have engaged in an unlawful practice under this chapter during the course of performing under a contract or subcontract covered under KRS 45.560 to 45.640, the department shall so certify to the contracting agency and such certification shall be binding upon the contracting agency unless it is reversed in the course of judicial review.*
- (2) *If the contractor is found to have committed an unlawful practice under KRS 45.560 to 45.640, the contracting agency may cancel or terminate the contract, conditioned upon a program for future compliance approved by the contracting agency and the department. The contracting agency may declare such a contractor ineligible to bid on further contracts with that agency until such time as the contractor complies in full with the requirements of KRS 45.560 – 45.640.*
- (3) *The equal employment provisions of KRS 45.560 to 45.640 may be met in part by a contractor by subcontracting to a minority contractor or subcontractor. For the provisions of KRS 45.560 to 45.640, a minority contractor or subcontractor shall mean a business that is owned and controlled by one or more persons disadvantaged by racial or ethnic circumstances.*

KRS 45.630 Termination of existing employee not required, when

Any provision of KRS 45.560 to 45.640 notwithstanding, no contractor shall be required to terminate an existing employee upon proof that that employee was employed prior to the date of the contract.

KRS 45.640 Minimum skills

Nothing in KRS 45.560 to 45.640 shall require a contractor to hire anyone who fails to demonstrate the minimum skills required to perform a particular job.

It is recommended that all of the provisions quoted above to be included as special conditions in each contract. In the case of a contract exceeding \$250,000, the contractor is required to furnish evidence that his work-force in Kentucky is representative of the available work-force in the area from which he draws employees, or to supply an Affirmative Action plan which will achieve such representation during the life of the contract.

17. **EQUAL EMPLOYMENT OPPORTUNITY AFFIRMATIVE ACTION POLICY**

It is the policy of Bluegrass Contracting Corporation to assure that all applicants for employment and all employees are treated on a fair and equitable basis without regard to their race, religion, sex, color, handicap, natural origin or age.

Such action shall include employment, promotion, demotion, recruitment or recruitment advertising, layoff or termination, rates of pay and other forms of compensation, and selection for training, whether apprenticeship and/or on-the-job-training.

Furthermore, this company agrees to make special recruitment efforts to hire the protected class whenever feasible. This company also agrees to adhere to all applicable federal, state, and local laws relating to Equal Employment Opportunity for all individuals.

Bonny Stewart has been appointed Equal Employment Compliance (EEOC) Officer and shall be available for counseling, answering of questions in regards to this company policy, and to hear any complaints of discrimination. The EEOC Officer may be reached by calling (859) 231-0069.

Signature: 
(Bidding Contractor)

Title: President

Date: January 10, 2018

18. WORKFORCE ANALYSIS FORM

Name of Organization: _____

Date: ____/____/____

Categories	Total	White		Black		Other		Total	
		M	F	M	F	M	F	M	F
Administrators	1	1	1					1	
Professionals	2	2	2					2	
Superintendents	5	5						5	
Supervisors	9	7	1	1				8	1
Foremen									
Technicians									
Protective Service									
Para-Professionals									
Office/Clerical	4	1	3					1	3
Skilled Craft	32	30		2				32	
Service/Maintenance	2	2						2	
Total:	55	48	4	3				51	4

Prepared By: Billie Johnson, Office Manager

19. EVIDENCE OF INSURABILITY

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT CONSTRUCTION PROJECT
 (Use separate form for each Agency or Brokerage agreeing to provide coverage)

Names Insured: Bluegrass Contracting Corporation

Employee ID: _____

Address: 1075 Red Mile Road, Lexington, KY 40504

Phone: _____

Project to be insured: LFUCG Southland Drive Sidewalk Project

In lieu of obtaining certificates of insurance at this time, the undersigned agrees to provide the above Named Insured with the minimum coverage listed below. These are outlined in the Insurance and Risk Management of Part V (Special Conditions), including all requirements, and conditions:

Section Items	Coverage	Minimum Limits and Policy Requirements	Limits Provided To Insured	Name of Insurer	A.M. Best's Code Rating	
					Code	Rating
SC-3, Section 2, Part 4.1 – see provisions	CGL	\$1,000,000 per occ. And \$2,000,000 aggregate	\$1,000,000/ 2,000,000	Charter Oaks Fire	002516	A++:XV
SC-3, Section 2, Part 4.1 – see provisions	AUTO	\$2,000,000/per occ.	\$ 1,000,000	Travelers Property	011027	A++:XV
SC-3, Section 2, Part 4.1 – see provisions	WC	Statutory w /endorsement as noted	\$ 4,000,000/ 4,000,000/ 4,000,000	KY AGC	055002	A-:VII

Section 2 includes required provisions, statements regarding insurance requirements, and the undersigned agrees to abide by all provisions for the coverage's checked above unless stated otherwise when submitting.

J. Smith Lanier & Company
Agency or Brokerage

360 E. Vine Street
Street Address

Lexington KY 40507
City State Zip

859-244-7637
Telephone Number

Paula J. Hardin
Name of Authorized Representative

Senior Account Manager
Title


Authorized Signature

01/08/19
Date

NOTE: Authorized signatures may be the agent's if agent has placed insurance through an agency agreement with the insurer. If insurance is brokered, authorized signature must be that of authorized representative of insurer.

MAYOR JIM GRAY



LEXINGTON

TODD SLATIN
DIRECTOR
CENTRAL PURCHASING

ADDENDUM #1

Bid Number: #167-2018

Date: December 7, 2018

Subject: Southland Drive Sidewalk Project

Address inquiries to:

Sondra Stone

859.258.3320

TO ALL PROSPECTIVE SUBMITTERS:

Please be advised of the following clarifications to the above referenced Bid:

1. Bid opening is extended to January 9, 2019, 2:00 pm.
2. Q&A session is extended to December 21, 2018, 5:00 pm.

Todd Slatin, Director
Division of Central Purchasing

All other terms and conditions of the Bid and specifications are unchanged.

This letter should be signed, attached to and become a part of your Bid.

COMPANY NAME: Bluegrass Contracting Corporation

ADDRESS: 1075 Red Mile Road, Lexington, KY 40504

SIGNATURE OF BIDDER:



MAYOR JIM GRAY



LEXINGTON

TODD SLATIN
DIRECTOR
CENTRAL PURCHASING

ADDENDUM #2

Bid Number: #167-2018

Date: December 17, 2018

Subject: Southland Drive Sidewalk Project

**Address inquiries to:
Sondra Stone
859.258.3320**

TO ALL PROSPECTIVE SUBMITTERS:

Please be advised of the following clarifications to the above referenced Bid:

1. Pre-bid sign-in sheet is attached.
2. Pre-bid agenda is attached.
3. Please replace Page P-15 in spec book with attached Page P-15 Bid Schedule, adding unit pricing for Rock Removal and Concrete Entrance.
4. Please replace Page TS-1 in spec book with attached TS-1. Add attached Pages TS-26 – TS-28 and TS-113 - TS-114 to technical specs.
5. Excel spreadsheet of bid schedule is attached. If Contractor chooses to use excel spreadsheet, a hard copy with bid signature page must be submitted, along with electronic copy of spreadsheet either on CD or flash drive.

Q&A

1. Q Would the City consider extending the working days?
A Yes we will extend it to 210 days.
2. Q How are culverts connected to existing culverts?
A Will require cast in place and will be approved during shop drawings.
3. Q How will rock removal be handled?
A A bid item will be added with 100 CY of mechanical rock removal (allowance).



- 4. Q Is sidewalk removal incidental to clearing and grubbing?
A Yes.
- 5. Q Is concrete masonry incidental to culverts?
A Yes.
- 6. Q How is RR coordination and insurance handled?
A None is needed for this project.
- 7. Q Who will handle testing of materials?
A LFUCG will do all testing.
- 8. Q Can culverts be completed by cast in place?
A Yes.
- 9. Q Can you confirm if concrete entrance pavement is needed?
A A bid item will be added for concrete entrance pavement.
- 10. Q When is final day for Questions?
A December 21, 2018.

Todd Slatin

Todd Slatin, Director
Division of Central Purchasing

All other terms and conditions of the Bid and specifications are unchanged.

This letter should be signed, attached to and become a part of your Bid.

COMPANY NAME: Bluegrass Contracting Corporation

ADDRESS: 1075 Red Mile Road Lexington, KY 40504

SIGNATURE OF BIDDER: *[Signature]*



MAYOR JIM GRAY



LEXINGTON

TODD SLATIN
DIRECTOR
CENTRAL PURCHASING

ADDENDUM #3

Bid Number: #167-2018

Date: December 21, 2018

Subject: Southland Drive Sidewalk Project

**Address inquiries to:
Sondra Stone
859.258.3320**

TO ALL PROSPECTIVE SUBMITTERS:

Please be advised of the following clarifications to the above referenced Bid:

1. Please replace Page P14 in spec book with attached P14. Quantities changed on Item #44.
2. Corrected Excel Bid Schedule is attached.

Q&A

1. **Q:** Will you allow High Density Polyethylene (HDPE) or Polypropylene (PP) plastic pipe for Storm Pipe/Drainage on this project?

A: Yes. We will allow HDPE and PP pipe if it is a new installation. If it is a culvert extension, then the extension must match the existing pipe, which is reinforced concrete pipe. Attached is a specification for HDPE and PP Pipe.

2. **Q:** I wanted to make sure Verti Block would be an approved alternate for the Southland Drive Sidewalk project.

A: This product does not meet the specifications. It is a hollow block that is smaller than the proposed solid block in the specifications. This block also requires a tie back and there are too many utilities that would be in conflict during construction.

3. **Q:** Will the owner pay for any relocation costs if an existing light/utility pole conflicts with the proposed sidewalk work? Or will the sidewalk alignment/width be adjusted to work around the existing utility/light poles?

A: Owner will be responsible for having poles relocated or will build around them.



4. **Q:** The bid schedule calls for four existing signs to be removed and reset but I only see two shown on the plans. Can you provide the location of the two other signs that will be removed and reset? Will any of the four signs require electrical work when there removed or reset?

A: The plans show 2 signs to be relocated. The sign in front of the funeral home does require electrical work. The other 2 signs are located at **Lt. Station 124+20** and **Lt. Station 125+25** and the decision to relocate them will be made during construction. There is no electrical service with these signs.



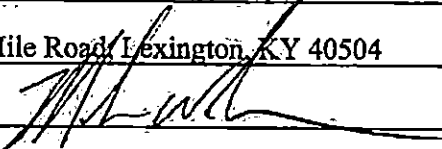
Todd Slatin, Director
Division of Central Purchasing

All other terms and conditions of the Bid and specifications are unchanged.

This letter should be signed, attached to and become a part of your Bid.

COMPANY NAME: Bluegrass Contracting Corporation

ADDRESS: 1075 Red Mile Road, Lexington, KY 40504

SIGNATURE OF BIDDER: 



MAYOR JIM GRAY



LEXINGTON

TODD SLATIN
DIRECTOR
CENTRAL PURCHASING

ADDENDUM #4

Bid Number: #167-2018

Date: January 2, 2019

Subject: Southland Drive Sidewalk Project

Address Inquiries to:

Sondra Stone

859.258.3320

TO ALL PROSPECTIVE SUBMITTERS:

Please be advised of the following clarifications to the above referenced Bid:

Verti-Block is an approved alternate for Redi-Rock.

**Todd Slatin, Director
Division of Central Purchasing**

All other terms and conditions of the Bid and specifications are unchanged.

This letter should be signed, attached to and become a part of your Bid.

COMPANY NAME: Bluegrass Contracting Corporation

ADDRESS: 1075 Red Mile Road, Lexington, KY 40504

SIGNATURE OF BIDDER:



MAYOR JIM GRAY



LEXINGTON

TODD SLATIN
DIRECTOR
CENTRAL PURCHASING

ADDENDUM #5

Bid Number: #167-2018

Date: January 3, 2019

Subject: Southland Drive Sidewalk Project

Address Inquiries to:
Sondra Stone
859.258.3320

TO ALL PROSPECTIVE SUBMITTERS:

Please be advised of the following clarifications to the above referenced Bid:

1. Please replace Page P-15 through P16 in spec book with attached Page P-15 through P-16 Bid Schedule, adding unit pricing for Guide Rail.
2. Please replace Page TS-1 and TS-12 in spec book with attached TS-1 and TS-12. Add attached Pages TS-115 and two guide rail drawings to technical specs.
3. Please add attached Sheets R2B and X31 – X39 to technical specs.
4. Corrected Excel spreadsheet of bid schedule is attached. If Contractor chooses to use excel spreadsheet, a hard copy with bid signature page must be submitted, along with electronic copy of spreadsheet either on CD or flash drive.
5. Bid opening is extended to Thursday, January 10, 2:00 pm.

Todd Slatin, Director
Division of Central Purchasing

All other terms and conditions of the Bid and specifications are unchanged. This letter should be signed, attached to and become a part of your Bid.

COMPANY NAME: Bluegrass Contracting Corporation

ADDRESS: 1075 Red Mile Road Lexington, KY 40504

SIGNATURE OF BIDDER:



Document A310™ – 2010

Conforms with The American Institute of Architects AIA Document 310

Bid Bond

CONTRACTOR:

(Name, legal status and address)

Bluegrass Contracting Corporation
PO Box 11638
Lexington, KY 40576

SURETY:

(Name, legal status and principal place of business)

North American Specialty Insurance Company
5200 Metcalf Avenue
Overland Park, KS 66202 - 1391
Mailing Address for Notices

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

OWNER:

(Name, legal status and address)

Lexington Fayette Urban County Government
200 E. Main Street
Lexington, KY 40507

BOND AMOUNT: 5%

Five Percent of Amount Bid

PROJECT:

(Name, location or address, and Project number, if any)

Southland Dr Sidewalk Project; Bid No. 167-2018

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner 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. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

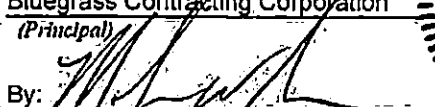
When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be deemed as a statutory bond and not as a common law bond.

Signed and sealed this 10th day of January, 2019.


(Witness) Turner McKenzie

Bluegrass Contracting Corporation

(Principal)

By: 
(Title) Mark W. Johnson, President



North American Specialty Insurance Company

(Surety)

(Seal)

By: 
(Title) Monica A. Kaiser, Attorney-in-Fact



SWISS RE CORPORATE SOLUTIONS

NORTH AMERICAN SPECIALTY INSURANCE COMPANY
WASHINGTON INTERNATIONAL INSURANCE COMPANY

GENERAL POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, THAT North American Specialty Insurance Company, a corporation duly organized and existing under laws of the State of New Hampshire, and having its principal office in the City of Overland Park, Kansas, and Washington International Insurance Company, a corporation organized and existing under the laws of the State of New Hampshire and having its principal office in the City of Overland Park, Kansas, each does hereby make, constitute and appoint: Monica A. Kaiser

Principal: Bluegrass Contracting Corporation Bond Number: Bid Bond
Obligee: Lexington Fayette Urban County Government Bond Amount: Sec Bond Form
Bond Description: Southland Dr Sidewalk Project; Bid No. 167-2018

Its true and lawful Attorney-in-Fact, to make, execute, seal and deliver, for and on its behalf and as its act and deed, bonds or other writings obligatory in the nature of a bond on behalf of each of said Companies, as surety, on contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract or suretyship executed under this authority shall exceed the amount of: FIFTY MILLION (\$50,000,000.00) DOLLARS

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of both North American Specialty Insurance Company and Washington International Insurance Company at meetings duly called and held on the 9th of May, 2012:


"RESOLVED, that any two of the Presidents, any Managing Director, any Senior Vice President, any Vice President, any Assistant Vice President, the Secretary or any Assistant Secretary be, and each or any of them hereby is authorized to execute a Power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings and all contracts of surety, and that each or any of them hereby is authorized to attest to the execution of any such Power of Attorney and to attach therein the seal of the Company; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be binding upon the Company when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached."



By 
Steven P. Anderson, Senior Vice President of Washington International Insurance Company
& Senior Vice President of North American Specialty Insurance Company



By 
Michael A. Ito, Senior Vice President of Washington International Insurance Company
& Senior Vice President of North American Specialty Insurance Company

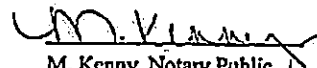
IN WITNESS WHEREOF, North American Specialty Insurance Company and Washington International Insurance Company have caused their official seals to be hereunto affixed, and these presents to be signed by their authorized officers this 12th day of October, 2017.

North American Specialty Insurance Company
Washington International Insurance Company

State of Illinois ss:
County of Cook

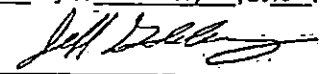
On this 12th day of October, 2017, before me, a Notary Public personally appeared Steven P. Anderson, Senior Vice President of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company and Michael A. Ito, Senior Vice President of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company, personally known to me, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as officers of and acknowledged said instrument to be the voluntary act and deed of their respective companies.




M. Kenny, Notary Public

I, Jeffrey Goldberg, the duly elected Assistant Secretary of North American Specialty Insurance Company and Washington International Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney given by said North American Specialty Insurance Company and Washington International Insurance Company, which is still in full force and effect.

IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Companies this 10th day of January, 2019.


Jeffrey Goldberg, Vice President & Assistant Secretary of
Washington International Insurance Company & North American Specialty Insurance Company



BLUEGRASS CONTRACTING CORPORATION



**1075 Red Mile Road
P.O. Box 11638
Lexington, KY 40576
Ph: (859) 231-0069
Fax: (859) 281-6457**

www.bluegrasscontracting.com



BLUEGRASS CONTRACTING CORPORATION

INCORPORATED:

April 3, 1969

PRE-QUALIFIED BY:

**Kentucky Department of Transportation
Tennessee Department of Transportation**

CERTIFIED:

**Small Business
Hub Zone
Veteran Owned**

AWARDS:

**Kentucky Association of Highway Contractors, Inc.
President's Safety Achievement Award 1991
KAHC Chairman's Safety Achievement Award 1999
Safety Merit Award 1993, 1994, 2002, 2003, 2004, 2006
Safety Award 2007, 2008, 2009, 2012, 2013, 2015 & 2016**

**American Public Works Association – KY Chapter
Project of the Year: Sugar Mill Mitigation Project
Stormwater Category, 2010**

**Indiana Ready Mix Concrete Association
Outstanding Concrete Achievement Award:
Merom Landfill Cell Project – Sullivan, IN, 2013**

**KY Ready Mixed Concrete Association
Concrete Design Award for the 19th Engineer Battalion
Complex, 2014**

**KY Ready Mixed Concrete Association
Concrete Design Award for the US25 & KY36 Intersection
2014**

**KY SAME Kentuckiana Post Small Business Award for
Excellence in Construction Services, 2015**

MEMBERS OF:

**Kentucky Ready Mixed Concrete Association since 2005
Kentucky County Judge/Executive Association
Society of American Military Engineers
Kentucky Concrete Pavement Association
Kentucky Chamber of Commerce**



BLUEGRASS CONTRACTING CORPORATION

Bluegrass Contracting Corporation has been focused on heavy and highway construction since 1969, but today as a general contractor our focus has evolved to include many other areas.

SERVICES WE SPECIALIZE IN:

- Project Management
- Design Build
- Site Development
- Sanitary Landfill Operation
- Bridges and Culverts
- Concrete Paving
- Clearing and Grubbing
- Grading
- Drainage and Storm Sewer
- Sanitary Sewer
- Asphalt Paving
- Asphalt Sales (Garrard Co. Plant)

BUSINESS VOLUME

Fiscal Year Ending:	
12-31-17	25,600,000.00
12-31-16	25,800,000.00
12-31-15	23,700,000.00
12-31-14	19,000,000.00
12-31-13	13,400,000.00
12-31-12	10,071,050.00
12-31-11	6,776,000.00
12-31-10	8,209,000.00
12-31-09	6,466,000.00
12-31-08	7,236,000.00
12-31-07	6,989,000.00
12-31-06	6,300,000.00
12-31-05	4,200,000.00
12-31-04	2,017,060.00
12-31-03	1,268,000.00



BLUEGRASS CONTRACTING CORPORATION

PROJECTS CURRENT AND PAST

<u>Description & Location</u>	<u>Contract Amount</u>	<u>Status</u>	<u>Completion Date</u>
KY Dept. of Transportation Pulaski Co.	\$1,441,475.00	0%	09/18
KY Dept. of Transportation Fayette Co.	\$78,882.50	0%	07/18
KY Dept. of Transportation Caldwell Co. D/O	\$67,000.00	100%	03/18
KY Dept. of Transportation Owensboro D/O	\$134,000.00	100%	04/18
KY Dept. of Transportation I-64 Hopkinsville D/O	\$201,000.00	100 %	03/18
KY Dept. of Transportation Greenup-Boyd-Rowan Co.	\$393,452.00	10%	09/18
KY Dept. of Transportation Bullitt Co.	\$132,067.90	100%	05/18
Deerhaven Subdivision Developers West Marts LLC	\$170,000.00	95%	05/18
KY Dept. of Transportation Cumberland Co. D/O	\$64,000.00	100%	03/18
KY Dept. of Transportation Christian Co. D/O	\$135,150.00	100%	11/17
Cumberland Gap Big South Fork Federal Highway Administration	\$545,870.00	60%	07/18
Carroll Co. Haydon Bridge Co.	\$314,186.00	100%	11/17
Big Cypress National Reserve Miami, FL Federal Highway Administration	\$271,088.00	100%	03/18
KY Dept. of Transportation Boyle Co.	\$272,265.15	100%	10/17



BLUEGRASS CONTRACTING CORPORATION

PROJECTS CURRENT AND PAST

<u>Description & Location</u>	<u>Contract Amount</u>	<u>Status</u>	<u>Completion Date</u>
Stormwater Quality Improvements Transylvania University	\$371,100.00	100%	09/17
KY Dept. of Transportation Laurel Co.	\$1,308,345.05	100%	11/17
University Flats Messer Construction	\$401,664.34	100%	08/17
KY Dept. of Transportation Cumberland Co.	\$1,018,464.95	100%	07/17
Blue Grass Army Depot Fuel Facility Richmond, KY Waldrop Construction, Inc.	\$413,732.19	80%	06/18
KY Dept. of Transportation Fayette Co.	\$441,916.54	100%	09/17
KY Dept. of Transportation Franklin Co.	\$2,088,969.98	100%	10/17
KY Dept. of Transportation Harrison Co.	\$546,342.68	100%	10/17
Fayette Co. Outer Loop George B. Stone Co.	\$273,396.95	100%	10/17
Fayette Co. Inner Loop George B. Stone Co.	\$289,454.25	100%	10/17
KY Dept. of Transportation Woodford-Franklin Co.	\$6,663,978.43	100%	11/17
KY Dept. of Transportation Barren Co.	\$304,311.50	100%	08/17
KY Dept. of Transportation Jessamine Co.	\$466,952.58	100%	04/17
KY Dept. of Transportation Fayette Co.	\$610,784.55	100%	05/17



BLUEGRASS CONTRACTING CORPORATION

PROJECTS CURRENT AND PAST

<u>Description & Location</u>	<u>Contract Amount</u>	<u>Status</u>	<u>Completion Date</u>
KY Dept. of Transportation Garrard Co.	\$431,318.06	100%	04/17
KY Dept. of Transportation Madison Co.	\$681,869.30	100%	06/17
London-Corbin Airport Jave, Inc.	\$105,203.00	100%	11/16
Blue Grass Army Depot Consolidated Shipping Center Richmond, KY Carothers Construction Inc.	\$2,350,000.00	80%	04/19
Blue Grass Airport Taxiway A Kay & Kay Contracting, LLC	\$1,677,521.97	100%	06/17
Glebe Road Bridge Arlington, VA Federal Highway Administration	\$495,364.00	100%	11/16
KY Dept. of Transportation Butler Co. D/O	\$128,790.00	100%	10/16
Polk-Dalton Clinic Parking Lot University of Kentucky	\$126,602.00	100%	11/16
Green River Paving US Army Corps. Of Engineers	\$63,470.00	100%	09/16
Spurlock Site Drainage Improvements Eastern KY Power Coop.	\$1,606,802.10	100%	11/16
IDIQ No. 1 Smoky Mtns, TN Federal Highway Administration	\$398,870.00	100%	12/16
Berea College -Seaberry Hall Messer Construction	\$416,934.17	100%	06/17
UK Civil Site Infrastructure Improvements University of Kentucky	\$1,416,500.00	100%	12/16


BLUEGRASS CONTRACTING CORPORATION

PROJECTS CURRENT AND PAST

<u>Description & Location</u>	<u>Contract Amount</u>	<u>Status</u>	<u>Completion Date</u>
Shiloh National Military Park Federal Highway Administration	\$1,400,000.00	100%	12/16
Rough River Dam State Park KY Finance Cabinet	\$702,942.00	100%	12/16
Morgan Co., KY Mac Construction	\$128,812.00	100%	09/16
Berea College Science Building Messer Construction	\$1,278,000.00	90%	03/18
KY Dept. of Transportation Warren Co. D/O	\$91,195.00	100%	04/15
KY Dept. of Transportation Lincoln Co.	\$1,105,012.51	100%	10/16
KY Dept. of Transportation Oldham Co.	\$755,974.50	100%	05/16
KY Dept. of Transportation Powell Co.	\$517,046.75	100%	05/16
Roger's Road Improvements Lexington, KY LFUCG	\$2,838,990.20	100%	06/17
Idle Hour Park Improvements Lexington, KY LFUCG	\$479,230.00	100%	07/16
KY Dept. of Transportation Carter Co.	\$722,791.50	100%	05/16
Lower Cane Run Rd. Storage Facility Judy Construction	\$233,668.50	100%	12/17
Blue Grass Airport Kay & Kay Contracting, LLC	\$294,313.50	100%	12/16



BLUEGRASS CONTRACTING CORPORATION

PROJECTS CURRENT AND PAST

<u>Description & Location</u>	<u>Contract Amount</u>	<u>Status</u>	<u>Completion Date</u>
Pepsi-Cola Stormwater Improvements G & J Pepsi Cola Bottlers	\$177,675.05	100%	12/15
Wolf Creek Dam U.S. Army Corps. Of Engineers	\$2,757,036.25	100%	12/16
KY Dept. of Transportation Shelby Co. D/O	\$545,531.00	100%	12/15
KY Dept. of Transportation Fayette/Scott/Woodford Co. D/O	\$335,000.00	100%	12/15
JK Smith Landfill Walker Company of KY	\$30,200.00	100%	04/16
Federal Highway Administration Land Between the Lakes	\$334,757.25	100%	12/15
Boonesboro Manor Pump Station JFG Enterprises, Inc.	\$324,724.00	100%	09/16
KY Dept. of Transportation Fayette Co.	\$217,878.30	100%	11/15
Blue Grass Army Depot Container/Handling Building TEM Group, Inc.	\$144,785.00	100%	11/15
Marion-Crittendon Airport Jave, LLC	\$56,070.00	100%	12/15
KY Dept. of Transportation Whitley Co.	\$264,053.00	100%	11/15
KY Dept. of Transportation Madison Co.	\$280,083.10	100%	11/15
KY Dept. of Transportation Laurel Co.	\$1,116,218.25	100%	11/15


BLUEGRASS CONTRACTING CORPORATION

PROJECTS CURRENT AND PAST

<u>Description & Location</u>	<u>Contract Amount</u>	<u>Status</u>	<u>Completion Date</u>
KY Dept. of Transportation Butler Co. D/O	\$237,525.00	100%	08/15
KY Dept. of Transportation Simpson Co. D/O	\$220,700.00	100%	09/15
Lincoln Co. Roads Lincoln Co. Fiscal Court	\$453,180.00	100%	09/15
Speedway – Versailles, KY Lawrence Building Company	\$560,302.70	100%	10/15
Danville Streetscape City of Danville	\$493,511.75	100%	12/15
Linden Walk East Parking Lot University of Kentucky Lexington, KY	\$192,289.25	100%	08/15
Derby Estates City of Georgetown, KY	\$55,565.00	100%	08/15
Eagle Way – Hopkinsville, KY City of Hopkinsville, KY	\$588,744.00	100%	10/15
LFUCG Meadows-Northland Arlington 5C	\$864,959.22	100%	04/16
KY Dept. of Transportation Hardin Co. W/O	\$494,000.00	100%	05/15
KY Dept. of Transportation Johnson Co.	\$978,224.25	100%	09/15
SRE Maintenance Facility Messer Construction	\$980,716.00	100%	08/15
KY Dept. of Transportation Danville D/O	\$90,470.00	100%	12/14
Speedway Wilson Brothers	\$572,229.00	100%	10/15


BLUEGRASS CONTRACTING CORPORATION

PROJECTS CURRENT AND PAST

<u>Description & Location</u>	<u>Contract Amount</u>	<u>Status</u>	<u>Completion Date</u>
Lextran Headquarters Messer Construction	\$2,457,479.00	100%	04/16
Turfland Mall Parking Lot Bristol Group	\$626,023.25	100%	12/14
KY Dept. of Transportation Whitley Co.	\$408,391.75	100%	12/14
KY Dept. of Transportation Butler Co.	\$2,762,317.25	100%	09/15
KY Dept. of Transportation Bath Co.	\$97,200.54	100%	11/14
KY Dept. of Transportation Garrard Co.	\$416,427.10	100%	07/15
KY Dept. of Transportation Madison Co.	\$191,640.63	100%	12/14
Spurlock Station Landfill Ryan Incorporated Central Maysville, KY	\$46,385.00	100%	12/14
KY Dept. of Transportation Laurel Co. Delivery Order	\$304,000.00	100%	09/14
Jim Beam H & M Construction Co., Inc.	\$46,904.00	100%	11/14
Campbell Co. Mago Construction Co.	\$198,328.00	100%	11/14
Indian Fort Trail Bike Path City of Berea, KY	\$284,689.25	100%	11/14
Federal Highway Administration Great Smokey Mtns. Roaring Fork – Gatlinburg, TN	\$1,799,629.00	100%	05/15


BLUEGRASS CONTRACTING CORPORATION

PROJECTS CURRENT AND PAST

<u>Description & Location</u>	<u>Contract Amount</u>	<u>Status</u>	<u>Completion Date</u>
Federal Highway Administration Blue Ridge Parkway, NC	\$847,334.00	100%	05/15
LFUCG Isaac Murphy Trailhead	\$97,686.70	100%	12/14
Bell Co. Hinkle Contracting	\$267,387.75	100%	08/14
KY Dept. of Transportation Clark Co.	\$195,239.50	100%	08/14
ICI – Georgetown, KY Shimizu North America	\$705,500.00	100%	05/15
KY Dept. of Transportation Garrard Co. Work Order	\$48,350.00	100%	06/14
Sabre Field Asphalt Apron Replacement TJC Engineering, Inc.	\$630,382.00	100%	11/14
KY Dept. of Transportation Barren Co. Work Oder	\$52,741.05	100%	05/14
UK FEMA Flood Mitigation University of Kentucky Lexington, KY	\$5,404,486.95	100%	09/15
KY Dept. of Transportation Laurel Co. US25	\$179,582.88	100%	04/14
KY Dept. of Transportation Laurel Co. Hwy 192	\$115,013.33	100%	05/14
KY Dept. of Transportation Owen Co.	\$841,332.04	100%	07/14
Whitley Co. Kay & Kay Contracting	\$336,298.50	100%	08/14



BLUEGRASS CONTRACTING CORPORATION

PROJECTS CURRENT AND PAST

<u>Description & Location</u>	<u>Contract Amount</u>	<u>Status</u>	<u>Completion Date</u>
Greenbriar Country Club Lexington, KY	\$23,438.00	100%	04/14
KY Dept. of Transportation Bell Co.	\$743,911.98	100%	04/14
Blue Grass Airport Codell Construction	\$700,773.00	100%	10/14
Hume Road Power Plant Davis H. Elliot Lexington, KY	\$85,660.75	100%	06/14
LFUCG Pump Station Lexington, KY	\$161,977.00	100%	06/14
Transylvania University Fourth Street Reconstruction Lexington, KY	\$239,630.40	100%	11/13
Toyota Tsusho Denham-Blythe Co. Georgetown, KY	\$36,025.00	100%	09/13
KY Dept. of Transportation Estill Co.	\$372,019.85	100%	11/13
KY Dept. of Transportation Powell Co.	\$108,180.25	100%	11/13
KY Dept. of Transportation Madison Co.	\$335,408.00	100%	11/13
KY Dept. of Transportation Clark Co.	\$373,829.60	100%	12/13
Commonwealth of Kentucky D/O Hardin Co.	\$337,800.00	100%	07/13


BLUEGRASS CONTRACTING CORPORATION

PROJECTS CURRENT AND PAST

<u>Description & Location</u>	<u>Contract Amount</u>	<u>Status</u>	<u>Completion Date</u>
LFUCG Clays Mill Road Improvements Lexington, KY	\$3,310,582.35	100%	09/14
LFUCG Tates Creek Sidewalks Lexington, KY	\$1,671,416.30	100%	06/14
KY Dept. of Transportation Grant Co.	\$618,253.50	100%	08/13
City of Simpsonville US-60 Highway Improvements	\$618,253.50	100%	12/13
LFUCG Meadows-Northland Arlington 5B Lexington, KY	\$738,199.00	100%	07/14
Watterson Expressway Hall Contracting Louisville, KY	\$129,000.00	100%	07/13
KY Dept. of Transportation Gene Snyder Freeway Jefferson Co.	\$64,500.00	100%	07/13
Scott Co. I-75 Hamilton-Hinkle Paving Georgetown, KY	\$1,337,001.50	100%	08/13
Fayette Co. - Newtown Pike KY Dept. of Transportation Lexington, KY	\$3,022,078.72	100%	08/14
19th Engineering Battalion Complex B.L. Harbert Fort Knox, KY	\$1,253,748.00	100%	05/14
Fleming Co. HG Mays Flemingsburg, KY	\$572,984.00	100%	07/13



BLUEGRASS CONTRACTING CORPORATION

PROJECTS CURRENT AND PAST

<u>Description & Location</u>	<u>Contract Amount</u>	<u>Status</u>	<u>Completion Date</u>
ATS Construction Deroode St Lexington, KY	\$581,942.00	100%	11/13
Mammoth Cave National Park Cave City, KY	\$24,875.00	100%	01/13
KY Dept. of Transportation Franklin County	\$306,002.25	100%	07/13
Trans-Ash, Inc. Drakesboro, KY	\$77,706.21	100%	06/13
City of Winchester, KY Depot Street	\$1,022,231.00	100%	06/13
KY Dept. of Transportation Pulaski County	\$1,053,854.21	100%	11/12
KY Dept. of Transportation Bell County	\$573,538.44	100%	11/12
KY Dept. of Transportation Laurel County	\$1,843,640.00	100%	10/12
Federal Highway Administration Jackson County, KY	\$490,806.50	100%	11/12
KY Dept. of Transportation Barren County	\$521,478.12	100%	09/12
City of Georgetown, KY Kroger Turning Lane	\$64,925.00	100%	07/12
Mason Co. Gabion Mattress Maysville, KY	\$324,601.97	100%	08/12
KY Dept. of Transportation Butler County	\$368,188.00	100%	07/12


BLUEGRASS CONTRACTING CORPORATION

PROJECTS CURRENT AND PAST

<u>Description & Location</u>	<u>Contract Amount</u>	<u>Status</u>	<u>Completion Date</u>
Federal Highway Administration Caney Creek	\$2,058,313.00	100%	02/13
Republic Services Transfer Station Lexington, KY	\$225,125.00	100%	02/12
Ironton Bridge Wayne National Forest Ironton, OH	\$985,430.00	100%	07/12
U.S. Army Corps of Engineers Old Hickory Bluff Stabilization Old Hickory, TN	\$613,485.00	100%	06/12
Federal Highway Administration Mammoth Cave National Park	\$763,096.25	100%	11/11
Hinkle Contracting, LLC Hoosier Energy Bloomington, IN	\$1,835,526.00	100%	08/12
KY Dept. of Transportation Whitley County	\$214,290.35	100%	06/12
KY Dept. of Transportation Perry County	\$1,229,280.10	100%	06/12
Chickamauga & Chattanooga National Military Park Alexander's Bridge Chickamauga, GA	\$1,598,256.00	100%	12/11
KY Finance Cabinet Somerset Community College Somerset, KY	\$454,700.00	100%	03/11
KY Dept. of Transportation Clark County	\$25,570.00	100%	04/11



BLUEGRASS CONTRACTING CORPORATION

PROJECTS CURRENT AND PAST

<u>Description & Location</u>	<u>Contract Amount</u>	<u>Status</u>	<u>Completion Date</u>
KY Dept. of Transportation Boyle County	\$50,620.00	100%	05/11
KY Dept. of Transportation Second Street/KY32 Intersection Rowan County	\$1,530,381.70	100%	02/12
KY Dept. of Transportation Concrete Pavement US25 Laurel County	\$683,234.82	100%	07/10
U.S. Forest Service Major Culverts Daniel Boone National Forest Bath & Whitley Counties	\$447,500.00	100%	08/11
KY Dept. of Transportation Legacy Trail Phase 2 Bridge/Trail Construction Lexington, KY	\$697,800.00	100%	09/10
KY Dept. of Transportation Legacy Trail Phase 1 Bridge/Trail Construction Lexington, KY	\$1,737,800.00	100%	09/10
KY Dept. of Transportation Streetscape Oldham County Crestwood, KY	\$103,828.92	100%	08/10
KY Dept. of Transportation Streetscape Oldham County Pee Wee Valley, KY	\$98,177.17	100%	08/10
KY Dept. of Transportation Jefferson County Middletown, KY	\$156,069.19	100%	10/10


BLUEGRASS CONTRACTING CORPORATION

PROJECTS CURRENT AND PAST

<u>Description & Location</u>	<u>Contract Amount</u>	<u>Status</u>	<u>Completion Date</u>
U.S. Forest Service Indian Creek Bridge Replacement Menifee County	\$315,000.00	100%	09/09
LFUCG Vaughn's Branch Flood Mitigation Project Lexington, KY	\$1,225,006.25	100%	05/10
Jefferson County Louisville, KY	\$399,034.44	100%	11/09
KY Dept. of Transportation Greenup County Ashland, KY	\$109,995.55	100%	07/09
U.S. Army Corps of Engineers Wilson Road Improvements Fort Knox, KY	\$6,474,653.00	100%	04/10
Beattyville Streetscape City of Beattyville, KY	\$620,854.00	100%	06/09
Eastern Federal Lands Hwy. Div. Federal Highway Administration Panther Creek Bridge Bryson City, NC	\$1,053,367.00	100%	08/09
City of Berea Mayde Road Improvements Berea, KY	\$3,053,470.24	100%	11/08
KY Dept. of Transportation Casey County Bridge Liberty, KY	\$560,890.37	100%	06/08
KY Finance Cabinet Cigar Lane Improvements KY Horse Park Georgetown, KY	\$1,778,240.00	100%	07/08


BLUEGRASS CONTRACTING CORPORATION

PROJECTS CURRENT AND PAST

<u>Description & Location</u>	<u>Contract Amount</u>	<u>Status</u>	<u>Completion Date</u>
Layne Geo Construction Lake Vega Dam Repairs Blue Grass Army Depot Richmond, KY	\$331,527.00	100%	07/08
KY Dept. of Transportation Rockcastle County Bridge Renfro Valley, KY	\$247,862.80	100%	05/08
LFUCG Meadow, Northland, Arlington Neighborhood Improvements Lexington, KY	\$959,526.50	100%	11/07
Kay & Kay Contracting, LLC Laurel Co.	\$1,488,516.00	100%	10/07
KY Dept. of Transportation Hardin County Sonora, KY	\$677,082.20	100%	08/07
City of Versailles Versailles Streetscape Versailles, KY	\$298,840.00	100%	08/07
Bechtel Parson, Inc. BGCAPP – Roadwork Concrete, Caissons, and Mech. Utilities Blue Grass Army Depot	\$530,987.00	100%	07/07
Bechtel Parsons, Inc. BGCAPP – Fencing Installations Blue Grass Army Depot Richmond, KY	\$1,037,115.00	100%	07/07
KY Finance Cabinet Mark's Lane Bridge Georgetown, KY	\$64,300.00	100%	06/07
Cumberland Point Boat Ramp Lake Cumberland, KY	\$29,735.00	100%	05/07



BLUEGRASS CONTRACTING CORPORATION

OFFICERS AND MANAGERS

President:

Mark W. Johnson, Fourteen years as Manager of Concrete Division of Hinkle Contracting, Paris, Kentucky. Responsible for the construction of bridges, airports, interstate highway, pavement repair, commercial and industrial site work. Prior to that owned company in London, Kentucky doing concrete work for highways, the coal industry, and commercial developments. Purchased Bluegrass Contracting Corporation in 2004.

Vice President:

Dave Luttrell, B.S. Civil Engineering, University of Kentucky, May 1973. Registered Professional Engineer (KY No. 12488, OH No. 45940). Registered Land Surveyor (KY No. 2170). Employed with Dixie Bridge Co. for twelve years. Superintendent, 3D Enterprises for fourteen years Superintendent and Project Manager, RCI for eight years. Responsible for construction of bridges, water and wastewater treatment plants, utilities, concrete structures, site work, excavation, steel structures, and buildings. Joined Bluegrass Contracting Corporation in June 2007.

Project Manager:

James A. Johnson: Worked as operator for Hinkle Contracting Corporation for nine years. Experienced in grading and sanitary/storm sewers. Joined Bluegrass Contracting Corporation in 2004. Certified in pervious concrete.

Project Manager:

Jeff Stamps: Project Manager for Stewart Rickey Construction for five years. Background in mechanical engineering. Experienced with grading, drainage and utilities. Joined Bluegrass Contracting Corporation in 2015.



BLUEGRASS CONTRACTING CORPORATION

PRIMARY FIELD SUPERVISORS

Todd Carmickle: Asphalt Paving Foreman. Experience on multiple asphalt projects including asphalt surface and roadway. First Aid, CPR certified and DOT certified.

Jack Holliday: Project Supervisor. Experience on multiple concrete projects including bridges, grading and pipe work.

Jeffrey Patrick: Project Supervisor. Experience in concrete construction and asphalt paving projects for seventeen years. First Aid, CPR certified and DOT certified.

Raymond Patton: Project Supervisor. Experience in concrete construction and asphalt paving projects for seventeen years. First Aid, CPR certified and DOT certified.

Brad Stamper: Experience on multiple bridge projects including jobs with pavement repairs. First Aid and CPR certified, as well as 10 HR OSHA and DOT certified. Joined Bluegrass Contracting in 2007.

David Stump: Project Supervisor. Experience in concrete construction and asphalt paving projects for seventeen years. First Aid, CPR certified and DOT certified.

J.R. Wagers: Worked as carpenter and carpenter foreman for T.C. Young Construction Company for 12 years. Joined Bluegrass Contracting Corporation in 1986. Foreman on several bridge projects. Certified as ACI Concrete Technician and KYDOT Earthwork Technician. Received commendation from KYDOT for quality of work on bridge over Norfolk Southern Railway in Jessamine County, KY.

Greg Ward: Concrete Foreman. Certified in pervious concrete. First Aid and CPR certified, as well as 10 HR OSHA and DOT certified. Joined Bluegrass Contracting Corporation in 2007.



BLUEGRASS CONTRACTING CORPORATION

COMPANY EQUIPMENT LIST

- (1) **Link Belt 290**
- (1) **Link Belt 240**
- (2) **Link Belt 225**
- (1) **Link Belt 210**
- (1) **2002 Kobelco SK210**
- (1) **Kobelco 200 Excavator/with Breaker**
- (1) **PC78 Komatsu Excavator**
- (2) **Kobelco SK70 Excavator**
- (1) **PC27 Excavator**
- (1) **CAT 420IT Backhoe Loader**
- (1) **CAT 420B Backhoe Loader**
- (1) **Case Backhoe Loader/with Breaker**
- (1) **Case Forklift**
- (1) **CAT 963 Track Loader**
- (1) **Komatsu 510C Loader**
- (1) **D32 Komatsu Dozer**
- (1) **D61 EX-12 Komatsu Dozer**
- (1) **Fiatallis 65C Motor Grader**
- (1) **SD40 Ingersoll-Rand Roller**
- (1) **SD105 Ingersoll-Rand Roller**
- (3) **Bobcat Skid Loader**
- (1) **Broce BB250C Sweeper Broom**
- (1) **Sullair 100 cfm Air Compressor**
- (2) **Sullair 185 cfm Air Compressor**
- (1) **Sillair 375 cfm Air Compressor**
- (1) **Gomaco Bridge Deck Finishing Machine**
- (1) **Bidwell Bridge Deck Finishing Machine**
- (1) **Bidwell Ditch Trimming Machine**
- (1) **Bidwell Ditch Finishing Machine**
- (3) **Crafco Hot Tar Melter**
- (1) **Vermeer 1150 Trencher**
- (1) **Vermeer BC625 Chipper**
- (2) **6" Water Pump**
- (2) **Light Plant**
- (5) **Office/Storage Trailers**
- (1) **2005 Ford Explorer**
- (1) **2012 Ford Explorer**
- (8) **Ford F150 & F250 Pickup Trucks**
- (4) **International Dump Truck**
- (1) **Ford F650 Roll Back Truck**
- (1) **Tri Axle Mack Dump Truck**
- (1) **2004 Terex TA27 Articulated Dump**
- (3) **Allen Tube Concrete Paver**
- (2) **GMC 5500 Service Truck**
- (2) **GMC 3500 Pickups**
- (1) **Teramite Roller Screed**
- (2) **Form Riding Concrete Paver**



BLUEGRASS CONTRACTING CORPORATION

BANK REFERENCE

**Mr. David Ross
Central Bank & Trust Co.
300 W. Vine Street
Lexington, KY 40507
Ph: (859) 253-6222
Fax: (859) 253-6006**

BONDING REFERENCE

**Mr. Todd Lochnert
LA Surety Solutions
121 South Sherrin Avenue
Louisville, KY 40207
Ph: (502) 895-9377
Fax: (502) 895-9690**



CREDIT AND TRADE REFERENCES

**Dun & Bradstreet, Inc
Box 2100
Louisville, KY 40201
Ph: (502) 459-1000
DUNS#04-754-5017**

**Citicapital
5250-77 Center Dr., St. 100
Charlotte, NC 28217
Ph: (502) 224-0748**

**Advanced Drainage Systems
331 Cutters Hill Court
Lexington, KY 40509
Ph: (859) 264-8871**

**W.T. Congleton Co.
613 Laco Drive
Lexington, KY 40511
Ph: (859) 231-6180
Fax: (888) 550-6170**

**MMI of Kentucky
2081 Mercer Road
Lexington, KY 40511
Ph: (859) 255-0070
Fax: (859) 231-6522**

**Brandeis Machinery
1389 Cahill Drive
Lexington, KY 40504
Ph: (859) 259-3456
Fax: (859) 254-0783**

**Irving Materials Inc.
P.O. Box 34217
Louisville, KY 40232
Ph: (502) 456-6930
Fax: (502) 451-8823**

**Ready Mix Concrete
63 Foster Lane
Somerset, KY 42503
Ph: (606) 679-7490**

**Independent Concrete Pipe
3701 Kramers Lane
Shively, KY 40216-4646
Ph: (502) 448-9500**



BLUEGRASS CONTRACTING CORPORATION

CREDIT AND TRADE REFERENCES

Vulcan Materials Company
3001 Alcoa Highway
Knoxville, TN 37901
Ph: (865) 577-2511
Fax: (865) 579-2967

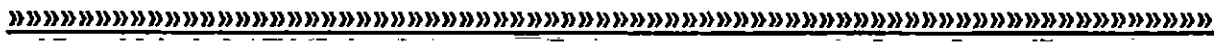
Wayne Supply Company
P.O. Box 951439
Cleveland, OH 44193-0016
Ph: (859) 254-2756
Fax: (859) 254-2750

Harrod Concrete
500 S. Forbes Road
Lexington, KY 40504
Ph: (859) 254-0526
Fax: (502) 223-1855

Sherman Dixie Concrete
200 42nd Avenue North
Nashville, TN 37209
Ph: (615) 889-0700
Fax: (615) 889-2670

The Wells Group LLC
P.O. Box 28
West Liberty, KY 41472
Ph: (606) 743-3485

Equip. Sales & Rentals
628 Bizzell Drive
Lexington, KY 40510
Ph: (859) 231-5343



CONTRACTING AGENCY REFERENCES

Mr. Paul Nesbitt
Nesbitt Engineering
416 Park Place
Lexington, KY 40511
Ph: (859) 233-3111

Mr. Roger Blair
Tetra Tech, Inc.
800 Corporate Drive
Lexington, KY 40503
Ph: (859) 223-8000

Mr. Sam Williams
LFUCG
200 East Main Street
Lexington, KY 40507
Ph: (859) 258-3410

Mr. David Hughes
KY Transportation Cabinet
713 New Circle Rd. NW
Lexington, KY 40512
Ph: (859) 246-2355

Mr. Brad Peters
Construction Op. SPSV1
TN Dept of Transportation
1407 Greenwood Drive
Greeneville, TN 37745

Mr. James Ballinger, PE
KY Transportation Cabinet
763 New Circle Road, NW
Lexington, KY 40512
Ph: (859) 246-2355

Mr. Mike Calebs
KY Transportation Cabinet
P.O. Box 250
Manchester, KY 40962
Ph: (606) 598-2145

Mr. Bart Bryant
KY Transportation Cabinet
P.O. Box 347
Flemingsburg, KY 41041
Ph: (800) 817-2551

PART IV

GENERAL CONDITIONS

TABLE OF CONTENTS

Article Number	Title
1.	DEFINITIONS
2.	PRELIMINARY MATTERS
3.	CONTRACT DOCUMENTS: INTENT, CONFLICTS, AMENDING AND REUSE
4.	AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS
5.	CONTRACTOR'S RESPONSIBILITIES
6.	OTHER WORK
7.	OWNER'S RESPONSIBILITIES
8.	ENGINEER'S STATUS DURING CONSTRUCTION
9.	CHANGES IN THE WORK
10.	CHANGE OF CONTRACT PRICE
11.	CHANGE OF CONTRACT TIME
12.	WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK
13.	PAYMENTS TO CONTRACTOR AND COMPLETION
14.	SUSPENSION OF WORK AND TERMINATION
15.	MISCELLANEOUS

DETAILED TABLE OF CONTENTS OF GENERAL CONDITIONS

1. Definitions
2. Preliminary Matters
 - 2.1 Delivery of Bonds
 - 2.2 Copies of Documents
 - 2.3 Commencement of Contract Time; Notice to Proceed
 - 2.4 Starting the Project
 - 2.5 Before Starting Construction
 - 2.6 Submittal of Schedules
 - 2.7 Preconstruction Conference
 - 2.8 Finalizing Schedules
3. Contract Documents, Intent, Conflicts, Amending, and Reuse
 - 3.1 General
 - 3.2 Intent
 - 3.3 Conflicts
 - 3.4 Amending and Supplementing Contract Documents
 - 3.5 Reuse of Documents
4. Availability of Lands, Physical Conditions, Reference Points
 - 4.1 Availability of Lands
 - 4.2 Physical Conditions
 - 4.3 Physical Conditions - Underground Facilities
 - 4.4 Reference Points
5. CONTRACTOR'S Responsibilities
 - 5.1 Supervision
 - 5.2 Superintendence
 - 5.3 Labor
 - 5.4 Start-Up and Completion of Work
 - 5.5 Materials and Equipment
 - 5.6 Adjusting Progress Schedule
 - 5.7 Substitutes or "Or-Equal" Items
 - 5.8 Subcontractors, Suppliers and Others
 - 5.9 Patent Fees and Royalties
 - 5.10 Permits
 - 5.11 Laws and Regulations
 - 5.12 Taxes
 - 5.13 Use of Premises

- 5.14 Record Drawings
- 5.15 Shop Drawings and Samples
- 5.16 Continuing the Work
- 5.17 Erosion and Sediment Control

- 6. Other Work
 - 6.1 Related Work at Site
 - 6.2 Other Contractors or Utility Owners
 - 6.3 Delays Caused By Others
 - 6.4 Coordination

- 7. OWNER'S Responsibilities
 - 7.1 Communications
 - 7.2 Data and Payments
 - 7.3 Lands, Easements, and Surveys
 - 7.4 Change Orders
 - 7.5 Inspections, Tests, and Approvals
 - 7.6 Stop or Suspend Work

- 8. ENGINEER'S Status During Construction
 - 8.1 OWNER'S Representative
 - 8.2 Visits to Site
 - 8.3 Project Representation
 - 8.4 Clarification and Interpretations
 - 8.5 Authorized Variations in Work
 - 8.6 Rejecting Defective Work
 - 8.7 Shop Drawings
 - 8.8 Change Orders
 - 8.9 Payments
 - 8.10 Determinations for Unit Prices
 - 8.11 Decisions on Disputes
 - 8.12 Limitations on ENGINEER'S Responsibilities

- 9. Changes in the Work
 - 9.1 OWNER May Order Changes
 - 9.2 Claims
 - 9.3 Work Not in Contract Documents
 - 9.4 Change Orders
 - 9.5 Notice of Change

- 10. **Change of Contract Price**
 - 10.1 Total Compensation
 - 10.2 Claim for Increase or Decrease in Price
 - 10.3 Value of Work
 - 10.4 Cost of the Work
 - 10.5 Not to Be Included in Cost of the Work
 - 10.6 CONTRACTOR'S Fee
 - 10.7 Itemized Cost Breakdown
 - 10.8 Cash Allowance
 - 10.9 Unit Price Work

- 11. **Change of Contract Time**
 - 11.1 Change Order
 - 11.2 Justification for Time Extension
 - 11.3 Time Limits

- 12. **Warranty and Guarantee; Tests and Inspections; Correction, Removal or Acceptance of Defective Work**
 - 12.1 Warranty and Guarantee
 - 12.2 Access to Work
 - 12.3 Tests and Inspections
 - 12.4 OWNER May Stop Work
 - 12.5 Correction or Removal of Defective Work
 - 12.6 One Year Correction Period
 - 12.7 Acceptance of Defective work
 - 12.8 Owner May Correct Defective Work

- 13. **Payments to CONTRACTOR and Completion**
 - 13.1 Schedule of Values
 - 13.2 Application for Progress Payments
 - 13.3 CONTRACTOR'S Warranty of Title
 - 13.4 Review of Application for Progress Payments
 - 13.5 Partial Utilization
 - 13.6 Final Inspection
 - 13.7 Final Application for Payment
 - 13.8 Final Payment and Acceptance
 - 13.9 CONTRACTOR'S Continuing Obligation
 - 13.10 Waiver of Claims

14. Suspension of Work and Termination

- 14.1 OWNER May Suspend Work
- 14.2 OWNER May Terminate
- 14.3 CONTRACTOR'S Services Terminated
- 14.4 Payment After Termination
- 14.5 CONTRACTOR May Stop or Terminate

15. Miscellaneous

- 15.1 Claims for Injury or Damage
- 15.2 Non-Discrimination in Employment
- 15.3 Temporary Street Closing or Blockage
- 15.4 Percentage of Work Performed by Prime CONTRACTOR
- 15.5 Clean-up
- 15.6 General
- 15.7 Debris Disposal

END OF SECTION

PART IV

GENERAL CONDITIONS

1. DEFINITIONS

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

1.1 Addenda

Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bid Documents or the Contract Documents.

1.2 Agreement

The written agreement between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.

1.3 Application for Payment

The form accepted by ENGINEER which is to be used by CONTRACTOR in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

1.4 Bid

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

1.5 Bidder

An individual, partnership, or corporation, who submit a Bid for a prime contract with the OWNER, for the Work described in the proposed Contract Documents.

1.6 Bonds

Bid, performance and payment bonds and other instruments of security.

1.7 Calendar Day

A calendar day of twenty-four hours measured from midnight to the next midnight shall constitute a day.

1.8 Change Order

A document recommended by ENGINEER, which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion or revision in the Work, or an ~~adjustment in the Contract Price or the Contract Time,~~ issued ~~on or~~ after the Effective Date of the Agreement.

1.9 Contract Documents

The Advertisement for Bidders, Information for Bidders, Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR'S Bid (including documentation accompanying the Bid and any post-bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Bonds, these General Conditions, the Special Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all amendments, modifications and supplements.

1.10 Contract Unit Price

The monies payable by OWNER to CONTRACTOR under the Contract Documents as stated in the Agreement. Unit Prices are to be firm for the term of this Contract.

1.11 Contract Time

The number of consecutive calendar days between the date of issuance of the Notice to Proceed and the contract completion date.

1.12 CONTRACTOR

The person, firm or corporation with whom OWNER has entered into the Agreement.

1.13 Defective

An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER'S recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER).

1.13 Drawings

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

1.15 Effective Date of the Agreement

The date indicated in the Agreement on which it becomes effective.

1.16 ENGINEER

The authorized representative of the responsible division within the Lexington-Fayette Urban County Government.

1.17 Field Order

— A documented order issued by ENGINEER which orders minor changes in the Work, but which does not involve a change in the Contract Price or the Contract Time.

1.18 Giving Notice

Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

1.19 Laws and Regulations

Laws, rules, regulations, ordinances, codes and/or orders.

1.20 Notice of Award

The written notice by OWNER to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

1.21 Notice to Proceed

A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR'S obligations under the Contract Documents.

1.22 OWNER

The Lexington-Fayette Urban County Government.

1.23 Partial Utilization

Placing a portion of the Work in service for the purpose for which it is intended (or related purpose) before reaching Completion for all the Work.

1.24 Project

The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

1.25 Inspector

The authorized representative of the ENGINEER who is assigned to the site or any part thereof.

1.26 Shop Drawings

All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for CONTRACTOR to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.

1.27 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 and certain administrative details applicable thereto.

1.28 Standard Specifications

The "Standard Specifications for Road and Bridge Construction", Transportation Cabinet, Department of Highways, Commonwealth of Kentucky, current edition. MUTCD shall refer to the "Manual of Uniform Traffic Control Devices".

1.29 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.

1.30 Special Conditions

The part of the Contract Documents which amends or supplements these General Conditions.

1.31 Supplier

A manufacturer, fabricator, supplier, distributor, materialman or vendor.

1.32 Underground Facilities

All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

1.33 Unit Price Work

Work to be paid for on the basis of unit prices.

1.34 Work

The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.

1.35 Time Period

When any period of time is referred to in the Contract Documents by days, it will 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 will be omitted from the computation.

2. PRELIMINARY MATTERS

2.1 Delivery of Bonds

When the CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER, such Bonds, Insurance Certificate, and Power of Attorney as CONTRACTOR may be required to furnish.

2.2 Copies of Documents

Owner shall furnish to CONTRACTOR up to three copies (unless otherwise specified in the Special Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

2.3 Commencement of Contract Time; Notice to Proceed

The Contract Time will commence to run on the day specified in the Notice to Proceed.

2.4 Starting the Project

CONTRACTOR shall start to perform the Work on the date when the Contract Time commences to run, but no Work shall be done at the site prior to the date on which the Contract Time commences to run.

2.5 Before Starting Construction

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. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error or discrepancy in the Contract Documents, unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

2.6 Submittal of Schedules

Within ten days after the effective date of the Agreement (unless otherwise specified) CONTRACTOR shall submit to ENGINEER for review:

2.6.1 an estimated progress schedule indicating the starting and completion dates of the various stages of the Work;

2.6.2 a preliminary schedule of Shop Drawing submissions; and

2.6.3 a preliminary schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Price and will subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work which will be confirmed in writing by CONTRACTOR at the time of submission.

2.7 Preconstruction Conference

Before CONTRACTOR starts the Work at the proposed site, a conference attended by CONTRACTOR, ENGINEER, and other appropriate parties will be held to discuss the following issues: (1) The scheduling of the Work to be completed; (2) The procedures for handling shop drawings and other submittals; (3) The processing of applications for payment; (4) The establishment of an understanding among the involved parties in regard to the proposed project; and (5) The establishment of procedures for effectively implementing the DBE participation.

2.8 Finalizing Schedules

At least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER and others as appropriate will be held to finalize the schedules submitted in accordance with paragraph 2.6. The finalized progress schedule will be acceptable to ENGINEER as providing orderly progression of the Work to completion within the Contract Time, but such acceptance will neither impose on ENGINEER responsibility for the progress or scheduling of the Work nor relieve CONTRACTOR from full responsibility thereof. The finalized schedule of Shop Drawing submissions will be acceptable to ENGINEER as providing a workable arrangement for processing the submissions. The finalized schedule of values will be acceptable to ENGINEER as to form and substance.

3. CONTRACT DOCUMENTS: INTENT, CONFLICTS, AMENDING AND REUSE

3.1 General

The Contract Documents comprise the entire agreement between OWNER and CONTRACTOR concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.

3.2 Intent

It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract

Documents as being required to produce the intended result will be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe Work, materials or equipment such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR or ENGINEER, or any of their consultants, agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to ENGINEER, or any of ENGINEER'S consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 8.12.3 or 8.12.4. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in paragraph 8.4.

3.3 Conflicts

If, during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, CONTRACTOR shall so report to ENGINEER in writing at once and before proceeding with the Work affected thereby shall obtain a written interpretation or clarification from ENGINEER; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error or discrepancy in the Contract Documents unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

In resolving such conflicts, errors and discrepancies, the documents shall be given precedence in the following order:

1. Agreement
2. Field and Change Orders
3. Addenda
4. Special Conditions
5. Instruction to Bidders
6. General Conditions
7. Specifications and Drawings

Figure dimension on drawings shall govern over scale dimensions and detailed Drawings shall govern over general Drawings.

3.4 Amending and Supplementing Contract Documents

The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof by means of a Change Order or a Field Order. Contract Price and Contract Time may only be changed by a Change Order.

3.5 Reuse of Documents

Neither CONTRACTOR nor any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with OWNER shall have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER; and they shall not reuse any of them on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaptation by ENGINEER.

4. AVAILABILITY OF LANDS; PHYSICAL CONDITIONS, REFERENCE POINTS

4.1 Availability of Lands

OWNER shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. If CONTRACTOR believes that any delay in OWNER'S furnishing these lands, rights-of-way or easements entitles CONTRACTOR to an extension of the Contract Time, CONTRACTOR may make a claim therefor as provided in Article 11. ENGINEER shall determine if the claim is legitimate or not. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.2 Physical Conditions

4.2.1 Explorations and Reports

Reference is made to the Special Conditions for identification of those reports of explorations and tests of subsurface conditions at the site that have been utilized by ENGINEER in preparation of the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such reports, but not upon non-technical data, interpretations or opinions contained therein or for the completeness thereof for CONTRACTOR'S purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility with respect to subsurface conditions at the site.

4.2.2 Existing Structures

Reference is made to the Special Conditions for identification of those drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities referred to in paragraph 4.3 which are at or contiguous to the site that have been utilized by ENGINEER in preparation of the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such drawings, but not for the completeness thereof for CONTRACTOR'S purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility with respect to physical conditions in or relating to such structures.

4.2.3 Report of Differing Conditions

If CONTRACTOR believes that:

4.2.3.1 any technical data on which CONTRACTOR is entitled to rely as provided in paragraphs 4.2.1 and 4.2.2 is inaccurate, or

4.2.3.2 any physical conditions uncovered or revealed at the site differ materially from that indicated, reflected or referred to in the Contract Documents,

CONTRACTOR shall, promptly after becoming aware thereof and before performing and WORK in connection therewith (except in an emergency) notify OWNER and ENGINEER in writing about the inaccuracy or difference.

4.2.4 ENGINEER'S Review

Engineer will promptly review the pertinent conditions, determine the necessity of obtaining additional explorations or tests with respect thereto and advise CONTRACTOR of ENGINEER'S findings and conclusions.

4.2.5 Possible Document Change

If ENGINEER concludes that there is a material error in the Contract Documents or that because of newly discovered conditions a change in the Contract Documents is required, a Change Order will be issued as provided in Article 10 to reflect and document the consequences of the inaccuracy or difference.

4.2.6 Possible Price and Time Adjustments

In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, or any combination thereof, will be allowable to the extent that they are attributable to any such inaccuracy or difference.

4.3 Physical Conditions-Underground Facilities

4.3.1 Shown or Indicated

The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based on information and data furnished to OWNER or ENGINEER by the owners of such underground facilities or by others. Unless it is otherwise expressly provided in the Special Conditions:

4.3.1.1 OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and,

4.2.1.2 CONTRACTOR shall have full responsibility for reviewing and checking all such information and data; for locating all underground facilities shown or indicated in the Contract Documents; for coordination of the Work with the owners of such underground facilities during construction; and for the safety and protection thereof and repairing any damage thereto resulting from the Work, the cost of all of which will be considered as having been included in the Contract Price.

4.3.2 Not Shown or Indicated

If an underground facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of, CONTRACTOR shall, promptly after becoming aware thereof and before performing any Work affected thereby (except in an emergency), identify the owner of such Underground Facility and give written notice thereof to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the underground facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the Underground Facility, and the Contract Documents will be amended or supplemented to the extent necessary. During such time, CONTRACTOR shall be responsible for the safety and protection of such underground facility. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, to the extent that they are attributable to the existence of any underground facility that was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of.

4.4 Reference Points

OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER'S judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work (unless otherwise specified), shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER

whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by a Registered Land Surveyor.

5. CONTRACTOR'S RESPONSIBILITIES

5.1 Supervision

CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall assure that all CONTRACTOR personnel (including subcontractors, etc.) conduct themselves in a courteous and respectful manner toward the ENGINEER and the general public. Failure to comply with this condition of the Contract will result in immediate suspension of the Work. Following a review by the Commissioner of Public Works, the Contract may be terminated (see GC section 14). CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but CONTRACTOR shall not be 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.

5.2 Superintendence

CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR'S representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

5.3 Labor

CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday or any legal holiday without OWNER'S written consent given after prior written notice to ENGINEER.

5.4 ~~Start-Up and Completion of Work~~

Unless otherwise specified, CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction

equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

5.5 Materials and Equipment

All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable supplier except as otherwise provided in the Contract Documents; but no provision of any such instructions will be effective to assign to ENGINEER, or any of ENGINEER'S consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 8.12.3 or 8.12.4.

5.5.1 Not Clearly Specified or Indicated

In all instances where materials specified are obtainable in different sizes, weights, trade grades, qualities or finishes, etc., whose weights, trade grades, qualities or finishes, etc., are not clearly specified or indicated on the Drawings, the CONTRACTOR shall notify the ENGINEER of all such instances at least five (5) days in advance of receiving the proposals. The Engineer will then determine which size, weight, trade grade, quality, finish, etc., is required.

5.5.2 Coordination of Work

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. The CONTRACTOR shall furnish or require the Subcontractor to furnish such duplicates as will enable the Subcontractors to fit together and execute fully their respective portions of the Work.

5.6 Adjusting Progress Schedule

CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.8) adjustments in the progress schedule to reflect the impact thereon of new developments; these will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the Contract Documents applicable thereto.

~~5.7~~ -Substitutes or "Or-Equal" Items

5.7.1 General

Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular supplier, the naming of the item is intended to establish the type, function, and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other Suppliers may be accepted by OWNER/ENGINEER if sufficient information is submitted by CONTRACTOR to allow OWNER/ENGINEER to determine that the material or equipment proposed is equivalent or equal to that named. The procedure for review by OWNER/ENGINEER will include the following. Requests for review of substitute items of material and equipment will not be accepted by OWNER/ENGINEER from anyone, other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall make written application to OWNER/ENGINEER for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will state that the evaluation and acceptance of the proposed substitute will not prejudice CONTRACTOR'S achievement of completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by OWNER/ENGINEER in evaluating the proposed substitute. OWNER/ENGINEER may require CONTRACTOR to furnish at CONTRACTOR'S expense additional data about the proposed substitute.

5.7.2 Substitutes

If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to OWNER/ENGINEER, if CONTRACTOR submits sufficient information to allow OWNER/ENGINEER to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents. The procedure for review by OWNER/ENGINEER will be similar to that provided in paragraph 5.7.1 as applied by OWNER/ENGINEER.

5.7.3 OWNER/ENGINEER'S Approval

OWNER/ENGINEER will be allowed a reasonable time within which to evaluate each proposed substitute. OWNER/ENGINEER will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without OWNER/ENGINEER'S prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. OWNER may require CONTRACTOR to furnish at CONTRACTOR'S expense a special performance guarantee or other surety with respect to any substitute. OWNER/ENGINEER will record time required by OWNER/ENGINEER and OWNER/ENGINEER'S consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not OWNER/ENGINEER accepts a proposed substitute, CONTRACTOR shall reimburse OWNER for the charges of OWNER/ENGINEER and OWNER/ENGINEER'S consultants for evaluating each proposed substitute.

5.8 Subcontractors, Suppliers, and Others

5.8.1 Acceptable to ENGINEER

CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization (including those acceptable to OWNER and ENGINEER as indicated in paragraph 5.8.2), whether initially or as a substitute, against whom OWNER or ENGINEER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier or other person or organization to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

5.8.2 Objection After Due Investigation

If the Contract Documents require the identity of certain Subcontractors, Suppliers or other persons or organizations (including those who are to furnish the principal items of materials and equipment) to be submitted to OWNER in advance of the specified date prior to the Effective Date of the Agreement for acceptance by OWNER and ENGINEER and if CONTRACTOR has submitted a list thereof, OWNER'S or ENGINEER'S acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the bidding documents or the Contract Documents) of any such Subcontractor, Supplier or other person or organization so identified may be revoked on the basis of reasonable objection after due investigation, in which case CONTRACTOR shall submit an acceptable substitute. No acceptance by OWNER or ENGINEER of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.

5.8.3 Contractor Responsible for Acts of Subcontractors

The CONTRACTOR shall perform on the site, and with its own organization, work equivalent to at least fifty (50) percent of the total amount of Work to be performed under the Contract. This percentage may be reduced by a supplemental agreement to this Contract if, during performing the Work, the CONTRACTOR requests a reduction and the Urban County Engineer determines that the reduction would be to the advantage of the Urban County Government.

The CONTRACTOR shall, at the time he submits his proposal for the Contract, notify the OWNER in writing of the names of Subcontractors proposed for the Work. He shall not employ any Subcontractor without the prior written approval of the OWNER.

CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR'S own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other person or organization, 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 such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

5.8.4 Division of Specifications

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

5.8.5 Agreement Between Contractor and Subcontractors

All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER.

5.8.6 Statements and Comments by CONTRACTOR

Neither the CONTRACTOR, his employees, nor his subcontractors shall at any time make any statement or comment as to the project scope, nature, intention, design, or construction

method to any third party or parties without the explicit written consent of the OWNER.

Any third party requesting such information shall be referred to the OWNER or his representative.

Should there be any change from the original intent of the project as a result of any statement or comment by the contractor, his employees or subcontractors, contractor shall be held liable for any change in the scope, nature, design, or construction method and shall bear the full cost for the previously mentioned changes.

5.9 Patent Fees and Royalties

CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others.

5.10 Permits

Unless otherwise provided in the Special conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or if there are no Bids on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto such as plant investment fees.

5.11 Laws and Regulations

5.11.1 CONTRACTOR to Comply

CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR'S compliance with any Laws and Regulations.

5.11.2 Specifications and Drawings at Variance

If CONTRACTOR observes that the Specifications or Drawings are at variance with any Laws or Regulations, CONTRACTOR shall give ENGINEER prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in paragraph 3.4. If

CONTRACTOR performs any Work knowing or having reason to know that it is contrary to such Laws, or Regulations, and without such notice to ENGINEER, CONTRACTOR shall bear all costs arising therefrom; however, it shall not be CONTRACTOR'S primary responsibility to make certain that the Specifications and Drawings are in accordance with such Laws and Regulations.

Any party, firm or individual submitting a proposal pursuant to invitation must have paid all taxes owed to the Lexington-Fayette Urban County Government at the time the proposal is submitted, and must maintain a "current" status in regard to those taxes throughout the Contract. If applicable, business must be licensed in Fayette County.

5.12 Taxes

CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work. Any party, firm or individual submitting a proposal pursuant to invitation must have paid all taxes owed to the Lexington-Fayette Urban County Government at the time the proposal is submitted, and must maintain a "current" status in regard to those taxes throughout the Contract. If applicable, business must be licensed in Fayette County.

5.13 Use of Premises

5.13.1 Project Site

CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the staging areas or work site areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the Work. Should any claim be made against OWNER or ENGINEER by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim by arbitration or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold OWNER and ENGINEER harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against OWNER or ENGINEER.

to the extent based on a claim arising out of CONTRACTOR'S performance of the Work.

5.13.2 Clean UP

During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work, CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by OWNER. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.

5.13.1 Loading of Structures

CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

5.14 Record Drawings

CONTRACTOR shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Change Orders, Field Orders and written interpretations and clarifications (issued pursuant to paragraph 9.4) in good order and annotated to show all changes made during construction. These record documents together with all approved samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, samples and Shop Drawings will be delivered to ENGINEER for OWNER.

5.15 Shop Drawings and Samples

5.15.1 Shop Drawing Submittals

After checking and verifying all field measurements and after complying with applicable procedures specified, CONTRACTOR shall submit to ENGINEER for review and approval in accordance with the accepted schedule of Shop Drawing submissions (see paragraph 2.8), or for other appropriate action if so indicated in the Special Conditions, five copies (unless otherwise specified) of all Shop Drawings, which will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR'S responsibilities under the Contract Documents with respect to the review of the submission. All submissions will be identified as ENGINEER may require. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable ENGINEER to review the information as required.

5.15.2 Sample Submittals

CONTRACTOR shall also submit to ENGINEER for review and 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 accompanied by a specific written indication that CONTRACTOR has satisfied CONTRACTOR'S responsibilities under the Contract Documents with respect to the review of the submission and will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended.

5.15.3 Review by CONTRACTOR

Before submission of each Shop Drawing or sample CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed or coordinated each Shop Drawing or sample with other Shop Drawings and samples and with the requirements of the Work and the Contract Documents.

5.15.4 Notice of Variation

At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of each variation that the Shop Drawings or samples may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to ENGINEER for review and approval of each such variation.

5.15.5 ENGINEER'S Approval

ENGINEER will review and approve with reasonable promptness Shop Drawings and samples, but ENGINEER'S review and approval will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction (except where a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make corrections required by ENGINEER, and shall return the required number of corrected copies of Shop Drawings and submit, as required, new samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

5.15.6 Responsibility for Errors and Omissions

ENGINEER'S review and approval of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER'S attention to each such variation at the time of submission as required by paragraph 5.15.4 and ENGINEER has given written approval of each such variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing or sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the Shop Drawings or from responsibility for having complied with the provisions of paragraph 5.15.3.

5.15.7 Cost of Related Work

Where a Shop or sample is required by the Specifications, any related Work performed prior to ENGINEER'S review and approval of the pertinent submission will be the sole expense and responsibility of CONTRACTOR.

5.16 Continuing the Work

CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolutions of any disputes or disagreements, except as permitted by paragraph 14.5 or as CONTRACTOR and OWNER may otherwise agree in writing.

5.17 Erosion and Sediment Control

5.17.1 General Environmental Requirements

The CONTRACTOR and Subcontractors performing work on projects on behalf of the OWNER shall comply with all applicable federal, state, and local environmental regulations and all requirements and conditions set forth in "special" permits including but not limited to Corp of Engineers 404 permits, 401 Water Quality Certifications, Stream Crossing and Floodplain Encroachment Permits.

Any fines or penalties resulting from the failure to comply with the terms of the federal, state or local permits or perform necessary corrective action are solely the obligation of the CONTRACTOR.

5.17.2 Stormwater Pollution Prevention

A. The CONTRACTOR shall exercise due care to prevent or minimize any damage to any stream or wetland from pollution by debris, sediment or other material. The operation of equipment and/or materials in a jurisdictional wetland is expressly prohibited. Water that has been used for washing or processing, or that contains oils, sediments or other pollutants shall not be discharged from the job site. Such waters shall be

collected and properly disposed of by the CONTRACTOR in accordance with applicable local, state and federal law.

B. The CONTRACTOR is solely responsible for securing all required state and local permits associated with stormwater discharges from the project including, but not necessarily limited to the KY Notice of Intent to Disturb (NOI) for Coverage of Storm Water Discharges Associated with Construction Activities under the KPDES Storm Water General Permit KYR100000 and the LFUCG, Land Disturbance Permit. Permit application preparation and all required documentation are the responsibility of the CONTRACTOR. The CONTRACTOR is solely responsible for maintaining compliance with the stormwater pollution prevention plan or erosion and sediment control plan and ensuring the following:

- a. That the Stormwater Pollution Prevention Plan (SWPPP) or erosion control plan is current and available for review on site;
- b. That any and all stormwater inspection reports required by the permit are conducted by qualified personnel and are available for review onsite; and
- c. That all best management practices (BMPs) are adequately maintained and effective at controlling erosion and preventing sediment from leaving the site.

C. The CONTRACTOR shall provide the necessary equipment and personnel to perform any and all emergency measures that may be required to contain any spillage or leakage and to remove materials, soils or liquids that become contaminated. The collected spill material shall be properly disposed at the CONTRACTOR's expense.

D. Upon completion of the work and with the concurrence of the OWNER, the CONTRACTOR must file a Notice of Termination (NOT) of Coverage Under the KPDES General Permit for Storm Water Discharges Associated with Construction Activity with the appropriate local and state authorities.

E. Any fines or penalties resulting from the failure to comply with the terms of the state or local stormwater permits or perform necessary corrective action are solely the obligation of the CONTRACTOR.

6. OTHER WORK

~~6.1~~ Related Work at Site

OWNER may perform other work related to the Project at the site by OWNER'S own forces, have other work performed by utility owners or let other direct contracts

therefor which shall contain General Conditions similar to these. If the fact that such other work is to be performed was not noted in the Contract Documents, written notice thereof will be given to CONTRACTOR prior to starting any such other work; and, if such performance will involve additional expense to CONTRACTOR or requires additional time, a Change Order to the Contract will be negotiated.

6.2 Other Contractors or Utility Owners

CONTRACTOR shall afford each utility owner and other contractor who is a party to such a direct contract (or OWNER, if OWNER is performing the additional work with OWNER'S employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the Work with theirs. CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with 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 the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

6.3 Delays Caused by Others

If any part of CONTRACTOR'S Work depends for proper execution or results upon the work of any such other contractor or utility owner (or OWNER), CONTRACTOR shall inspect and promptly report to ENGINEER in writing any delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. CONTRACTOR'S failure so to report will constitute an acceptance of the other work as fit and proper for integration with CONTRACTOR'S Work except for latent or non-apparent defects and deficiencies in the other work.

6.4 Coordination

If OWNER contracts with others for the performance of other work on the Project at the site, the person or organization who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified in the Special Conditions, and the specific matters to be covered by such authority and responsibility will be itemized, and the extent of such authority and responsibilities will be provided, in the Special Conditions.

7. OWNER'S RESPONSIBILITIES

7.1 Communications

OWNER shall issue all communications to CONTRACTOR through ENGINEER.

7.2 Data and Payments

OWNER shall furnish the data required of OWNER under the Contract Documents promptly after they are due.

7.3 Lands, Easements, and Surveys

OWNER'S duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER'S identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the site and in existing structures which have been utilized by ENGINEER in preparing the Drawings and Specifications.

7.4 Change Orders

OWNER is obligated to execute Change Orders as indicated in paragraph 9.4.

7.5 Inspections, Tests and Approvals

OWNER'S responsibility in respect to certain inspections, tests and approvals is set forth in paragraph 13.3.

7.6 Stop or Suspend Work

In connection with OWNER'S right to stop Work or suspend Work, see paragraph 12.4 and 14.1 Paragraph 14.2 deals with OWNER'S rights to terminate services of CONTRACTOR under certain circumstances.

8. ENGINEER'S STATUS DURING CONSTRUCTION

8.1 OWNER'S Representative

ENGINEER will be OWNER'S representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER'S representative during construction are set forth in the Contract Documents and shall not be extended without written consent of OWNER and ENGINEER.

8.2 Visits to Site

ENGINEER will make visits to the site at intervals appropriate to the various stages of construction 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. ENGINEER will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. ENGINEER'S efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform to the Contract Documents. On the basis of such visits and on-site observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defects and deficiencies in the Work.

8.3 Project Representation

ENGINEER will provide an Inspector to assist ENGINEER in observing the performance of the Work. If OWNER designates another agent to represent OWNER at the site who is not ENGINEER'S agent or employee, the duties, responsibilities and limitations of authority of such other person will be as provided in the Special Conditions.

8.4 Clarifications and Interpretations

ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents.

8.5 Authorized Variations in Work

ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order.

8.6 Rejecting Defective Work

ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, and will also have authority to require special inspection or testing of the Work as provided in paragraph 12.3, whether or not the Work is fabricated, installed or completed.

8.7 Shop Drawings

In connection with ENGINEER'S responsibility for Shop Drawings and samples, see paragraphs 5.15.1 through 5.16 inclusive.

8.8 Change Orders

In connection with ENGINEER'S responsibilities as to Change Orders, see Articles 10, 11 and 12.

8.9 Payments

In connection with ENGINEER'S responsibilities with respect to Applications for Payment, etc., see Article 13.

8.10 Determinations for Unit Prices

ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR.

ENGINEER will review with CONTRACTOR ENGINEER'S preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise).

8.11 Decision on Disputes

ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and claims under Articles 10 and 11 in respect of changes in the Contract Price or Contract Time will be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph, which ENGINEER will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter will be delivered to ENGINEER promptly (but in no event later than thirty days) after the occurrence of the event giving rise thereto, and written supporting data will be submitted to ENGINEER within sixty days after such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim.

8.12 Limitations on Engineer's Responsibilities

8.12.1 CONTRACTOR, Supplier, or Surety

Neither ENGINEER'S authority to act under this Article 8 or elsewhere in the Contract Documents nor any decision made by ENGINEER 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 Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

8.12.2 To Evaluate the Work

Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed", "as approved" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper", or "satisfactory" or adjectives or like "effect" or "import" are used to describe a requirement, direction, review or judgment of ENGINEER as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign ENGINEER any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 8.12.3 or 8.12.4.

8.12.3 CONTRACTOR'S Means, Methods, Etc.

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 ENGINEER will not be responsible for CONTRACTOR'S failure to perform or furnish the Work in accordance with the Contract Documents.

8.12.4 Acts of Omissions of CONTRACTOR

ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

9. CHANGES IN THE WORK

9.1 OWNER May Order Change

Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by a Change Order. Upon receipt of such notice, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

9.2 Claims

Claims for an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a Change Order will be settled as provided for in Article 10 or Article 11.

9.3 Work Not in Contract Documents

CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in paragraph 3.4, except in the case of an emergency and except in the case of uncovering Work as provided in paragraph 12.3.4.

9.4 Change Orders

OWNER and CONTRACTOR shall execute appropriate Change Orders covering:

9.4.1 changes in the Work which are ordered by OWNER pursuant to paragraph 9.1, are required because of acceptance of defective Work under paragraph 12.7 or corrective defective Work under paragraph 12.8, or are agreed to by the parties;

9.4.2 changes in the Contract Price or Contract Time which are agreed to by the parties; and

9.4.3 changes in the Contract Price or Contract Time which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 8.11; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and REGULATIONS, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 5.16.

9.5 Notice of Change

If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Time) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR'S responsibility, and the amount of each applicable Bond will be adjusted accordingly.

10. CHANGE OF CONTRACT PRICE

10.1 Total Compensation

The Contract Price constitutes the total compensation (subject to authorized adjustments) 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.

10.2 Claim for Increase or Decrease in Price

The Contract Price may only be changed by a Change Order. Any claim for an increase or decrease in the Contract Price shall be based on written notice delivered by the CONTRACTOR to the ENGINEER promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within sixty days after such occurrence (unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by CONTRACTOR'S written statement that the amount claimed covers all known amounts (direct, indirect, and consequential) to which the CONTRACTOR is entitled as a result of the occurrence of said event.

10.3 Value of Work

The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

10.3.1 Unit Prices

Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved (subject to the provisions of paragraphs 10.9.1. through 10.9.3, inclusive).

10.3.2 Lump Sum

By mutual acceptance of a lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 10.6.2.1).

10.3.3 Cost Plus Fee

On the basis of the Cost of the Work (determined as provided in paragraphs 10.4 and 10.5) plus a CONTRACTOR'S fee for overhead and profit (determined as provided in paragraphs 10.6 and 10.7).

10.4 Cost of the Work

The term Cost of the Work means the sum of all costs necessarily incurred and paid by 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 10.5:

10.4.1 Payroll Costs

Payroll costs 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 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, workers' or workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site. The expenses of performing Work after regular working hours, on Saturday, Sunday or legal holidays, shall be included in the above to the extent authorized by OWNER.

10.4.2 Materials and Equipment Costs

Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services 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.

10.4.3 Subcontractor Costs

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 CONTRACTOR 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 Subcontractor's Cost of the Work shall be determined in the same manner as CONTRACTOR'S Cost of the Work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

10.4.4 Special Consultant Costs

Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys and accountants) employed for services specifically related to the Work.

10.4.5 Supplemental Costs

10.4.5.1 The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR'S employees incurred in discharge of duties connected with the Work.

10.4.5.2 Cost, 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 workers, 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.

10.4.5.3 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, loading, unloading, installation, dismantling and removal shall be 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.

10.4.5.4 Sales, consumer, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

10.4.5.5 Deposits lost for causes other than 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, and royalty payments and fees for permits and licenses.

10.4.5.6 Losses and damages (and related expenses), not compensated by insurance or otherwise, to the Work or otherwise sustained by CONTRACTOR in connection with the performance and furnishing of the Work (except losses and damages within the deductible amounts of property insurance established by OWNER), 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, CONTRACTOR shall be paid a fee proportionate to that stated in paragraph 10.6.2 for services.

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

10.4.5.8 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.

10.4.5.9 Cost of premiums for additional Bonds and insurance required because of changes in the Work and premiums for property insurance coverage within the limits of the deductible amounts established by OWNER.

10.5 Not to Be Included in Cost of the Work

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

10.5.1 Costs of Officers and Executives

Payroll costs and other compensation of CONTRACTOR'S officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in CONTRACTOR'S principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 10.4.1 or specifically covered by paragraph 10.4.4 - all of which are to be considered administrative costs covered by the CONTRACTOR'S fee.

10.5.2 Principal Office

Expenses of CONTRACTOR'S principal and branch offices other than CONTRACTOR'S office at the site.

10.5.3 Capital Expense

Any part of CONTRACTOR'S capital expenses, including interest on CONTRACTOR'S capital employed for the Work and charges against CONTRACTOR for delinquent payments.

10.5.4 Bonds and Insurance

Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by subparagraph 10.4.5.9 above).

10.5.5 Costs Due to Negligence

Costs 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.

10.5.6 Other Costs

Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 10.4.

10.6 Contractor's Fee

The CONTRACTOR'S Fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

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

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

10.6.2.1 for costs incurred under paragraphs 10.4.1 and 10.4.2, the CONTRACTOR'S fee shall be fifteen percent;

10.6.2.2 for costs incurred under paragraph 10.4.3, the CONTRACTOR'S fee shall be five percent; and if a subcontract is on the basis of Cost of the Work Plus a fee, the maximum allowable to CONTRACTOR on account of overhead and profit of all Subcontractors shall be fifteen percent;

10.6.2.3 no fee shall be payable on the basis of costs itemized under paragraphs 10.4.4, 10.4.5 and 10.5;

10.6.2.4 the amount of credit to be allowed by CONTRACTOR to OWNER for any such change which results in a net decrease in cost will be the amount of the actual net decrease plus a deduction in CONTRACTOR'S Fee by an amount equal to ten percent of the net decrease; and

10.6.2.5 when both additions and credits are involved in any one change, the adjustment in CONTRACTOR'S fee shall be computed on the basis of the net change in accordance with paragraphs 10.6.2.1 through 10.6.2.4, inclusive.

10.7 Itemized Cost Breakdown

Whenever the cost of any Work is to be determined pursuant to paragraph 10.4 or 10.5, CONTRACTOR will submit in form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

10.8 Cash Allowances

It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be done by such Subcontractors or Suppliers and for such sums within the limit of the allowances as may be acceptable to ENGINEER, CONTRACTOR agrees that:

10.8.1 Materials and Equipment

The allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

10.8.2 Other Costs

CONTRACTOR'S costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances. No demand for additional payment on account of any thereof will be valid.

10.8.3 Change Order

Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

10.9 Unit Price Work

10.9.1 General

Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER in accordance with Paragraph 8.10.

10.9.2 Overhead and Profit

Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR'S overhead and profit for each separately identified item.

10.9.3 Claim for Increase in Unit Price

Where the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement and there is no corresponding adjustment with respect to any other item of Work and if CONTRACTOR believes that CONTRACTOR has incurred additional expense as a result thereof, CONTRACTOR may make a claim for an increase in the Contract Price in accordance with Article 10.

11. CHANGE OF CONTRACT TIME

11.1 Change Order

The Contract Time may only be changed by a Change Order. Any claim for an extension or shortening of the Contract Time shall be based on written notice

delivered to ENGINEER promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within sixty days after such occurrence (unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by ENGINEER in accordance with paragraph 8.11. No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this paragraph 11.1.

11.2 Justification for Time Extensions

The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if a claim is made therefore as provided in paragraph 11.1. Such delays shall include, but not be limited to, acts or neglect by OWNER or others performing additional work as contemplated by Article 6, or to fires, floods, labor disputes, epidemics, abnormal weather conditions or acts of God.

11.3 Time Limits

All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 11 shall not exclude recovery for damages (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court costs) for delay by either party.

12. WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

12.1 Warranty and Guarantee

CONTRACTOR warrants and guarantees to OWNER and ENGINEER that all Work will be in accordance with the Contract Documents and will not be defective. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this Article 12.

12.2 Access to Work

ENGINEER and ENGINEER'S representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide proper and safe conditions for such access.

12.3 Tests and Inspections

12.3.1 Timely Notice

CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests or approvals.

12.3.2 Requirements and Responsibilities

The ENGINEER may require such inspection and testing during the course of the Work as he/she deems necessary to ascertain and assure the integrity and acceptable quality of the materials incorporated and the work performed. Inspection presence may be either full-time or intermittent, and neither the presence nor absence at any time of the ENGINEER or the INSPECTOR shall relieve the CONTRACTOR of sole responsibility for the acceptability and integrity of the Work or any part thereof.

The costs of sampling, testing, and inspection on-site to ascertain acceptability of the Work and materials will be borne by the OWNER except as otherwise provided. The OWNER will select a testing laboratory to perform such sampling and testing. Sampling and/or testing required by the CONTRACTOR or necessitated by failure of Work or materials to meet the above acceptability test shall be at the expense of the CONTRACTOR.

Inspection services may be performed by the employees of the OWNER or by others selected or designated by the OWNER or the ENGINEER.

Sampling and/or testing required for manufacturing quality and/or process control, for certification that raw mineral materials or manufactured products are the quality specified in the contract, or to assure the acceptability for incorporation into the Work shall be borne by the CONTRACTOR or the material supplier.

Cost for inspection, sampling, testing, and approvals required by the laws or regulations of any public body having competent jurisdiction shall be borne by the CONTRACTOR or the material supplier.

Sampling and testing will be in accord with pertinent codes and regulations and with appropriate standards of the American Society of Testing Materials or other specified standards.

12.3.3 On-Site Construction Test and Other Testing

All inspections, tests or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations acceptable to OWNER and CONTRACTOR (or by ENGINEER if so specified).

12.3.4 Covered Work

If any Work (including the work of others) that is to be inspected, tested or approved is covered without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation. Such uncovering shall be at CONTRACTOR'S expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR'S intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

12.3.5 CONTRACTOR'S Obligation

Neither observations by ENGINEER nor inspections, tests or approvals by others shall relieve CONTRACTOR from CONTRACTOR'S obligations to perform the Work in accordance with the Contract Documents.

12.4 **OWNER May Stop the Work**

If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, 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.

12.5 **Correction or Removal of Defective Work**

If required by ENGINEER, CONTRACTOR shall promptly, as directed, either correct all 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. CONTRACTOR shall bear all direct, indirect and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) made necessary thereby.

12.6 **One Year Correction Period**

If within one year after the date of Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of 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-defective Work. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all direct, indirect and consequential costs of such removal and replacement (including but not limited to fees and charges of engineers, architects, attorneys and

other professionals) will be paid by CONTRACTOR. In special circumstances where a particular item of equipment is placed in continuous service before Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Change Order.

12.7 Acceptance of Defective Work

If, instead of requiring correction or removal and replacement of defective Work, OWNER prefers to accept it, OWNER may do so. CONTRACTOR shall bear all direct, indirect and consequential costs attributable to OWNER'S evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness and to include but not be limited to fees and charges of engineers, architects, attorneys and other professionals).

12.8 OWNER May Correct Defective Work

If CONTRACTOR fails within a reasonable time after written notice of ENGINEER to proceed to correct and to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 12.5, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR'S services related thereto, take possession of CONTRACTOR'S tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER'S representatives, agents and employees such access to the site as may be necessary to enable OWNER to exercise the rights and remedies under this paragraph. All direct, indirect and consequential costs of OWNER in exercising such rights and remedies will be charged against CONTRACTOR in an amount approved as to reasonableness by ENGINEER, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. Such direct, indirect and consequential costs will include but not be limited to fees and charges of engineers, architects, attorneys and other professionals, all court costs and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR'S defective Work. CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the Work-attributable to the exercise by OWNER of OWNER'S rights and remedies hereunder.

13. PAYMENTS TO CONTRACTOR AND COMPLETION

13.1 Schedule of Values

The schedule of values established as provided in paragraph 2.8 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

13.2 Application for Progress Payment

At least ten days before each progress payment is scheduled (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 supporting documentation as is required by the Contract Documents. 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 a bill of sale, invoice or other documentation warranting that OWNER has received the materials and equipment free and clear of all liens, charges, security interests and encumbrances (which are hereinafter in these General Conditions referred to as "Liens") and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect OWNER'S interest therein, all of which will be satisfactory to OWNER. OWNER shall, within thirty (30) calendar days of presentation to him of an approved Application for Payment, pay CONTRACTOR the amount approved by ENGINEER.

13.3 CONTRACTOR'S Warranty of Title

CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

13.4 Review of Applications for Progress Payment

13.4.1 Submission of Application for Payment

ENGINEER will, after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER, or return the Application to CONTRACTOR indicating in writing ENGINEER'S reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

—13.4.2 ENGINEER'S Recommendation

ENGINEER may refuse to recommend the whole or any part of any payment, if, in ENGINEER'S opinion, it would be incorrect to make such

representations to OWNER. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in ENGINEER'S opinion to protect OWNER from loss because:

13.4.2.1 the Work is defective, or completed Work has been damaged requiring correction or replacement;

13.4.2.2 the Contract Price has been reduced by Written Amendment or Change Order;

13.4.2.3 OWNER has been required to correct defective Work or complete Work in accordance with paragraph 12.8; or

13.4.2.4 of ENGINEER'S actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.2.1 through 14.2.9 inclusive.

13.5 Partial Utilization

OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and has been completed. If CONTRACTOR agrees, CONTRACTOR will certify to OWNER that said part of the Work is complete and request that a Certificate of Completion be issued for that part of the Work.

13.6 Final Inspection

Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will make a final inspection with 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.

13.7 Final Application for Payment

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, marked-up record documents (as provided in paragraph 5.14) and other documents - all as required by the Contract Documents, and after ENGINEER has indicated that the Work is acceptable (subject to the provisions of paragraph 13.10), CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to OWNER) of all Liens arising out of or filed in connection with the Work. 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 filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER'S property might in any way be responsible, have been paid or otherwise satisfied; and consent of the surety, if any, to final payment. If any Subcontractor or Supplier fails to furnish a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

13.8 Final Payment and Acceptance

13.8.1 ENGINEER'S Approval

If, on the basis of ENGINEER'S observation of the Work during construction and final inspection, and ENGINEER'S review of the final Application for Payment and accompanying documentation - all as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR'S other obligations under the Contract Documents have been fulfilled, ENGINEER will, after receipt of the final Application for Payment, indicate in writing ENGINEER'S recommendation 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, subject to the provisions of paragraph 13.10. Otherwise, ENGINEER will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application.

13.8.2 Delay in Completion of Work

If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, OWNER shall, upon receipt of CONTRACTOR'S final Application for Payment and recommendation of 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 to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 10 of Part II, Information for Bidders, 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 CONTRACTOR to ENGINEER with the Application for 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.

13.8.3 Retainage

Retainage is not applicable to this project.

13.9 CONTRACTOR'S Continuing Obligation

CONTRACTOR'S obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by ENGINEER, nor the issuance of a certificate of Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor any review and approval of a Shop Drawing or sample submission, nor any correction of defective Work by OWNER will constitute an acceptance of Work not in accordance with the Contract Documents or a release of CONTRACTOR'S obligation to perform the Work in accordance with the Contract Documents (except as provided in paragraph 13.10).

13.10 Waiver of Claims

The making and acceptance of final payment will constitute:

13.10.1 a waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled Liens, from defective Work appearing after final inspection or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it will not constitute a waiver by OWNER of any rights in respect of CONTRACTOR'S continuing obligations under the Contract Documents; and

13.10.2 a waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

14. SUSPENSION OF WORK AND TERMINATION

14.1 OWNER May 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 days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if CONTRACTOR makes an approved claim therefor as provided in Articles 10 and 11.

14.2 OWNER May Terminate

The OWNER may terminate the Work upon the occurrence of any one or more of the following events:

14.2.1 if CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by

filing a petition or otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency;

14.2.2 if a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

14.2.3 if CONTRACTOR makes a general assignment for the benefit of creditors;

14.2.4 if a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR'S creditors;

14.2.5 if CONTRACTOR admits in writing an inability to pay its debts generally as they become due;

14.2.6 if CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.8 as revised from time to time);

14.2.7 if CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;

14.2.8 if CONTRACTOR disregards the authority of ENGINEER, or

14.2.9 if CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;

OWNER may, after giving CONTRACTOR (and the surety) seven days' written notice and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR'S tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the

Work as OWNER may deem expedient. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct, indirect and consequential costs of completing the Work (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) such excess will be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such costs incurred by OWNER will be approved as to reasonableness by ENGINEER and incorporated in a Change Order, but when exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

14.2.10 If safety violations are observed and brought to the Contractors attention and Contractor fails to take immediate corrective measures or for any repeat of similar safety violations, Owner will order an immediate termination of contract. Note: it is the Contractor's responsibility to know proper safety measures as they pertain to construction and OSHA.

14.2.11 This contract may be canceled by either party thirty (30) days after delivery by canceling party of written notice of intent to cancel to the other contracting party.

14.2.12 This contract may be canceled by the Lexington-Fayette Urban County Government if it is determined that the Bidder has failed to perform under the terms of this agreement, such cancellation to be effective upon receipt of written notice of cancellation by the Bidder.

14.3 CONTRACTOR'S Services Terminated

Where CONTRACTOR'S services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

14.4 Payment After Termination

Upon seven days' written notice to CONTRACTOR, OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, CONTRACTOR shall be paid for all Work executed and any expense sustained plus reasonable termination expenses, which will include, but not be limited to, direct, indirect and consequential costs (including, but not limited to, fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs).

14.5 CONTRACTOR May Stop Work or Terminate

If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within sixty days after it is submitted, or OWNER fails for sixty days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days' written notice to OWNER and ENGINEER, terminate the Agreement and recover from OWNER payment for all Work executed and any expense sustained plus reasonable termination expenses. 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 seven days' written notice to OWNER and ENGINEER stop the Work until payment of all amounts then due. The provisions of this paragraph shall not relieve CONTRACTOR of the obligations under paragraph 5.16 to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with OWNER.

15. MISCELLANEOUS

15.1 Claims for Injury or Damage

Should OWNER or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph 15.1 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

15.2 Non-Discrimination in Employment

The CONTRACTOR shall comply with the following requirements prohibiting discrimination:

15.2.1 That no person (as defined in **KRS 344.010**) shall bid on Lexington-Fayette Urban County Government construction projects, or bid to furnish materials or supplies to the Lexington-Fayette Urban County Government, if, within six months prior to the time of opening of bids, said person shall have been found, by declaratory judgment action in Fayette Circuit Court, to be presently engaging in an unlawful practice, as hereinafter defined. Such declaratory judgment action may be brought by an aggrieved individual or upon an allegation that an effort at conciliation pursuant to **KRS 344.200** has been attempted and failed, by the Lexington-Fayette County Human Rights Commission.

15.2.2 That it is an unlawful practice for an employer:

15.2.2.1 to fail or refuse to hire, or to discharge any individual or otherwise to discriminate against an individual, with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, sex, age, or national origin; or

15.2.2.2 to limit, segregate or classify his employees in any way which would deprive or tend to deprive an individual of employment opportunities or otherwise adversely affect his status as an employee because of such individual's sex, race, color, religion, age, or national origin.

15.2.3 That it is an unlawful practice for an employer, labor organization, or joint-labor management committee controlling apprenticeship or other training or retraining, including on-the-job training programs to discriminate against an individual because of his race, color, religion, sex, age, or national origin in admission to, or employment in, any program established to provide apprenticeship or other training.

15.2.4 That a copy of this Ordinance shall be furnished all suppliers and made a part of all bid specifications.

15.2.5 This Ordinance shall take effect after it is signed, published and recorded, as required by law.

15.3 Temporary Street Closing or Blockage

The CONTRACTOR will notify the ENGINEER at least 72 hours prior to making any temporary street closing or blockage. This will permit orderly notification to all concerned public agencies. Specific details and restrictions on street closure or blockage are contained in the Special Conditions.

15.4 Percentage of Work Performed by prime CONTRACTOR

The CONTRACTOR shall perform on site, and with its own organization, Work equivalent to at least fifty (50%) percent of the total amount of Work to be performed under the Contract. This percentage may be reduced by a supplemental agreement to this Contract if, during performing the Work, the CONTRACTOR requests a reduction and the ENGINEER determines that the reduction would be to the advantage of the OWNER.

15.5 Clean-up

Cleanup shall progress, to the greatest degree practicable, throughout the course of the Work. The Work will not be considered as completed, and final payment will not be made, until the right-of-way and all ground occupied or affected by the

Contractor in connection with the Work has been cleared of all rubbish, equipment, excess materials, temporary structures, and weeds. Rubbish and all waste materials of whatever nature shall be disposed of, off of the project site, in an acceptable manner. All property, both public and private, which has been damaged in the prosecution of the Work, shall be restored in an acceptable manner. All areas shall be draining, and all drainage ways shall be left unobstructed, and in such a condition that drift will not collect or scour be induced.

15.6 General

The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 12.1, 12.3.5, 13.3, and 15.2 and all of the rights and remedies available to OWNER and ENGINEER thereunder, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. All representations, warranties and guarantees made in the Contract Documents will survive final payment and termination or completion of the Agreement.

15.7 Debris Disposal

For all LFUCG projects any trash, construction demolition debris, yard waste, dirt or debris of any kind that is removed from the project site must be disposed of in accordance with local, state, and federal regulations. The disposal site or facility must be approved in advance by the LFUCG and disposal documentation is required. The Contractor will be responsible for payment of any fines associated with improper disposal of material removed from the project site.

END OF SECTION

PART V

SPECIAL CONDITIONS

INDEX

1. REQUIRED RISK MANAGEMENT PROVISIONS
2. BLASTING
3. FAILURE TO COMPLETE WORK ON TIME
4. KY DIVISION OF WATER/EPA PERMITS
5. PAYMENT FOR COST OF PERFORMANCE AND PAYMENT BONDS
6. SPECIAL UTILITY NOTES

1. RISK MANAGEMENT PROVISIONS

INSURANCE AND INDEMNIFICATION

INDEMNIFICATION AND HOLD HARMLESS PROVISION

- (1) It is understood and agreed by the parties that Contractor hereby assumes the entire responsibility and liability for any and all damages to persons or property caused by or resulting from or arising out of any act or omission on the part of Contractor or its employees, agents, servants, owners, principals, licensees, assigns or subcontractors of any tier (hereinafter "CONTRACTOR") under or in connection with this agreement and/or the provision of goods or services and the performance or failure to perform any work required thereby.
- (2) CONTRACTOR shall indemnify, save, hold harmless and defend the Lexington-Fayette Urban County Government and its elected and appointed officials, employees, agents, volunteers, and successors in interest (hereinafter "LFUCG") from and against all liability, damages, and losses, including but not limited to, demands, claims, obligations, causes of action, judgments, penalties, fines, liens, costs, expenses, interest, defense costs and reasonable attorney's fees that are in any way incidental to or connected with, or that arise or are alleged to have arisen, directly or indirectly, from or by CONTRACTOR's performance or breach of the agreement and/or the provision of goods or services provided that: (a) it is attributable to personal injury, bodily injury, sickness, or death, or to injury to or destruction of property (including the loss of use resulting therefrom), or to or from the negligent acts, errors or omissions or willful misconduct of the CONTRACTOR; and (b) not caused solely by the active negligence or willful misconduct of LFUCG.
- (3) In the event LFUCG is alleged to be liable based upon the above, CONTRACTOR shall defend such allegations and shall bear all costs, fees and expenses of such defense, including but not limited to, all reasonable attorneys' fees and expenses, court costs, and expert witness fees and expenses, using attorneys approved in writing by LFUCG, which approval shall not be unreasonably withheld.
- (4) These provisions shall in no way be limited by any financial responsibility or insurance requirements, and shall survive the termination of this agreement.
- (5) LFUCG is a political subdivision of the Commonwealth of Kentucky. CONTRACTOR acknowledges and agrees that LFUCG is unable to provide indemnity or otherwise save, hold harmless, or defend the CONTRACTOR in any manner.

FINANCIAL RESPONSIBILITY

BIDDER/CONTRACTOR understands and agrees that it shall, prior to final acceptance of its bid and the commencement of any work, demonstrate the ability

to assure compliance with the above Indemnity provisions and these other risk management provisions.

INSURANCE REQUIREMENTS

YOUR ATTENTION IS DIRECTED TO THE INSURANCE REQUIREMENTS BELOW, AND YOU MAY NEED TO CONFER WITH YOUR INSURANCE AGENTS, BROKERS, OR CARRIERS TO DETERMINE IN ADVANCE OF SUBMISSION OF A RESPONSE THE AVAILABILITY OF THE INSURANCE COVERAGES AND ENDORSEMENTS REQUIRED HEREIN. IF YOU FAIL TO COMPLY WITH THE INSURANCE REQUIREMENTS BELOW, YOU MAY BE DISQUALIFIED FROM AWARD OF THE CONTRACT.

Required Insurance Coverage

BIDDER/CONTRACTOR shall procure and maintain for the duration of this contract the following or equivalent insurance policies at no less than the limits shown below and cause its subcontractors to maintain similar insurance with limits acceptable to LFUCG in order to protect LFUCG against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by CONTRACTOR. The cost of such insurance shall be included in any bid:

<u>Coverage</u>	<u>Limits</u>
General Liability aggregate (Insurance Services Office Form CG 00 01)	\$1 million per occurrence, \$2 million or \$2 million combined single limit
Commercial Automobile Liability occurrence (Insurance Services Office Form CA 0001)	combined single, \$1 million per
Worker's Compensation	Statutory
Employer's Liability	\$100,000.00
Excess/Umbrella Liability	\$5 million per occurrence

The policies above shall contain the following conditions:

- a. All Certificates of Insurance forms used by the insurance carrier shall be properly filed and approved by the Department of Insurance for the Commonwealth of Kentucky (DOI). LFUCG shall be named as an additional insured in the General Liability Policy and Commercial Automobile Liability Policy using the Kentucky DOI approved forms.
- b. The General Liability Policy shall be primary to any insurance or self-insurance retained by LFUCG.

- c. The General Liability Policy shall include a Products and Completed Operations endorsement or Premises and Operations Liability endorsement unless deemed not to apply by LFUCG.
- d. The General Liability Policy shall include an Explosion-Collapse Underground (XCU) endorsement.
- e. LFUCG shall be provided at least 30 days advance written notice via certified mail, return receipt requested, in the event any of the required policies are canceled or non-renewed.
- f. Said coverage shall be written by insurers acceptable to LFUCG and shall be in a form acceptable to LFUCG. Insurance placed with insurers with a rating classification of no less than Excellent (A or A-) and a financial size category of no less than VIII, as defined by the most current Best's Key Rating Guide shall be deemed automatically acceptable.

Renewals

After insurance has been approved by LFUCG, evidence of renewal of an expiring policy must be submitted to LFUCG, and may be submitted on a manually signed renewal endorsement form. If the policy or carrier has changed, however, new evidence of coverage must be submitted in accordance with these Insurance Requirements.

Deductibles and Self-Insured Programs

IF YOU INTEND TO SUBMIT A SELF-INSURANCE PLAN IT MUST BE FORWARDED TO LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DIVISION OF RISK MANAGEMENT, 200 EAST MAIN STREET, LEXINGTON, KENTUCKY 40507 NO LATER THAN A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO THE RESPONSE DATE. Self-insurance programs, deductibles, and self-insured retentions in insurance policies are subject to separate approval by Lexington-Fayette Urban County Government's Division of Risk Management, upon review of evidence of BIDDER/CONTRACTOR's financial capacity to respond to claims. Any such programs or retentions must provide LFUCG with at least the same protection from liability and defense of suits as would be afforded by first-dollar insurance coverage. If BIDDER/CONTRACTOR satisfies any portion of the insurance requirements through deductibles, self-insurance programs, or self-insured retentions, BIDDER/CONTRACTOR agrees to provide Lexington-Fayette Urban County Government, Division of Risk Management, the following data prior to the final acceptance of bid and the commencement of any work:

- a. Latest audited financial statement, including auditor's notes.
- b. Any records of any self-insured trust fund plan or policy and related accounting statements.
- c. Actuarial funding reports or retained losses.

- d. Risk Management Manual or a description of the self-insurance and risk management program.
- e. A claim loss run summary for the previous five (5) years.
- f. Self-Insured Associations will be considered.

Safety and Loss Control

CONTRACTOR shall comply with all applicable federal, state, and local safety standards related to the performance of its works or services under this Agreement and take necessary action to protect the life, health and safety and property of all of its personnel on the job site, the public, and LFUCG.

Verification of Coverage

BIDDER/CONTRACTOR agrees to furnish LFUCG with all applicable Certificates of Insurance signed by a person authorized by the insurer to bind coverage on its behalf prior to final award, and if requested, shall provide LFUCG copies of all insurance policies, including all endorsements.

Right to Review, Audit and Inspect

CONTRACTOR understands and agrees that LFUCG may review, audit and inspect any and all of its records and operations to insure compliance with these Insurance Requirements.

DEFAULT

BIDDER/CONTRACTOR understands and agrees that the failure to comply with any of these insurance, safety, or loss control provisions shall constitute default and that LFUCG may elect at its option any single remedy or penalty or any combination of remedies and penalties, as available, including but not limited to purchasing insurance and charging BIDDER/CONTRACTOR for any such insurance premiums purchased, or suspending or terminating the work.

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2. BLASTING

Blasting is NOT allowed on this project.

3. FAILURE TO COMPLETE WORK ON TIME

Should the Contractor fail or refuse to complete the work within the time specified in his Proposal and/or Contract (or extension of time granted by the OWNER), the Contractor

shall pay liquidated damages in an amount set out in said Proposal and/or Contract. The amount of liquidated damages shall in no event be considered as a penalty, nor other than an amount agreed upon by the Contractor and the OWNER for damages, losses, additional engineering, additional resident representation and other costs that will be sustained by the OWNER, if the Contractor fails to complete the work within the specified time. Liquidated damages will be applied on a rate per day for each and every calendar day (Sundays and holidays included) beyond the Contract expiration date stipulated in the Contract Documents, considering all time extensions granted.

4. **KY DIVISION OF WATER / EPA PERMITS**

Contractor shall prepare and maintain the BMP (Best Management Practices) and SWPP (Storm Water Pollution Prevention) Plans.

5. **PAYMENT FOR COST OF PERFORMANCE AND PAYMENT BONDS**

Contrary to Article 10.5.4 of the General Conditions, direct payment for the Contractor's cost of Performance and Payment Bonds will be permitted.

Direct cost of required Performance and Payment Bonds has been included as a line item in the Form of Proposal, to allow payment for this cost prior to completion of the project if the contractor so chooses. If no figure is supplied for this line item, no specific payment for bonding costs will be made. The total amount of bid is to include the cost of bonding, whether this cost is specifically shown by the bidder on the line item in the Form of Proposal, or whether it is indirectly included elsewhere within the bidder's unit prices.

When the applicable amount is listed in the Form of Proposal, payment for the costs of Performance and Payment Bonds may generally be requested after the work is 20% complete. The contractor will furnish from his bonding agent a receipt verifying the cost of the bonds and a letter stating that the bonds are in effect and in good standing. Payment will be made for the actual cost of the bonds or the amount stated in the Form of Proposal, whichever is less.

For projects with less than 90 day contract time or a total bid price less than \$100,000, no early or separate repayment of bonding costs will be considered. In those cases, if bonding costs are listed as a bid item, bond payment will be combined with final release of all retainage. **(NO RETAINAGE ON THIS CONTRACT).**

6. SPECIAL UTILITY NOTES

IMPACT ON CONSTRUCTION

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

The contractor is instructed to call 1-800-752-6007 to reach KY 811, the one-call system for information on the location of existing underground utilities. The call is to be placed a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor should be aware that owners of underground facilities are not required to be members of the KY 811 one-call Before-U-Dig (BUD) service. The contractor must coordinate excavation with the utility owners, including those whom do not subscribe to KY 811. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the area.

Please Note: The information presented in this Utility Note is informational in nature and the information contained herein is not guaranteed.

Utility Notes continued on following pages

**UTILITY NOTES TO BE INCLUDED IN THE PROPOSAL
IMPACT ON CONSTRUCTION**

FAYETTE COUNTY

Southland Drive Sidewalk Project

Utility coordination efforts determined that no utility relocation will be necessary for this project. Any information pertaining to utility facilities are defined in the bid package and are to be carried out as instructed by the LFUCG. The contractor will be responsible for any coordination or adjustments that are discussed or quantified in the proposal.

Utility Information Note

Lexington-Fayette Urban County Government, Kentucky Utilities, Spectrum, Columbia Gas, Windstream Communications and Kentucky American Water have service in the vicinity of the construction. However, there is no impact or adjustments required of their services.

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 Resident Engineer. The Lexington-Fayette Urban County Government maintains the right to remove or alter portions of this contract if a utility conflict occurs.

The Lexington-Fayette Urban County Government 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 Project Area Utility Contacts.

UTILITY CONTACT LIST FOR PROJECT AREA

It has not been confirmed what specific utility is located within the project bounds beyond field inspection. Therefore, we have provided a contact list as a precautionary measure to aid the awarded contractor in contacting any utility necessary.

Kentucky Utilities Company
500 Stone Road
Lexington, KY 40503

Contact: Kevin Long
859-367-4219
Kevin.Long@lge-ku.com

Spectrum
2544 Palumbo Drive
Lexington, KY 40509

Contact: Gary Hartford
859-514-2506
Harford.G@twc.com

Windstream Communications
130 West New Circle Road, Suite 170
Lexington, KY 40505

Contact: Steve Johnson
859-357-6216
steve.johnson@windstream.com

Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Contact: Toby Adams
859-335-3415
Toby.Adams@amwater.com

Columbia Gas of Kentucky, Inc.
2001 Mercer Road
P.O. Box 14241
Lexington, KY 40512

Contact: David Lemons
859-288-0249
dnlemons@misource.com

Columbia Gas Transmission
1675 Muddy Creek Road
Winchester, KY 40392

Contact: Nena Honeker
859-745-6415

Lexington-Fayette Urban County Government
Division of Water Quality
301 Lisle Industrial Avenue
Lexington, KY 40511

Contact: Rodney Chervus, P.E.
859-425-2400
rchervus@lfucg.com

Lexington-Fayette Urban County Government
Traffic Engineering
101 E. Vine Street, Suite 300
Lexington, KY 40507

Contact: Jeffery Neal
859-258-3830
jneal@lfucg.com

Level 3 Communications
11857 Commonwealth Drive
Louisville, KY 40291

Contact : Harold Waters Jr.
502-435-0956
harold.waters@level3.com

PART VI

CONTRACT AGREEMENT

INDEX

1. SCOPE OF WORK
2. TIME OF COMPLETION
3. ISSUANCE OF WORK ORDERS
4. THE CONTRACT SUM
5. LIQUIDATED DAMAGES
6. PROGRESS PAYMENTS
7. ACCEPTANCE AND FINAL PAYMENT
8. THE CONTRACT DOCUMENTS
9. EXTRA WORK
10. ENUMERATION OF BID PROPOSAL AND DRAWINGS

PART VI

CONTRACT AGREEMENT

THIS AGREEMENT, made on the _____ day of _____, 20____, by and between **Lexington-Fayette Urban County Government**, acting herein called "OWNER" and **Bluegrass Contracting Company, Inc.**, doing business as *(an individual) (a partnership) (a corporation) located in the City of **Lexington**, County of **Fayette**, and State of **KY**, hereinafter called "CONTRACTOR."

WITNESSETH: That the CONTRACTOR and the OWNER in consideration of **Two million, two hundred thousand one hundred forty** Dollars and **fifty** Cents (**\$2,210,140.50**) quoted in the proposal by the CONTRACTOR, dated _____, hereby agree to commence and complete the construction described as follows:

1. SCOPE OF WORK

The CONTRACTOR shall furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal, the General Conditions, and the Special Conditions of the Contract, the Specifications and Contract Documents therefore as prepared by **Palmer Engineering** for the **Southland Drive Sidewalk Project**.

2. TIME OF COMPLETION

The time period estimated and authorized by the OWNER for the proper execution of the Work by the Contract, in full, is hereby fixed as **one-hundred fifty (150) calendar days**. The time shall begin ten (10) days after the CONTRACTOR is given the Notice to Proceed with the Work.

3. ISSUANCE OF WORK ORDERS

Notice to begin Work will be given in whole or for part of the Work as determined by the OWNER pending the availability of funds. The order of construction will be as determined by the Engineer after consultation with the CONTRACTOR and the OWNER.

4. THE CONTRACT SUM

The OWNER agrees to pay the CONTRACTOR in current funds for the performance of the Contract, as quoted in the proposal, subject to any additions and deductions, as provided therein.

5. LIQUIDATED DAMAGES

It is mutually agreed by and between the parties hereto that time is of the essence of this Contract, and that there will be sustained by the OWNER damages, monetary and otherwise, in the event of delay in the completion of the Work hereby contracted. The CONTRACTOR will be held

PART VI
CONTRACT AGREEMENT

THIS AGREEMENT, made on the _____ day of _____, 20____, by and between **Lexington-Fayette Urban County Government**, acting herein called "OWNER" and _____, doing business as *(an individual) (a partnership) (a corporation) located in the City of _____, County of _____, and State of _____, hereinafter called "CONTRACTOR."

WITNESSETH: That the CONTRACTOR and the OWNER in consideration of _____ Dollars and _____ Cents (\$ _____) quoted in the proposal by the CONTRACTOR, dated _____, hereby agree to commence and complete the construction described as follows:

1. SCOPE OF WORK

The CONTRACTOR shall furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal, the General Conditions, and the Special Conditions of the Contract, the Specifications and Contract Documents therefore as prepared by Palmer Engineering for the Southland Drive Sidewalk Project.

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The time period estimated and authorized by the OWNER for the proper execution of the Work by the Contract, in full, is hereby fixed as **one-hundred fifty (150) calendar days**. The time shall begin ten (10) days after the CONTRACTOR is given the Notice to Proceed with the Work.

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5. LIQUIDATED DAMAGES

It is mutually agreed by and between the parties hereto that time is of the essence of this Contract, and that there will be sustained by the OWNER damages, monetary and otherwise, in the event of

delay in the completion of the Work hereby contracted. The CONTRACTOR will be held responsible to the OWNER for delays in completion of the Work herein contracted beyond the date set for completion. Such monetary damage shall be deducted from the Contract sum in the amount of SEVEN HUNDRED FIFTY DOLLARS (\$750.00) per calendar day of such delay. If the Work contracted to be done shall not, in good faith, be commenced at the time specified, then the CONTRACTOR together with the Surety or Sureties upon the bond herein provided for, shall be liable for and shall pay to the OWNER all damages sustained by reason of such failure for breach of Contract, and the OWNER may immediately re-let the Work involved.

6. PROGRESS PAYMENTS

The OWNER shall make payments on account of the Contract, as provided in accordance with the General Conditions, as estimated by the Engineer, less the aggregate of previous payments.

7. ACCEPTANCE AND FINAL PAYMENT

Final payment shall be due within ninety (90) days after completion of the Work, provided the Work be then fully completed and the Contract fully accepted.

Before issuance of final certificate, the CONTRACTOR shall submit evidence satisfactory to the Engineer that all payrolls, material bills, and other indebtedness connected with the Work has been paid.

If, after the Work has been substantially completed, full completion thereof is materially delayed through no fault of the CONTRACTOR, and the ENGINEER so certifies, the OWNER shall upon certificate of the ENGINEER, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

8. THE CONTRACT DOCUMENTS

The Advertisement for Bids, Information for Bidders, the General Conditions, Performance and Payment Bonds, Contract Agreement, Special Conditions, General Provisions, any and all Addenda, and Bid Proposal, and Plan Drawings form the Contract, and they are fully a part of the Contract as if hereto attached or herein repeated.

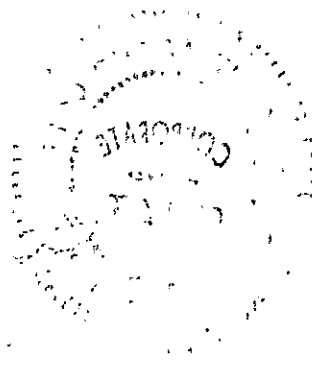
9. EXTRA WORK

The OWNER, without invalidating the Contract, may order extra work or make changes by altering, adding to or deducting from the Work, the Contract Sum being adjusted accordingly. All such Work shall be executed and paid for in accordance with the General Conditions, which is a part of this Contract.

10. THE FOLLOWING IS AN ENUMERATION OF THE BID PROPOSAL AND DRAWINGS (CONTRACT DOCUMENTS):

CONTRACT DOCUMENTS

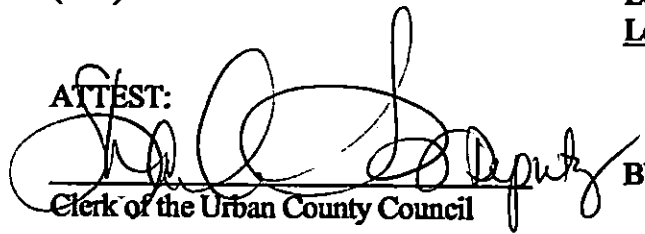
PART NO.	TITLE
I	Advertisement for Bids
II	Information for Bidders
III	Form of Proposal
IV	General Conditions
V	Special Conditions
VI	Contract Agreement
VII	Performance and Payment Bonds
VIII	Technical Specifications
APPENDIX A	Standard Drawings
	PLAN DRAWINGS



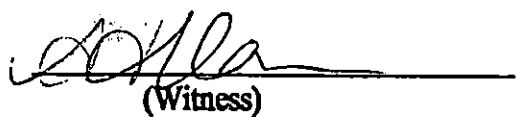
IN WITNESSETH WHEREOF, the parties hereto have executed this Contract as of the date and year above written.

(Seal)

Lexington-Fayette Urban County Government.
Lexington, Kentucky
(Owner)

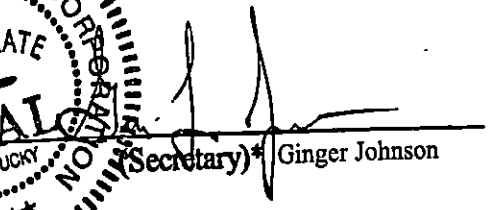
ATTEST:

Clerk of the Urban County Council

BY: Linda Gorton
MAYOR

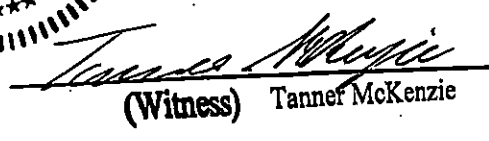

(Witness)

(Title)




(Secretary)* Ginger Johnson

(Contractor)
BY: Mark W. Johnson
Mark W. Johnson


(Witness) Tanner McKenzie

President
(Title)

1075 Red Mile Road, Lexington, KY 40504
(Address and Zip Code)

IMPORTANT: *Strike out any non-applicable terms.
Secretary of the Owner should attest. If the CONTRACTOR is corporation,
Secretary should attest. Give proper title of each person-executing Contract.

PART VII

PERFORMANCE AND PAYMENT BONDS

1. PERFORMANCE BOND
2. PAYMENT BOND

PART VII

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that

Bluegrass Contracting Corporation

(Name of CONTRACTOR)

PO Box 11638, Lexington, KY 40576

(Address of CONTRACTOR)

a _____ Corporation _____, hereinafter
(Corporation, Partnership, or Individual)

called Principal, and North American Specialty Insurance Company

(Name of Surety)

5200 Metcalf Avenue, Overland Park, KS 66202 - 1391

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT
200 East Main Street, Third Floor
Lexington, Kentucky 40507

hereinafter called "OWNER" in the penal sum of: Two Million Two Hundred Ten Thousand One Hundred Forty Dollars and 50/100
Dollars, (\$ 2,210,140.50), for the payment of whereof Principal and Surety bind themselves, their heirs,
executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal by written agreement is entering into a Contract with OWNER for Southland Drive
Sidewalk Project _____ in accordance with drawings and
specifications prepared by: Palmer Engineering which Contract is by reference made a part hereof,
and is hereinafter referred to as the Contract.

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal shall
promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall
remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the OWNER.

Whenever, Principal shall be, and declared by OWNER to be in default under the Contract, the OWNER
having performed OWNER'S obligations thereunder, the Surety may promptly remedy the default, or shall
promptly:

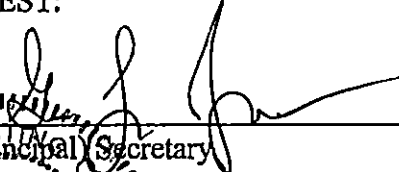
- (1) Complete the Contract in accordance with its terms and conditions or
- (2) Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or if the OWNER elects, upon determination by the OWNER and Surety jointly of the lowest responsible bidder, arrange for a Contract between such bidder and OWNER, and make available as Work progresses (even though there may be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the Contract Price", as used in this paragraph shall mean the total amount payable by OWNER to Principal under the Contract and any amendments thereto, less the amount properly paid by OWNER to Principal.


Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the OWNER named herein or the heirs, executors, administrators or successors of OWNER.

IN WITNESS WHEREOF, this instrument is executed in 3 each one of which shall be
(number)
deemed an original, this the 15th day of February, 2019.

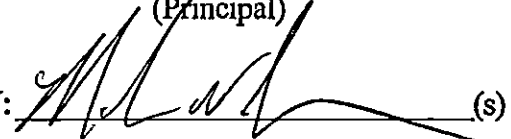
ATTEST:



(Principal) Secretary


(Witness to Principal)

Bluegrass Contracting Corporation
(Principal)


BY:  (s)

PO Box 11638
(Address)

Lexington, KY 40576

PO Box 11638
(Address)
Lexington, KY 40576

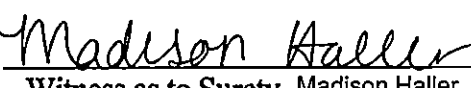
ATTEST:



(Surety) Secretary XXX Paula J. Teague
Witness

North American Specialty Insurance Company
(Surety)

BY:  (Attorney-in-Fact)
Monica A. Kaiser


(SEAL)


Witness as to Surety Madison Haller
5200 Metcalf Avenue
(Address)
Overland Park, KS 66202 - 1391

5200 Metcalf Avenue
(Address)

Overland Park, KS 66202 - 1391

NOTE: The number of executed counterparts of the bond shall coincide with the number of executed counterparts of the Contract.

PART VII
PAYMENT BOND

KNOW ALL MEN BY THESE PRESENT: that

Bluegrass Contracting Corporation

(Name of Contractor)

PO Box 11638, Lexington, KY 40576

(Address of Contractor)

a _____ Corporation, hereinafter

(Corporation, Partnership or Individual)

called Principal, and North American Specialty Insurance Company

(Name of Surety)

5200 Metcalf Avenue, Overland Park, KS 66202 - 1391

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto:

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT
200 East Main Street, Third Floor
Lexington, Kentucky 40507

Obligee, hereinafter called OWNER, for the use and benefit of claimants as hereinafter defined, in the amount of Two Million Two Hundred Ten Thousand One Hundred Forty Dollars and 50/100 Dollars (\$2,210,140.50) the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal by written agreement is entering into a Contract with OWNER for Southland Drive Sidewalk Project in accordance with drawings and specifications prepared by: Palmer Engineering which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall promptly make payment to all claimants as hereinafter defined for all labor and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions.


1. A claimant is defined as one having a direct contract with the Principal or with a Subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.

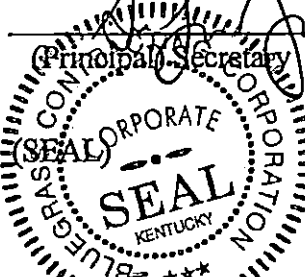

2. The above named Principal and Surety hereby jointly and severally agree with the OWNER that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The OWNER shall not be liable for the payment of any costs or expenses of any such suit.
3. No suit or action shall be commenced hereunder by any claimant:
 - (a) Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two of the following: The Principal, the OWNER, or the Surety above named, within ninety (90) days after such claimant did or performed the last of the Work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the Work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, OWNER, or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.
 - (b) After the expiration of one (1) year following the date on which Principal ceased Work on said Contract, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.
 - (c) Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the project, or any part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated, and not elsewhere.
4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against aid improvement, whether or not claim for the amount of such lien be presented under and against this bond.

IN WITNESS WHEREOF, this instrument is executed in 3 counterparts, each one of (number)

which shall be deemed an original, this the 15th day of February, 2019.

ATTEST:

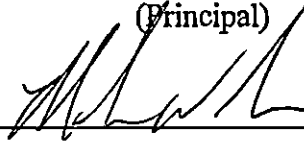


(Principal) Secretary



(Witness to Principal)

Bluegrass Contracting Corporation

(Principal)

BY:  (s)

PO Box 11638


(Address)

Lexington, KY 40576

PO Box 11638

(Address)
Lexington, KY 40576

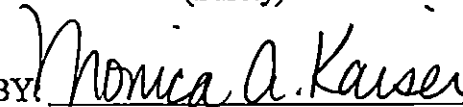
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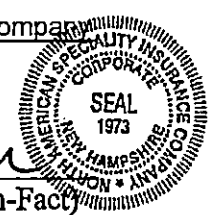


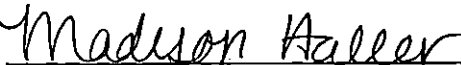
(Surety) Secretary Paula J. Teague
Witness

North American Specialty Insurance Company

(Surety)

BY: 

Monica A. Kaiser (Attorney-in-Fact)


(SEAL)


Witness as to Surety Madison Haller

5200 Metcalf Avenue

(Address)

5200 Metcalf Avenue

(Address)
Overland Park, KS 66202 - 1391

Overland Park, KS 66202 - 1391

NOTE: The number of executed counterparts of the bond shall coincide with the number of executed counterparts of the Contract.

END OF SECTION

SWISS RE CORPORATE SOLUTIONS

NORTH AMERICAN SPECIALTY INSURANCE COMPANY
WASHINGTON INTERNATIONAL INSURANCE COMPANY

GENERAL POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, THAT North American Specialty Insurance Company, a corporation duly organized and existing under laws of the State of New Hampshire, and having its principal office in the City of Overland Park, Kansas, and Washington International Insurance Company, a corporation organized and existing under the laws of the State of New Hampshire and having its principal office in the City of Overland Park, Kansas, each does hereby make, constitute and appoint: Monica A. Kaiser

Principal: Bluegrass Contracting Corporation

Bond Number: 2278679

Obligee: Lexington Fayette Urban County Government

Bond Amount: See Bond Form

Bond Description: Southland Drive Sidewalk Project

its true and lawful Attorney-in-Fact, to make, execute, seal and deliver, for and on its behalf and as its act and deed, bonds or other writings obligatory in the nature of a bond on behalf of each of said Companies, as surety, on contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract or suretyship executed under this authority shall exceed the amount of:

FIFTY MILLION (\$50,000,000.00) DOLLARS

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of both North American Specialty Insurance Company and Washington International Insurance Company at meetings duly called and held on the 9th of May, 2012:

“RESOLVED, that any two of the Presidents, any Managing Director, any Senior Vice President, any Vice President, any Assistant Vice President, the Secretary or any Assistant Secretary be, and each or any of them hereby is authorized to execute a Power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings and all contracts of surety, and that each or any of them hereby is authorized to attest to the execution of any such Power of Attorney and to attach therein the seal of the Company; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be binding upon the Company when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached.”



By [Signature]
Steven P. Anderson, Senior Vice President of Washington International Insurance Company
& Senior Vice President of North American Specialty Insurance Company



By [Signature]
Michael A. Ito, Senior Vice President of Washington International Insurance Company
& Senior Vice President of North American Specialty Insurance Company

IN WITNESS WHEREOF, North American Specialty Insurance Company and Washington International Insurance Company have caused their official seals to be hereunto affixed, and these presents to be signed by their authorized officers this 12th day of October, 2017.

North American Specialty Insurance Company
Washington International Insurance Company

State of Illinois
County of Cook ss:

On this 12th day of October, 2017, before me, a Notary Public personally appeared Steven P. Anderson, Senior Vice President of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company and Michael A. Ito, Senior Vice President of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company, personally known to me, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as officers of and acknowledged said instrument to be the voluntary act and deed of their respective companies.



[Signature]
M. Kenny, Notary Public

I, Jeffrey Goldberg, the duly elected Assistant Secretary of North American Specialty Insurance Company and Washington International Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney given by said North American Specialty Insurance Company and Washington International Insurance Company, which is still in full force and effect.

IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Companies this 15th day of February, 2019.

[Signature]
Jeffrey Goldberg, Vice President & Assistant Secretary of
Washington International Insurance Company & North American Specialty Insurance Company



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
2/14/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer any rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Smith Lanier & Co-Lexington Marsh & McLennan Agency, LLC P O Box 2030 Lexington, KY 40588	CONTACT NAME: Paula Hardin	
	PHONE (A/C, No, Ext): 800 796-3567	FAX (A/C, No): 859 254-8020
E-MAIL ADDRESS: phardin@jsmithlanier.com		
INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A: Charter Oak Fire		25615
INSURER B: Travelers Property Casualty Ins. Co.		36161
INSURER C: KY Assoc. General Contractors		37532
INSURER D: Great American E & S Insurance Co.		25674
INSURER E: Travelers Property Casualty Co.		25674
INSURER F:		25674

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDITIONAL SUBROGATION RIGHTS	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
X	COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> PD Ded:5,000 GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:		DTCO6E947548COF17	07/01/2018	07/01/2019	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$300,000 MED EXP (Any one person) \$5,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$
X	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY		DT8106E947548TIL17	07/01/2018	07/01/2019	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
X	UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$10000		CUP6EJ49511A1726	07/01/2018	07/01/2019	EACH OCCURRENCE \$11,000,000 AGGREGATE \$11,000,000 \$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input checked="" type="checkbox"/> Y/N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A	018882	01/01/2019	01/01/2020	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$4,000,000 E.L. DISEASE - EA EMPLOYEE \$4,000,000 E.L. DISEASE - POLICY LIMIT \$4,000,000
X	Pollution Liability		MMAENV001060	07/01/2018	07/01/2019	\$3,000,000-Pol Condt \$3,000,000 - Aggregate \$10,000 - Retention

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Project: Southland Drive Sidewalks
 Certificate holder is included as additional insured when required by written contract but only with respects to the general liability insurance and subject to the provisions and limitations of the policy.

CERTIFICATE HOLDER Lexington Fayette Urban County Government 200 East Main Street Lexington, KY 40507-0000	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE
--	--

PART VIII

TECHNICAL SPECIFICATIONS

TABLE OF CONTENTS

SECTION A	GENERAL PROVISIONS
SECTION B	MAINTENANCE OF TRAFFIC
SECTION C	FINAL CLEANUP
SECTION C	FINAL GRADING
SECTION 1	Clearing and Grubbing
SECTION 2	Erosion and Sediment Control
SECTION 3	DGA Base
SECTION 4	Bituminous Concrete Base
SECTION 5	Bituminous Concrete Surface
SECTION 6	Storm Sewer Pipe
SECTION 7	Headwalls
SECTION 8	Box Inlets
SECTION 9	Junction Box and Drainage Junction Box
SECTION 10	Frame and Lid
SECTION 11	Barrier Curb and Gutter
SECTION 12	Standard Header Curb
SECTION 13	Earthwork
SECTION 14	Mobilization and Demobilization
SECTION 15	Portable Changeable Message Sign
SECTION 16	Silt Fence and Silt Traps
SECTION 17	Concrete Sidewalk
SECTION 18	Construction Staking
SECTION 19	Remove Structure
SECTION 20	Erosion Control Blanket
SECTION 21	Seeding and Protection
SECTION 22	Sodding
SECTION 23	Pavement Markings
SECTION 24	Detectable Warning Tile
SECTION 25	Stone Wall
SECTION 26	Landscaping
SECTION 27	Bike Box Color Demarcation
SECTION 28	Milling and Texturing
SECTION 29	Remove and Reset Signs
SECTION 30	Payment and Performance Bond
SECTION 31	River Cobble/Flat Rock Lining
SECTION 32	Wheel Stops
SECTION 33	Precast Box

TECHNICAL SPECIFICATIONS

GENERAL PROVISIONS

A.1 KENTUCKY DEPARTMENT OF HIGHWAYS - SPECIFICATIONS

Except as otherwise indicated on the Plans, and in the Contract Documents and Specifications, all items of Work and administration of this project including materials, construction methods, method of measurement and basis of payment shall comply with the current edition of the *Kentucky Department of Highways (KDOH) Standard Specifications for Road and Bridge Construction* and all current revisions.

With regard to the incorporation *Standard Specifications of KDOH* into these Technical Specifications, the following should be noted:

- Unless either the content implicitly or the Plans and Contract Documents and Specifications explicitly indicate otherwise, all KDOH references to "the Department" should be construed as being references to the Lexington-Fayette Urban County Government (LFUCG).
- Any discrepancy between the *Standard Specifications of KDOH* and the express intentions of Lexington-Fayette Urban County Government (i.e., Plans, Contract Documents and Specifications, and Lexington-Fayette Urban County Government Standard Drawings) shall be resolved in favor of the latter. (An example of one of the more common types of discrepancy is that which sometimes occurs with regard to the measurement of and payment for Work items.)

A.2 ABBREVIATIONS

Abbreviations of standards, codes, and publications used within these Specifications are as follows:

ASTM	American Society of Testing and Materials
ANSI	American National Standard Institute
KDOH	Kentucky Department of Highways, "Standard Specifications for Road and Bridge Construction", Current Edition

A.3 SCOPE

It is the intent that the CONTRACTOR, in accordance with the Plans, Contract Documents and Specifications, and other mutually acknowledged informational materials shall perform everything required to be performed and to furnish a complete, fully operating Work, and shall provide and furnish all labor, materials, necessary tools, expendable and non-expendable equipment and all transportation services required for the entire, proper, substantial completion of the Work, the cost of all of which shall be included in his bid.

The CONTRACTOR shall make all requisite excavations and foundation preparation for constructing sidewalks, incidental drainage structures, and retaining walls. The CONTRACTOR shall, where required, excavate and prepare subgrade for pavement widening and replacement. The CONTRACTOR shall provide all signs, lighting, barricades, flagmen and watchmen, and make provisions necessary to protect and maintain buildings, fences, trees, shrubs, poles, existing utility fixtures, watercourses, surface drains, or other structures in, on, across, or adjacent to the Work and repair all damage done to them where and as required. The CONTRACTOR shall perform all backfilling, restore walks, grass plots, flowers, shrubs, trees, paved surfaces, etc., damaged or disturbed and clear away all rubbish and surplus materials. The CONTRACTOR shall put in complete and acceptable working order the items covered by the Contract.

This Specification sets forth several items of Work or conditions which are required as integral parts of the successful completion of the Project. All items discussed herein under General Provisions are considered incidental to the overall accomplishment of the Project and no separate payment shall be made therefore unless otherwise noted elsewhere in these specifications.

A.4 CONTRACTOR'S FACILITIES

A.4.1 Sanitary Facilities: The CONTRACTOR shall provide and maintain all necessary sanitary facilities at the site, in accordance with all applicable regulations, and shall properly remove same at completion of the Project.

A.4.2 Utilities: The obtaining of all utilities which may be required for construction shall be the responsibility of the CONTRACTOR.

A.5 CONTRACTOR'S FIELD OFFICE

A CONTRACTOR'S Field Office is not required for this project.

A.6 UTILITIES

The CONTRACTOR is to notify all utility companies prior to beginning construction operations.

It shall be the CONTRACTOR'S responsibility to locate all utilities, make appropriate arrangements regarding relocation, maintain utility service throughout the construction period, and make final relocations at the completion of the Work. The CONTRACTOR shall be responsible for any injury or damage to the existing utilities due to his operations whether shown or not shown in the plans. Where utilities are shown or indicated on the plans, the information given is in accordance with the best information in possession of the OWNER but is approximate only. The data is not warranted to be either complete or correct, and the CONTRACTOR shall assume all risks resulting from the conditions arising from the approximations shown.

The CONTRACTOR shall confer with the utility companies to inform them of the proposed construction schedule, verify the location and elevation of existing utilities and arrange for the

relocation and adjustment of any facilities to avoid interference with the proposed construction. All such activities are to be performed under the direction of and with the approval of the ENGINEER.

When the various utility owners find it necessary to make adjustments to their lines where the CONTRACTOR is presently working, the CONTRACTOR is to move his operations to another area of Work so as not to interfere in any way with the utility company's Work.

Any utilities covered up or lost by the construction operations of the CONTRACTOR shall be uncovered and found by the CONTRACTOR and the new construction repaired and/or replaced as directed by the ENGINEER. No additional compensation will be allowed for such Work nor shall any additional payment be allowed for the relocation and adjusting of any utility but shall be considered Incidentals to other Work.

The CONTRACTOR shall make a concerted effort to prevent any disruption of utility services, and if an unintended disruption occurs, the CONTRACTOR shall immediately and safely restore service. If disruption of any of the utility services covered in this section is unavoidable, it will be the responsibility of the CONTRACTOR to notify affected property owners. The CONTRACTOR shall also make every effort to restore said services before quitting Work for the day. In the event this cannot be done, the CONTRACTOR shall provide temporary service to the property owners until permanent service can be restored.

A.7 TESTING

CONTRACTOR shall perform slump, temperature, and concrete cylinder strength tests with the ENGINEER present and in accordance with the applicable specifications. CONTRACTOR shall create, store, test, and dispose of the concrete cylinders (three 6-inch by 12-inch) from all concrete deliveries for signal pole base construction and for the first concrete delivery for sidewalk and curb each day. No direct payment will be made for testing of concrete.

ENGINEER may require that additional testing be performed to determine the materials provided meet the specified requirements. For additional testing, the ENGINEER will select a testing laboratory to perform the testing services. The cost of additional testing shall be the responsibility of the OWNER. If testing reveals defective materials or work, the cost of said testing will become the responsibility of the CONTRACTOR.

- A.7.1 Codes and Standards: Testing, when required, will be in accordance with all pertinent codes and regulations and with selected standards of the American Society for Testing and Materials.
- A.7.2 Cooperation with the Testing Laboratory: Representatives of the testing laboratory shall have ready access to the Work at all times. The CONTRACTOR shall provide facilities for such access in order that the laboratory may properly perform its functions.

A.8 INSTALLATION REQUIREMENTS

Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned as suggested by the respective manufacturers, unless otherwise specified herein or directed by the ENGINEER.

A.9 PROOF OF COMPLIANCE

Whenever the Contract Documents require that a product be in accordance with Federal Specifications, ASTM Designations, ANSI Specifications, or other associations' standards, the CONTRACTOR shall present a certification from the manufacturer that the product complies therewith. When requested or specified, the CONTRACTOR shall submit supporting test data to substantiate compliance.

A.10 DUST CONTROL

The CONTRACTOR shall be responsible for minimizing the generation of dust resulting from his operations at all times. The CONTRACTOR shall be required to maintain all excavations, embankments, stockpiles, roads, permanent access roads, plant sites, waste areas, and all other Work areas within or without the project boundaries free from dust which would cause a hazard or nuisance to others. Approved temporary methods of stabilization consisting of sprinkling, chemical treatment, light bituminous treatment, or similar methods will be permitted to control dust. Dust control shall be performed as the Work proceeds, and whenever a dust nuisance or hazard occurs.

A.11 REPAIR OF DAMAGE

Any damage done to structures, fills, roadways, or other areas shall be repaired at the CONTRACTOR'S expense before final payment is made.

A.12 PROJECT EXTENT

The CONTRACTOR shall be responsible for satisfying himself as to the construction limits for the Project. The CONTRACTOR shall not establish Work, storage, or staging area outside the Project limits, unless otherwise directed or approved by the ENGINEER.

A.13 WORKING HOURS

All Work on this Project shall be restricted to Monday thru Saturday, but may be restricted by the ENGINEER if required; except emergency Work, such as any necessary pumping, which may require 24-hour operation. If the CONTRACTOR elects to Work beyond the normal work week, he shall notify the ENGINEER of his intent as far in advance as possible. Lane closures for all streets with a functional classification above local shall occur only between the hours of 9:00 a.m. to 3:00 p.m. and 7:00 p.m. to 6:00 a.m., except as approved by the ENGINEER.

A.14 GUARANTEE

The CONTRACTOR shall assume responsibility for all workmanship and materials for a period of one year from final payment. Any Work found to be defective due to failure to comply with the provision and intent of the Contract Documents, Specifications, and Plans shall be replaced at the CONTRACTOR'S expense.

A.15 PROPERTY CONSIDERATION

Materials having a salvage value shall remain the property of the OWNER. Salvageable material shall be delivered by the CONTRACTOR to the Division of Traffic Engineering, Operations Center, 1515 Old Frankfort Pike, Lexington, KY 40508. Salvageable material rejected by the OWNER shall become the responsibility of the CONTRACTOR to dispose of in a proper manner subject to the approval of the ENGINEER.

A.16 BLASTING

Blasting is addressed in the Special Conditions.

A.17 HAZARDOUS MATERIAL - GAS LINES

The CONTRACTOR is advised to exercise caution in his operations on this project, regardless of whether the plans indicate or do not indicate the presence of any gas or hazardous materials carrying lines.

TECHNICAL SPECIFICATIONS

SECTION B - MAINTENANCE OF TRAFFIC

B.1 SCOPE

The CONTRACTOR shall maintain all local vehicular and pedestrian traffic along the project during construction. The CONTRACTOR shall present a plan for maintenance of traffic, detours and traffic signs subject to the approval of the Lexington-Fayette Urban County Government Traffic Engineer prior to the beginning of Work. To the extent that it does not conflict with the content of the Plans, Contract Documents, and Specifications, Subsection 104.04 of KDOH Standard Specifications, current edition, is incorporated into this Technical Specification.

B.2 MATERIALS

The CONTRACTOR shall furnish bridging plates or provide other means of maintaining safe access for pedestrians and service traffic to all businesses during normal working hours. Adequate personnel shall be available during daylight hours to assure maintenance. Metal trench covers, granular backfill or other suitable methods shall be utilized to maintain vehicular traffic through areas disturbed by construction operations.

B.3 SIGNING

The CONTRACTOR shall furnish and erect suitable barricades, signs and other necessary devices to control, guide and safeguard traffic passing through or around the construction project. All such devices shall conform in all respects to the requirements of the Manual on Uniform Traffic Control Devices for Highway Construction and Maintenance Projects. The CONTRACTOR, before erecting any barricades or changing the location of one already placed, shall notify the ENGINEER at least three days prior to such contemplated erection or change, except in case of an emergency. In case of an emergency, the ENGINEER may direct the CONTRACTOR to immediately provide safety and warning devices to safeguard traffic. All night-time control devices requiring illumination shall be lighted every night during the entire period from sunset to sunrise. The CONTRACTOR will be held responsible for all damage to Work due to failure to provide barricades, signs, lights, and watchmen to protect it; and whenever evidence of such damage is found prior to acceptance, the ENGINEER may order the damaged portion removed and replaced by the CONTRACTOR at the CONTRACTOR'S expense. The responsibility remains the CONTRACTOR'S until the project is accepted. The LFUCG Road Improvement Signs shall also be included in this item.

Contractor shall designate an employee to be the Project Traffic Coordinator (PTC) and ensures that the PTC inspects the project traffic control scheme at a minimum of once per shift, reports all incidents within the work zone to the Engineer, and perform all other traffic control duties the Contract specifies.

B.4 MEASUREMENT AND PAYMENT

Payment for Maintenance of Traffic will be paid for at the Contract Unit Price per lump sum as quoted and this shall be full compensation for all Work required under this Section. Work shall include, but is not limited to, the installation and removal of temporary pavement and temporary fence, equipment, materials, signage (temporary and permanent), labor, and all other incidentals to complete the work.

TECHNICAL SPECIFICATION

SECTION C - FINAL CLEANUP

C.1 SCOPE

The Work will not be considered as complete, and final payment will not be made, until the right-of-way and all ground occupied by the CONTRACTOR in connection with the Work has been cleared of all rubbish, equipment, excess materials, temporary structures, and weeds. Rubbish and all waste materials of whatever nature shall be disposed of in waste areas provided by the CONTRACTOR. All property, both public and private, which has been damaged in the execution of the Work, shall be replaced or restored in an acceptable manner. All ditches shall be drained and all space shall be left unobstructed and in such condition as acceptable to the ENGINEER.

C.2 PAYMENT

No direct payment will be made for final cleanup.

TECHNICAL SPECIFICATIONS

SECTION D-FINISH GRADING

D.1 SCOPE

The work shall consist of providing a uniform finish to all areas designated on the plans for Final Grading. The required removal and proper utilization or disposal of all excavated materials, forming embankments, and the shaping and finishing shall be as directed by the ENGINEER.

D.2 MATERIALS

All material removal shall be unclassified. This includes removal of all pavements, curbs, gutters, concrete and bituminous debris unless specified. It shall be distinctly understood that any reference to rock, earth, concrete, or any other material on the plans or cross-sections whether in numbers, words, letters, or lines is solely for the OWNER'S information and is not to be taken as an indication of classified excavation or the quantity of any material involved. The Bidder must draw his own conclusions as to the conditions to be encountered. The OWNER does not give any guarantee as to the accuracy of the data and no claim will be considered of additional payment if the materials are not in accord with classification shown.

D.3 GENERAL

Excavation and grading shall be done in a neat and workmanlike manner to form smooth and uniform surfaces for all subsequent operations and once the surfaces have been shaped to the proper template and compacted to the satisfaction of the ENGINEER.

Rake and tamp to smooth all areas to even finished grade to insure proper surface drainage with ridges and depressions removed. Maintain drainage patterns and drainage swales. Loosen or scarify to 6 inches minimum depth. Bring grade to true and uniform grade and remove all stones larger than one inch, sticks, and other extraneous materials.

Scarify all planting areas prior to fine grading in order to ensure relative compaction of 85% or less. Any planting areas which become compacted in excess of 85% due to construction activities shall be thoroughly cross-ripped to the maximum depth feasible to alleviate that condition, taking care to avoid all existing drainage and subsurface utility lines. Finely finish surfaces by raking smoothly and evenly. Remove all exposed, extraneous matter one inch or larger in size to facilitate natural runoff. Drag to smooth surface. No stone or masonry fragment greater than one inch in any dimension will be allowed in the top 12 inches of the finished elevation.

Finish grades will slope to drain, without water pockets or irregularities (humps or hollows). Grades will be of uniform slope between points of fixed elevation. Establish vertical curves or

rounding at abrupt changes in slope. All finish grades will be approved by the engineer prior to commencing the planting operations.

Final surface shall consist of the upper portion of the soil profile and shall be loose, friable soil that is free of stones larger than one inch (1"), sub-soil, refuse and other debris including stumps, roots, brush, weeds, and non-organic materials. The acceptable soil texture classification for topsoil, in accordance with the U.S. Department of Agriculture system is: clay (40% maximum), silt (70 % maximum), and sand (60% maximum). Topsoil (both salvaged and furnished) shall meet the minimum standards through analytical testing, unless otherwise directed by LFUCG or the ENGINEER.

Material removed shall include excavation to the designated depths, transporting of removed materials from points to final use, disposal of surplus materials, and the shaping and finishing of all areas to the required lines and grades as shown on the Drawings.

Material removal carried below the indicated depths, except when directed by the ENGINEER, shall be replaced with material satisfactory to the ENGINEER. Additional payment will not be necessitated thereby.

All suitable material removed shall be used, insofar as it is practicable, in constructing the fill and embankments on site provided that the ENGINEER approves. The contractor shall dispose of any material in excess or unsatisfactory for such use.

The CONTRACTOR shall make every reasonable effort to construct the project uniformly. Tolerances which will be allowed will be according to the KDOH Standard Specifications for Road and Bridge Construction, current edition.

No payment will be made for any earthwork performed outside the limits shown on the Drawings or those approved by the ENGINEER. No extra material shall be removed or placed outside of these limits without permission.

D.4 PAYMENT

No direct payment will be made for Final Grading.

TECHNICAL SPECIFICATIONS

SECTION 1 - CLEARING AND GRUBBING

1.1 SCOPE

This item includes but is not limited to the clearing and grubbing of any trees, stumps, brush, bushes, cement concrete and/or stone masonry, steps, fences, walls, and all manholes, headwalls and outlet structures within the construction limits not otherwise removed by the excavation and grading operations or included in the bid items. Also, included is the proper removal and disposal of such materials in a manner acceptable to the ENGINEER and in a manner not detrimental to the inhabitants of the area. The CONTRACTOR will be responsible for determining and complying with local ordinances regarding disposal and/or burning of such materials. Clearing and grubbing shall not commence without approval of the ENGINEER.

Work shall not be performed outside the right-of way limits and existing vegetation outside the limits shall not be disturbed unless authorized by the ENGINEER.

Also included in this item will be the careful removal and stockpiling for pickup by the OWNER of all streets and traffic signs, inlet grates, manhole frames and covers and other such salvageable and reusable items, not intended to be reset on the job.

Vegetated areas on which excavation or fill operations are to be performed shall be stripped of all vegetation, topsoil, and other organic material as directed by the ENGINEER.

When it is practical, stripped topsoil material may be utilized or disposed of in the general area it came from in a manner directed and approved by the ENGINEER. Stockpiling of topsoil-type material will not be required, unless otherwise specifically designated on the Drawings or in the Specifications.

Where existing shrubs, fences, planter boxes, etc. are to be removed from the public right-of-way for new construction under this Contract, and the property owner at this site wishes to replace or reuse same on their private property, the CONTRACTOR shall carefully remove and store on this property owner's property for their use after construction is completed.

To the extent that it does not conflict with the content of the Plans and Contract Documents and Specifications, Section 202 of KDOH Standard Specifications, current edition, is incorporated into this Technical Specification.

1.2 MEASUREMENT AND PAYMENT

Clearing and Grubbing will be paid for at the Contract Unit Price per lump sum as quoted and this shall be full compensation for all Work required under this Section. All labor, materials, equipment, and excavation, etc. shall be included in this Work.

TECHNICAL SPECIFICATIONS

SECTION 2 - EROSION AND SEDIMENT CONTROL

2.1 SCOPE

In general, the section includes all of the sediment and erosion control items needed to satisfy the regulatory authorities and may include, but not be limited to the following:

1. Sign and obtain the Notice of Intent.
2. Prepare and maintain a Stormwater Pollution Prevention Plan (SWPPP).
3. Termination of the Notice of Intent.
4. "Filtrexx" inlet protection
5. 4' high Filter Fabric
6. "North American Green" Erosion Control Mat

2.2 PERFORMANCE REQUIREMENTS

1. Intent for the Division of Water. Submit Notice of Intent: Fill out, sign and submit the Notice of Intent.
2. Prepare a Stormwater Pollution Prevention Plan (SWPPP): A Professional Engineer licensed to practice in the Commonwealth of Kentucky shall prepare and shall maintain, a SWPPP Plan. Update periodically as site conditions change. A guideline entitled "NPDES Stormwater Pollution Preventions Guideline Document" is available online at...

<http://cfpub.epa.gov/npdes/stormwater/swppp.cfm>.
3. Weekly inspection of all erosion and sediment control items. Inspection is also required after rainfall events of 0.5 inch or more. Sample inspection report forms are attached.
4. Provide "Filtrexx" 32" Diameter FilterSoxx with Growing Media per manufacturer's specifications. The contractor may manufacture these on-site or pre-manufactured Soxx may be delivered for installation. Stakes shall be installed through the middle of the Soxx on 5 ft centers using 2inch by 2 inch wooden stakes. Staking depth shall be minimum 1 ½ feet. The Soxx shall be seeded at the time of manufacture and installation to create a contained "green vegetated filter".
5. 4' High Filter Fabric shall be installed per manufacturer's specifications and in accordance with the standard detail.
6. North American Green Erosion Control Mat shall be installed per manufacturer's specifications in locations outlined on the construction plans.

Install along channel sides to extend five (5) feet horizontally on either side of the channel. Install on all slopes of 4:1 or greater.

2.3 SUBMITTALS

1. **NOI:** Submit NOI to KPDES Branch, Division of Water. A copy of the submitted NOI form shall be sent to the ENGINEER and the Owner.
2. **SWPPP:** Submit SWPPP to Kentucky Division of Water. A copy shall be sent to the ENGINEER and the Owner.
3. The SWPPP prepared for the KY DOW NOI may be submitted to the LFUCG for review to obtain a LFUCG Land Disturbance Permit.
4. **Subcontractor Signatures:** Signatures of all subcontractors for approval stating that they have read, understand and that they intend to comply with the SWPPP. A copy of the signatures shall be submitted to the Owner.

2.4 EXECUTION

1. **Continuous Service:** The sediment and erosion control items are to be installed prior to the commencement of all other construction activities on site. Continuous maintenance shall be required until the next contract has been signed. To transfer the Notice of Intent, a letter is to be written and signed by the new contractor. Once this letter has been received and approved by the Division of Water the Contractor's responsibility shall be relieved.
2. Prepare Daily Field Reports per SWPPP requirements. Submit to regulatory agency as required.
3. Prepare Erosion and Sediment Control Inspection and Maintenance Report Form weekly per SWPPP requirements. Submit to regulatory agency as required.
4. Remove temporary erosion sediment control measures when site is 95% stabilized. Seed and protect any disturbed areas with permanent grass protect mixture.
5. The SWPPP shall be updated by the preparer as field conditions warrant.
6. Pollution Prevention measures shall not be constructed until the SWPPP has been accepted by the LFUCG.

7. No work on the project may commence until Pollution Prevention Measures are installed and accepted by the LFUCG and a Land Disturbance Permit is issued.
8. CONTRACTOR is responsible for filing all appropriate Notices of Termination (NOT) when the site is stabilized.

2.5 MEASUREMENT AND PAYMENT

Payment for Erosion and Sediment Control shall be for SWPPP preparation and revision, installation, maintenance, and removal of Pollution Prevention measures and other work necessary to make the work compliant with Federal, State and Local regulations, laws and/or ordinances with the exception of silt fence, silt traps and erosion control blanket. A maximum of fifty (50) percent of the amount bid for Erosion and Sediment Control shall be payable until the project reached substantial completion. At substantial completion, the amount payable may be increased to ninety (90) percent of the bid amount. When the site is stabilized, the remainder shall be paid.

The Owner will make payment for the completed and accepted quantities under the following:

<u>Pay Item</u>	<u>Pay Unit</u>
All items required for Erosion and Sediment Control With the exception of silt fence, silt traps, and erosion control blanket	Lump Sum

TECHNICAL SPECIFICATIONS

SECTION 3-DGA BASE

3.1 SCOPE

This Work consists of the construction of Dense Graded Aggregate base in accordance with the Plans, Contract Documents and Specifications, and Lexington-Fayette Urban County Government (LFUCG) Standard Drawings, current edition. Work in this section shall also conform to Sections 207, and 302 of the Kentucky Department of Highways (KDOH) Standard Specifications, current edition, but only to the extent that these KDOH sections do not conflict with the content of the Plans, Contract Documents and Specifications. The requirements of KDOH Standard Specifications, Section 302, apply with the following changes:

- (1) Control strips will not be required or utilized for compaction control.
- (2) Test sections and target density, as prescribed in paragraph 302.03.04, will not be established.
- (3) Density measurements will be made at locations designated by the Engineer or his/her representative.
- (4) Additional tests requested by the Contractor will be at the CONTRACTOR'S expense.
- (5) The average of dry density measurements in a lift shall be equal to or better than 144 pounds per cubic foot (pcf). No individual measurement shall be less than 140 pcf.
- (6) In the event the dry density measurements are not met, laydown operations will be stopped in the substandard area identified by the Engineer or his/her representative. The Contractor will either continue compaction effort or rework the designated section until the requirements for dry density are satisfied.

Work for this section shall include all labor, materials, equipment, excavation, and incidentals necessary to complete the Work.

3.2 PAYMENT

Accepted quantities thus measured will be paid for at the Contract Unit Price per ton for DGA as quoted and shall be full compensation for all Work required under this Section. All labor, materials (other than the Dense Graded Aggregate), equipment, and excavation shall be incidental to the placement of Dense Graded Aggregate.

TECHNICAL SPECIFICATIONS

SECTION 4 – BITUMINOUS CONCRETE BASE

4.1 SCOPE

This Work consists of the construction of Bituminous Base in accordance with the Plans, Contract Documents and Specifications, and Lexington-Fayette Urban County Government (LFUCG) Standard Drawings, current edition. Work in this section shall also conform to applicable sections of the Kentucky Department of Highways (KDOH) Standard Specifications, current edition, but only to the extent that these KDOH sections do not conflict with the content of the Plans, Contract Documents and Specifications, and LFUCG Standard Drawings.

4.2 BASIS OF PAYMENT

Payment for Bituminous Base will be based on approved quantities and paid for at the Contract Unit Price per ton as quoted and this shall be full compensation for all Work required under this Section. All labor, materials, equipment, and excavation, etc. shall be included in this Work.

TECHNICAL SPECIFICATIONS

SECTION 5 – BITUMINOUS CONCRETE SURFACE

5.1 SCOPE

This Work consists of the construction of Bituminous Concrete Surface in accordance with the Plans, Contract Documents and Specifications, and Lexington-Fayette Urban County Government (LFUCG) Standard Drawings, current edition. Work in this section shall also conform to applicable sections of the Kentucky Department of Highways (KDOH) Standard Specifications, current edition, but only to the extent that these KDOH sections do not conflict with the content of the Plans, Contract Documents and Specifications, and LFUCG Standard Drawings.

5.2 BASIS OF PAYMENT

Payment for Bituminous Concrete Surface will be based on approved quantities and paid for at the Contract Unit Price per ton as quoted and this shall be full compensation for all Work required under this Section. All labor, materials, equipment, and excavation, etc. shall be included in this Work.

TECHNICAL SPECIFICATIONS

SECTION 6 - STORM SEWER PIPE

6.1 SCOPE

Work under this Section shall include all labor, excavation, materials, equipment, bedding and backfilling in accordance to Lexington-Fayette Urban County Government Standard Drawings and all incidentals necessary to construct RCP Storm Sewer to the sizes indicated.

6.2 BASIS OF PAYMENT

Accepted quantities will be paid for at the Contract Unit Price per linear foot as quoted and shall be full compensation for all Work required under this section.

All labor, materials (other than the RCP storm sewer), equipment, excavation, bedding, and backfilling shall be incidental to the placement of RCP Storm Sewer.

TECHNICAL SPECIFICATIONS

SECTION 7 - HEADWALLS

7.1 SCOPE

Work for this Section shall conform to Kentucky Department of Highways Standard Specifications for Road and Bridge Construction Section 610, Current Edition and the Lexington-Fayette Urban County Government Standard Drawings and shall include labor, excavation, materials, equipment and necessary incidentals.

7.2 BASIS OF PAYMENT

Accepted quantities for Headwalls will be paid for at the Contract Unit Price per each as quoted and this shall be full compensation for all Work required under this Section. All labor, materials, equipment, and excavation shall be incidental to the placement of Headwalls.

TECHNICAL SPECIFICATIONS

SECTION 8 - CURB AND DROP BOX INLETS

8.1 SCOPE

Work for this Section shall include all labor, excavation, materials, equipment, and incidentals to construct Curb Box Inlet Type "A", "B", and "F" and Drop Box Inlets Type 11 and 14 as specified and in accordance with the Lexington-Fayette Urban County Government Standard Drawings numbers 121-125 and shall conform to Kentucky Department of Highway Standard Specifications, Section 601, 602, 605 and 710.

8.2 BASIS OF PAYMENT

Accepted quantities for Box Inlets will be paid for at the Contract Unit Price as quoted for each type (which shall be full compensation for all Work under this Section) and paid per specified Box Inlet satisfactorily placed. All labor, materials, equipment, and excavation shall be incidental to the placement of Box Inlets.

TECHNICAL SPECIFICATIONS

SECTION 9 - JUNCTION BOX AND DRAINAGE JUNCTION BOX

9.1 SCOPE

This Work consists of construction of Junction Box in accordance with the Plans, Contract Documents and Specifications, and Kentucky Department of Highways (KDOH) Standard Drawings, current edition. Work in this section shall also conform to Sections 206, 601, 602, 710, 801, 802, 803, 804, 805, and 811 of the KDOH Standard Specifications, current edition, but only to the extent that these KDOH sections do not conflict with the content of the Plans, Contract Documents and Specifications. Work for this section shall include all labor, materials, equipment, excavation, and incidentals necessary to complete the Work.

9.2 PAYMENT

Accepted quantities for Headwalls will be paid for at the Contract Unit Price per each as quoted and this shall be full compensation for all Work required under this Section. All labor, materials, equipment, and excavation shall be incidental to the placement of Junction Box and Drainage Junction Box.

TECHNICAL SPECIFICATIONS

SECTION 10 - FRAME AND LID

10.1 SCOPE

This Work consists of the installation of Frame and Lid in accordance with the Plans, Contract Documents and Specifications. Work in this section shall also conform to Section 710 of the Kentucky Department of Highways (KDOH) Standard Specifications, current edition, but only to the extent that these KDOH sections do not conflict with the content of the Plans, Contract Documents and Specifications, and Lexington-Fayette Urban County Government Standard Drawings.

Work for this section shall include all labor, materials, equipment, excavation, and incidentals necessary to complete the Work.

10.2 PAYMENT

Accepted quantities for Frame and Lid will be paid for at the Contract Unit Price as quoted (which shall be full compensation for all Work under this Section) and paid per each of Frame and Lid satisfactorily placed. All labor, materials, excavation, and equipment shall be incidental to the placement of Frame and Lid.

TECHNICAL SPECIFICATIONS

SECTION 11 - BARRIER CURB AND GUTTER

11.1 SCOPE

This Work consists of the construction of Barrier Curb and Gutter on a thoroughly prepared subgrade in accordance with the Plans, Contract Documents and Specifications, and Lexington-Fayette Urban County Government Standard Drawing, # 302-0, current edition. Work in this section shall also conform to Sections 207, 601, 713, 801, 802, 803, 804, and 805 of the Kentucky Department of Highways (KDOH) Standard Specifications, current edition, but only to the extent that these KDOH sections do not conflict with the content of the Plans, Contract Documents and Specifications, and Lexington-Fayette Urban County Government Standard Drawings.

Any placing of concrete must be immediately preceded by inspection and approval of the ENGINEER.

Work for this section shall include all labor, materials, equipment, excavation, and incidentals necessary to complete the Work.

11.2 PAYMENT

Accepted quantities for Barrier Curb and Gutter will be paid for at the Contract Unit Price as quoted (which shall be full compensation for all Work under this Section) and paid per linear foot of Barrier Curb and Gutter satisfactorily placed. All labor, materials, excavation, and equipment shall be incidental to the placement of Barrier Curb and Gutter.

TECHNICAL SPECIFICATIONS

SECTION 12 - STANDARD HEADER CURB

12.1 SCOPE

This Work consists of the construction of Header Curb on a thoroughly prepared subgrade in accordance with the Plans, Contract Documents and Specifications, and Lexington-Fayette Urban County Government Standard Drawing, # 302-0, current edition. Work in this section shall also conform to Sections 207, 601, 713, 801, 802, 803, 804, and 805 of the Kentucky Department of Highways (KDOH) Standard Specifications, current edition, but only to the extent that these KDOH sections do not conflict with the content of the Plans, Contract Documents and Specifications, and Lexington-Fayette Urban County Government Standard Drawings.

Any placing of concrete must be immediately preceded by inspection and approval of the ENGINEER.

Work for this section shall include all labor, materials, equipment, excavation, and incidentals necessary to complete the Work.

12.2 PAYMENT

Accepted quantities for Header Curb will be paid for at the Contract Unit Price as quoted (which shall be full compensation for all Work under this Section) and paid per linear foot of Header Curb satisfactorily placed. All labor, materials, excavation, and equipment shall be incidental to the placement of Header Curb.

TECHNICAL SPECIFICATIONS

SECTION 13 - EARTHWORK

13.1 SCOPE

The work shall consist of the required removal and proper utilization or disposal of all excavated materials, forming embankments, and the shaping and finishing to the required lines and grades as shown on the Plans.

13.2 MATERIALS

All material removal shall be unclassified. This includes removal of all pavements, curbs, gutters, concrete and bituminous driveway entrances, and concrete sidewalks. It shall be distinctly understood that any reference to rock, earth, concrete, or any other material on the plans or cross-sections whether in numbers, words, letters, or lines is solely for the OWNER'S information and is not to be taken as an indication of classified excavation or the quantity of any material involved. The Bidder must draw his own conclusions as to the conditions to be encountered. The OWNER does not give any guarantee as to the accuracy of the data and no claim will be considered of additional payment if the materials are not in accord with classification shown.

For embankment, only acceptable materials from sources approved by the ENGINEER shall be used. No frozen material or perishable materials of any kind will be allowed in the embankment. No stone or masonry fragment greater than four inches in any dimension will be allowed in the top 12 inches of the finished elevation.

13.3 GENERAL

Excavation and grading shall be done in a neat and workmanlike manner to form smooth and uniform subgrades and surfaces for all subsequent operations and once the surfaces have been shaped to the proper template and compacted to the satisfaction of the ENGINEER and in accordance with current edition of the Kentucky Department of Highways Standard Specifications, it shall be maintained in such condition until covered by subsequent construction operations.

Material removed shall include excavation to the designated depths, transporting of removed materials from points to final use, disposal of surplus materials, and the shaping and finishing of all areas to the required lines and grades as shown on the Drawings.

Surplus material will become the responsibility to the CONTRACTOR to dispose of off the project limits at a site acquired by the CONTRACTOR at no expense to the OWNER and approved by the ENGINEER.

Material removal carried below the indicated depths, except when directed by the ENGINEER, shall be replaced with material satisfactory to the ENGINEER. Additional payment will not be necessitated thereby. All areas of fill shall be constructed to the lines and grades indicated on the Drawings, unless otherwise directed by the ENGINEER.

13.4 PREPARATION OF SUBGRADE

Preparation of subgrade for pavements, bases, curbs, gutters, sidewalks, and retaining walls shall conform to the required grades and the specified depth below the designated surface of the particular item for which it is intended. All soft and spongy places in the subgrade shall be excavated and backfilled with No. 2 coarse aggregate below the base course level, then brought to grade with dense graded aggregate. Once the subgrade has been shaped to the proper template and compacted to the satisfaction of the ENGINEER and in accordance with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, current edition, it shall be maintained in such condition until covered by subsequent construction operations. Any portion of the subgrade which, cannot be shaped and compacted by the use of machinery shall be prepared by the use of hand tools.

13.5 UTILIZATION OF REMOVED MATERIALS

All suitable material removed shall be used, insofar as it is practicable, in constructing the fill and embankments shown on the Drawings provided that the ENGINEER approves. The contractor shall dispose of any material in excess or unsatisfactory for such use.

13.6 CONSTRUCTION TOLERANCES

The CONTRACTOR shall make every reasonable effort to construct the project uniformly. Tolerances which will be allowed will be according to the KDOH Standard Specifications for Road and Bridge Construction, current edition.

No payment will be made for any earthwork performed outside the limits shown on the Drawings or those approved by the ENGINEER. No extra material shall be removed or placed outside of these limits without permission.

13.7 STANDARD SPECIFICATIONS

To the extent that they do not conflict with the content of the Plans and Contract Documents and Specifications, Sections 109, 203, 204, 205, 206, 207, 212, and 213 of KDOH Standard Specifications, current edition, are incorporated into this Technical Specifications.

13.8 PAYMENT

Payment for this Section will be at the Contact Unit Price per cubic yard as quoted and shall be full compensation for all Work required under this section. **No direct measurement shall be**

made. Payment shall be based on estimated quantities. All labor, materials, equipment, proof testing, excavation and disposal of excavated material shall be incidental to Earthwork.

TECHNICAL SPECIFICATIONS

SECTION 14 - MOBILIZATION AND DEMOBILIZATION

14.1 SCOPE

Work for this Section shall include all labor, excavation, materials, equipment, and incidentals necessary to mobilize and demobilize all personnel, equipment, supplies, and incidentals to the project site; to establish offices, buildings, and other facilities, that are necessary for performing the work; to accomplish all other work or operations that must be performed, including costs that must be incurred, to begin work on the project in accordance with the Kentucky Department of Highway Standard Specifications, Section 110.

14.2 MOBILIZATION

The Contractor shall not bid an amount for Mobilization that exceeds 5 percent of the sum of the total amounts bid for all other items in the Bid Proposal, excluding Mobilization, Demobilization, and contingent amounts established for adjustments and incentives, if applicable. The LFUCG will automatically adjust any bids in excess of this amount for bid comparisons. The LFUCG will base the award on the maximum allowable bid of 5 percent. If any errors in unit bid prices for other Contract items in a Contractor's Bid Proposal are discovered after bid opening and such errors reduce the total amount bid for all other items, excluding Mobilization, Demobilization, and contingent amounts established for adjustments and incentives, so that the percent bid for mobilization is larger than 5 percent, the LFUCG will adjust the amount bid for mobilization to 5 percent of the sum of the corrected total bid amounts

14.3 DEMOBILIZATION

The Contractor shall not bid an amount for Demobilization that is less than 3 percent of the sum of the total amounts bid for all other items in the Bid Proposal, excluding Mobilization, Demobilization, and contingent amounts established for adjustments and incentives, if applicable. The LFUCG will automatically adjust any bids that are less than this amount up to 1.5 percent to compare Bid Proposals and award the Contract. The LFUCG will award a Contract for the actual amount bid when the amount bid for demobilization exceeds 1.5 percent, or the LFUCG will award the Contract for the adjusted bid amount when the amount bid for demobilization is less than 1.5 percent.

14.4.1 PAYMENT

Mobilization is included in the Bid Proposal as a separate bid item and the LFUCG will make partial payment for Mobilization in two equal or approximately equal payments. The LFUCG will make the first payment on the first pay estimate on which the Contractor's total earned value on Contract items, other than Mobilization, exceeds \$1,000. The LFUCG will make the second payment on the first pay estimate on which the Contractor has earned 5 percent or more of the total Contract amount for Contract items, other than Mobilization. The LFUCG will make both payments simultaneously when these requirements are met at the same time.

TECHNICAL SPECIFICATIONS

SECTION 15 – PORTABLE CHANGEABLE MESSAGE SIGN

15.1 SCOPE

Work will consist of the placement of the Portable Changeable Message Sign at a location to be determined by the OWNER. Work for this Section shall include all labor, materials, equipment, and incidentals necessary to complete Work.

15.2 BASIS OF PAYMENT

Accepted quantities for Portable Changeable Message Sign will be paid for at the respective Contract Unit Price as quoted (which shall be full compensation for all Work under this Section) and paid per each satisfactorily placed. All labor, materials, and equipment shall be incidental to Portable Changeable Message Sign.

TECHNICAL SPECIFICATIONS

SECTION 16 - SILT FENCE, SILT TRAPS

16.1 SCOPE

This Work consists of the placement of silt fence and traps to control erosion in accordance with the plans and the contract documents and specifications. Work in this section shall also conform to Section 213 and 827 Kentucky Department of Highways (KDOH) Standard Specifications, current edition and the LFUCG Standard Drawings, latest edition. Work for this section shall include all labor, materials, equipment, excavation, cleaning and incidentals necessary to complete the work.

16.2 BASIS OF PAYMENT

Accepted quantities for Silt Fence and Silt Traps shall be paid for at their respective Contract Unit Prices as noted below. (which shall be for all Work required under this Section) and paid as noted below satisfactorily placed. All labor, materials, equipment, cleaning, and excavation shall be incidental to the installation and cleaning.

Silt Trap	Each (EA)
Silt Fence	Linear feet (LF)

TECHNICAL SPECIFICATIONS

SECTION 17 - CONCRETE SIDEWALK

17.1 Scope:

This item involves the construction of a concrete sidewalk as shown on the plans, and as directed by the ENGINEER. This Work consists of the construction of sidewalks (4 1/2 inches thick) on a thoroughly compacted subgrade in accordance with the Plans, Contract Documents and Specifications and Lexington-Fayette Urban County Government Drawing 303, current edition. Work in this section shall also conform to Sections 206, 207, 505, 601, 801, 802, 803, 804, 805 and 823 of the Kentucky Department of Highways (KDOH) Standard Specifications, current edition, but only to the extent that these KDOH sections do not conflict with the content of the Plans, Contract Documents and Specifications and LFUCG Standard Drawings.

All concrete used shall be Class A concrete on which Type 2 (white pigmented) curing compound is used. Any placing of concrete must be immediately preceded by inspection and approval of the Engineer.

Expansion joints shall be placed at 32-foot intervals. Expansion joint material shall be of approved quality and of 1/2 inch thickness. Expansion joints shall extend entirely and continuously through the concrete and all excess expansion joint material shall be trimmed to conform to the surface of the concrete.

Place sidewalk by use of side forms or an approved slip form method according to Subsection 601.03.12. Deposit concrete on a moistened subgrade strike, and compact to the required thickness, and tamp sufficiently to bring mortar to the surface. Then, finish the surface smooth and even with wooden floats and brushes and broom for texturing. Before giving the concrete sidewalk the final finish and brooming, check the surfaces with a 10-foot straightedge and eliminate all irregularities of more than 1/4 inch. Edges and division marks shall be finished in a neat and workmanlike manner through use of the proper concrete finishing tools. Division joints in sidewalks shall be 3/4 inch in depth, at four foot intervals.

When replacing portions of existing concrete sidewalks and entrance pavements, next to portions that will not be removed, the concrete will be removed to the nearest transverse joint or division mark beyond the matching point indicated on the Plans. The existing concrete shall be sawed by an approved concrete saw. In the absence of a transverse joint or division mark, the sawing shall be performed as directed by the Engineer. It will not be permissible to place new concrete against the ragged edges of concrete caused by removal devices such as hand tools and air hammers.

Work for this section shall include all labor, materials, equipment, excavation and incidentals necessary to complete the Work.

17.2 Payment

Accepted quantities for Concrete Sidewalks shall be paid for at their respective Contract Unit Prices as quoted (which shall be for all Work required under this Section) and paid per square yard of specified Concrete Sidewalk satisfactorily placed. All labor, materials, equipment, and excavation shall be incidental to the placement of Concrete Sidewalks.

TECHNICAL SPECIFICATIONS

SECTION 18 - CONSTRUCTION STAKING

18.1 SCOPE

The CONTRACTOR will furnish and be responsible for all staking, including the initial staking. The CONTRACTOR shall bear the cost of all staking necessary to control and complete the Work according to the specifications to the lines and grades shown on the plans.

The survey baseline has been previously established. Should, prior to beginning Work on this project, part or all of the baseline be destroyed, it will be the CONTRACTOR'S responsibility to re-establish this baseline from the reference points shown on the plans. It will be the CONTRACTOR'S responsibility to establish all office projection centerlines shown on the plans. Should, during the course of construction of this project, any construction stakes be destroyed by others, it will be the CONTRACTOR'S responsibility to reset the stakes at no additional cost to the OWNER.

The CONTRACTOR'S staking party shall be under the general supervision of a Registered Land Surveyor. It shall be definitely understood that supervision of the resetting of construction staking is solely the responsibility of the CONTRACTOR and any errors or inaccuracies resulting from the operations of the construction staking party shall be corrected at no cost to the OWNER.

It will be the OWNER'S responsibility to make all measurements for determining final quantities to be used for basis of final payment on items of Work.

To the extent that it does not conflict with the content of the Plans and Contract Documents and Specifications, Section 201 of KDOH Standard Specifications, current edition, is incorporated into this technical specification.

18.2 PAYMENT

Construction Staking will be paid for at the Contract Unit Price per lump sum as quoted and this shall be full compensation for all Work required under this Section. All labor, materials, and equipment etc. shall be included in this Work.

TECHNICAL SPECIFICATIONS

SECTION 19 – REMOVE STRUCTURE

19.1 SCOPE

Work will consist of the removal of bridges (dimensions as specified in the Plans). Work for this Section shall conform to the Kentucky Department of Highways Standard Specifications, Section 203, current edition and shall include all labor, materials, equipment, excavation, disposal, sawcutting and incidentals necessary to complete Work. Removal areas will terminate at fully sawed joint faces.

Remove all existing structures, including foundations conforming to the definition of the bridge. CONTRACTOR shall take ownership of the structure and dispose of them according to Subsection 202.03. Immediately remove any material entering the channel due to removing the existing structure.

19.2 BASIS OF PAYMENT

Accepted quantities for Remove Structure will be paid for at the respective Contract Unit Price as quoted (which shall be full compensation for all Work under this Section) and paid per lump sum satisfactorily removed. All labor, materials, excavation, and equipment shall be incidental to the Remove Structure.

TECHNICAL SPECIFICATIONS

SECTION 20 - EROSION CONTROL MAT (SC150BN or equal)

20.1 SCOPE

Erosion Control Blanket shall be a machine-produced 100% biodegradable mat with a 70% agricultural straw and 30% coconut fiber blend matrix.

The blanket shall be of consistent thickness with the straw and coconut fiber evenly distributed over the entire area of the mat. The blanket shall be covered on the top and bottom sides with 100% biodegradable natural organic fiber netting woven into an approximate ½" x 1" mesh. The blanket shall be sewn with biodegradable thread on 1.5" centers.

Straw/Coconut fiber erosion control blanket shall have the following properties:

Material Content

Matrix	70% straw fiber (0.35 lbs/yd ²) (0.19 kg/m ² +) 30% coconut fiber (0.15 lbs/yd ²) (0.08 kg/m ²)
Netting	Both sides woven 100% biodegradable natural organic fiber (9.3 lbs/1,000 ft (4.5 KG/100 sm)
Thread	Biodegradable

20.2 PAYMENT

Accepted quantities will be paid for at the Contract Unit Price per square yard as quoted and shall be full compensation for all Work required under this section.

TECHNICAL SPECIFICATIONS

SECTION 21 - SEEDING AND PROTECTION

21.1 Description.

This work consists of placing topsoil, preparing the seed bed, and placing and incorporating seed, agricultural lime, commercial fertilizer, and placing mulching material. Perform this work in areas shown on the plans for seeding and mulching. Perform seeding and mulching after completing all work in the area and within 7 days of obtaining final grade. If it is anticipated that future work may disturb an area, place temporary seed, and provide mulch according to this spec and perform seeding and mulching after all work is completed. If the Contractor disturbs a final area, then the Contractor shall restore this area. Use all excavation material in the work. Alternatively legally use, recycle, or dispose of all excavated materials according to this spec.

21.2 Testing of Soil or Topsoil.

When a Soil Analysis Test of the soil or topsoil is required in the plans, use the following sampling frequency to determine the lime required:

A. When an area is near final grade, perform Standard Soil Analysis Test to measure the soil acidity or alkalinity (pH) if no topsoil is to be placed. This testing will determine the soil requirements for lime. If the soil requirements are different than the standard lime mixture ratio application rates then the standard application rate shall be adjusted up or down such that the soil requirements are met. If liquid lime is used then use the following application table to achieve a pH of 6.5 or greater. Calculate the difference between the soil pH and 6.5 pH.

B.

Difference	0.25	0.50	0.75	1.0
Application rate in gals/ac	2.5	5	10	20

Example: Soil Analysis Test pH=5.75 required pH=6.5 difference= .75 required application rate is 10 gals/ac Only use Liquid lime on the QPL list. Provide the Engineer with the Liquid Lime manufacturers written application rate. The Engineer will only accept printed application rates.

There will be no change in the mixture ratio. The sampling frequency is one sample every 10 acres per project side or one sample per project side whichever is greater. A sample consist of 15 soil cores in a random pattern spaced at a minimum of 500 feet apart. Sample any change in soil. Soil changes can be seen as color and/or texture changes.

If a Soil Analysis Test of the soil is not required by the plans, use the standard application rates for lime and commercial fertilizer.

21.3 Lime.

Obtain granular or liquid lime from a agricultural lime dealer or manufacturer whose brands are grades registered or licensed by the State of KY, Department of Agriculture. The granular or liquid lime standard grade is Ag-ground 90+. Ag-ground 90+ is defined as agricultural ground limestone, having a total neutralizing power (TNP) of 90 percent or more, at least 40 percent passing a No. 100 sieve and 95 percent passing a No. 8 sieve. Apply the granular or liquid lime standard grade Ag-ground 90+ at the standard application rate of 92 pounds per 1000 square feet (2 tons per acre).

If using liquid lime apply liquid lime at a rate of 5 gals/acre unless otherwise required per the soil or topsoil Soil Analysis Test. Provide the Engineer with the Liquid Lime manufacturers written application rate. The Engineer will only accept printed application rates. Only use Liquid lime on the QPL list.

If testing of the soil or topsoil was performed, the lime required will be such that a growing environment of slightly acidic (pH 6.5) can be reached. The application rate of the standard grade lime Ag-ground 90+ will be adjusted up or down to achieve this condition and reported to the Owner for approval. No lime is required for the soil or topsoil if the test shows a slightly acidic condition.

21.4 Commercial Fertilizer.

Obtain commercial fertilizer from a dealer or manufacturer whose brands are grades registered or licensed by the State of KY, Department of Agriculture.

Commercial fertilizer may be dry or liquid. Apply standard commercial fertilizer 10-20-10 evenly over the surface at a standard dry application rate of 20 pounds per 1000 square feet. Furnish liquid application rates for approval by the Owner.

The Contractor may provide other commercial fertilizer mixture ratios, however, ensure that the ratio meets or exceeds the standard commercial fertilizer ratio of 10-20-10 by providing an application rate specific for that ratio. The Owner will approve this application rate that is specific to that ratio provided by the Contractor.

For areas of inter-seeding apply commercial fertilizer 12-12-12 over the affected area at the above rate.

For commercial fertilizer second application the method, mixture, and rate is broadcast 12-12-12 evenly over the surface without incorporation into the soil at a rate of 10 pounds per 1000 square feet.

21.5 Topsoil.

If placing topsoil as specified in the plan, then stockpile off project site topsoil for testing and/or stockpile stripped topsoil from the project for testing. Perform the Soil Analysis Test.

from these stockpiles to determine the percent of organic matter present. The topsoil shall contain between 4 percent and 20 percent organic matter as determined by loss on ignition of samples oven dried to constant weight at 212 °F and consist of fertile, loose, friable, and loamy material that contains humus material. For topsoil to be considered loamy, ensure that the fraction passing the No. 10 sieve does not contain more than 40 percent clay.

The Owner will review the sample test results and approve the stockpiles for use. Stockpiles outside the above limits will not be used.

Stripped topsoil from the R/W limits will be from the upper most layers of the excavation areas. Remove all heavy grass, weeds, and other vegetation before stripping topsoil from the excavation areas.

A mixture of 1 part compost and 2 parts topsoil will be treated as topsoil.

21.6 Seeds.

Furnish grass seed from a grass seed dealer or grower whose brands are grades registered or licensed by the State of KY, Owner of Agriculture or from the approved list of grass seed dealers or growers on file with Owner. Furnish the kind and type of grass seed required that meets current specifications on file with the Owner as to percentage purity, percentage weed seed, and percentage germination.

Turf grass germination rates specifications are shown below in Table 659.07-1 to provide an understanding of the specifications on file with the Owner along with information to understand what is required.

TABLE 21-1 GERMINATION RATES

Species	Minimum Percent	High Quality Percent
Kentucky Bluegrass	80	85
Fine Fescue	85	90
Perennial Ryegrass	85	90
Annual Ryegrass	85	90
Tall Fescue	85	90
Creeping Red Fescue	85	90

If high quality is not shown on the plans, then the minimum germination rate is required. Mark the test date on seed bags. Furnish seeds as separate species and cultivars, packaged together or bagged separately, and labeled, tagged, or marked according to ORC 907.03. Sow seeds within 9 months of the testing date. The Owner reserves the right to test, reject, or approve all seed after delivery.

21.7 Site Preparation.

Before placing topsoil or seed remove rock or other foreign material of 3 inches or greater in any dimension, from all areas except as listed below. Remove stones 1-inch or greater in any dimension from all seed areas from in front of residences, commercial properties, etc.; between curb and sidewalks; or as shown on the plans.

Finish the area in such a manner that seeding, place sod, planting, or, placing topsoil can proceed without additional soil preparation.

Apply commercial fertilizer, lime, or other soil amendments including compost to the soil or topsoil surface in separate operations. Incorporate the commercial fertilizer, granular lime, or other soil amendments, including compost either separately or together, into the soil or topsoil to a depth of 2 to 4 inches. Do not mix Liquid lime into the soil or topsoil. Only apply liquid lime to the top of the soil or topsoil. Furnish a smooth surface for the seed or topsoil by tracking with a dozer or by other methods. If the site is inaccessible to a dozer and other methods do not provide results equivalent to hand raking, hand rake these areas. Ensure that the surface is uniform, free of gullies, rivulets, crusting, and caking. Finely grade the surface for seed or topsoil for slopes 4:1 or flatter, and grade all other slopes. Rake or open the surface with a dozer cleats or otherwise loosen the surface of these areas to a depth of 1 inch (25 mm) immediately before covering with topsoil. Remove raked up material from the area.

21.8 Placing Topsoil.

If shown on the plans, place topsoil in loose lifts that construct a 4-inch compacted depth. The surface of the topsoil shall be such that the final grade as shown on the cross-sections is met. Track the area with a dozer to compact and provide good contact between the topsoil and the surface.

The Contractor may place topsoil by using pneumatic, or hydraulic methods. If using pneumatic or hydraulic methods to place the topsoil, the Contractor may place the top 1-inch with a mix of seed, commercial fertilizer, lime, and other soils amendments. This mixture will be 1 part compost and 2 parts topsoil. Do not apply mulch to this surface. The compost is the mulch.

21.9 Seeding Methods.

Apply seed to prepared areas. If the prepared areas to be seeded become compacted before seeding, loosen the surface using disks, rakes, or other methods. Thoroughly mix all seed, and evenly sow the seed over the prepared areas at the required rates. Do not sow seed during high winds. For slopes subject to windy conditions, seed using hydraulic methods only. Operate equipment in a manner to ensure complete coverage of the entire area to be seeded.

If broadcast seeding, seed between August 15 to October 30. If necessary to seed before August 15, but after March 1 increase the seeding rates by 5 percent. Between March 1 and

October 30, the Contractor may use hydro seeding, which applies the mulch, seed, water, and commercial fertilizer in the same operation.

Between October 30 and March 1, apply temporary seed. With the Engineer's approval, the Contractor may apply permanent seed between October 30 and March 1 on projects started and completed within the same calendar year.

Seed before or concurrently with all required erosion control items.

If broadcast seeding, perform the following, immediately after sowing, to provide good seed-soil contact:

- A. For flat surfaces, lightly rake the area then roll.
- B. For slopes, track the area with a dozer.

Temporary Seeding and Protection

Apply an Annual Rye seed mix at a rate of 100 pounds per acre during the months of March through August. In addition to the Annual Rye, add 10 pounds of German Foxtail-Millet when performing temporary seeding during the months of September through February, apply Winter Wheat or Rye Grain at a rate of 100 pounds per acre. Obtain the Engineer's approval prior to the application of the seed mixture.

Promptly perform the work of temporary seeding and protection to prevent visible erosion. Protect all seeded areas with a mulch that precludes siltation. Perform temporary seeding and protection under the following conditions.

- When it is impractical to bring an area to final line, grade, and finish so that permanent seeding and protection work can be performed without subsequent serious disturbance by additional grading.
- When soil erosion occurs, or is considered to be a potential problem on areas where construction operations are temporarily suspended.
- When an immediate cover would be desirable to minimize erosion, siltation, or pollution.
- On temporary roadways that are expected to remain in place for longer than 30 days and that are constructed of erodible materials.

21.10 Mulching Operation.

Mulch materials consist of straw, compost, or wood fiber for 3:1 or flatter slopes. The Contractor may specify which mulch to use, if it is not shown on the plans. Use mulch that is reasonably free of weed seed, foreign materials, or other materials that would prohibit seed germination. Do not mulch during high winds. For slopes subject to windy conditions mulch using hydraulic methods only. Within 24 hours after seeding an area, evenly place mulch. Immediately replace mulch that becomes displaced.

Temporary Mulch

Obtain the Engineer's approval for the mulch before use. When Temp Seeding and Protection would be required, but the time of exposure is 30 day or less, perform the work of temporary mulching to prevent visible erosion. Place temporary mulch to an

approximate 2 inch loose depth (2 tons per acre) and anchor it into the soil by mechanically crimping it into the soil surface or applying tackifier to provide a protective cover. Regardless of the anchoring method used, ensure the protective cover holds until disturbance is required or permanent controls are installed.

21.11 Straw Mulch.

Straw mulch consists of straw. Evenly place straw mulch over all seeded areas at the following rates:

Seeding Period	Rate
From March 15 to October 30	2 tons per acre
From October 31 to March 14	3 tons per acre

Keep straw mulching materials in place by applying an asphalt emulsion at a minimum rate of 60 gallons per ton of straw mulch or by applying tackifiers according to the manufacturer's recommendations. Apply an additional application at a rate of 30 gallons per ton of straw mulch to shoulder areas, starting at the berm edge and extending out for a distance of 10 feet. Use an emulsion that is nontoxic to plants and prepared in a manner that will not change during transportation or storage.

21.12 Wood Fiber Mulch.

Wood fiber mulch consists of pure wood fibers manufactured expressly from clean wood chips. Ensure that the chips do not contain lead paint, varnish, printing ink, and petroleum based compounds. Do not use wood fiber mulch manufactured from recycled materials of unknown origin such as sawdust, paper, cardboard, or residue from chlorine-bleached pulp and paper mills.

Ensure that the wood fiber mulch maintains uniform suspension in water under agitation and blends with grass seed, commercial fertilizer, and other additives to form a homogeneous slurry. Use manufacturer-approved tackifiers.

Using standard hydraulic mulching equipment, evenly apply the slurry over the soil surface in a one-step operation. Apply slurry from March 1 to October 30 at the following rates:

Surface	Rate
Slopes 3:1 or flatter	46 pounds per 1000 square feet

21.13 Watering.

Thoroughly water all permanent seeded areas after the seed has germinated. Apply a total rate of 300 gallons per 1000 square feet in at least 2 applications spread over 7 days. Apply the water using a hydro-seeder or a water tank under pressure with a nozzle that produces a spray that will not dislodge the mulch material.

Perform a secondary water application between 7 and 10 days after the primary applications. If 1/2-inch or greater of rainfall has occurred within the first 7-day period, the Contractor may delay or omit the secondary application, depending on weather conditions.

21.14 Maintenance.

Maintain all seeded and mulched areas until final inspection. Repair damaged areas to the original condition and grade.

21.15 Mowing.

The Engineer may require mowing before permanent seeding and during the growing season following permanent seeding. The Engineer will notify the Contractor of when to begin each mowing. Use suitable mowing equipment of the rotary, flail, disk, or sickle type. Do not bunch or windrow mowed vegetation. Mow to a final cutting height of no less than 6 inches. If necessary to achieve the cutting height, make more than one pass with the mower.

21.16 Repair Seeding and Mulching.

Repair all damage or erosion of the seeded and mulched areas before the completion of the project. Rework or reshape slopes, and bring in additional material, as necessary, using whatever equipment is necessary to restore slopes to grade. Seed and mulch repaired areas according to this specification. As an alternative, the Contractor may apply compost to repair areas as specified in this spec.

21.17 Inter-Seeding.

Inter-seeding is seeding existing thin and spotty growing turf using a slit or drill type seeder. Perform inter-seeding only from March 15 to May 15 and from September 1 to October 15. If necessary to achieve good seed-soil contact, mow before seeding according to this spec.

For seeding steep slopes or inaccessible areas, the Contractor may use broadcast or hydraulic seeding methods. Broadcast commercial fertilizer over affected areas as specified in this spec. Water affected areas at the rate specified in in this spec to aid in seed-soil contact.

21.18 Fertilization: 2nd Application.

Once all repair seeding and mulching, and inter-seeding is complete and no earlier than 3 months after seeding, perform a Soil Analysis Test if shown on the plans to determine the need for a second application of commercial fertilizer. Do not apply the second application of commercial fertilizer unless the grass has germinated. Broadcast commercial fertilizer of 12-12-12 evenly over the surface without incorporation at a rate of 10 pounds per 1000 square feet.

21.19 Performance.

The Owner will inspect all seeded areas no earlier than 6 months and no later than 12 months after final seeding. For any area identified without a uniform density of at least 70 percent grass cover, repair seeding and mulching as specified in this spec or perform inter-seeding as specified in this spec, and fertilize as specified in this subsection. Also repair seeding and

mulching or perform inter-seeding, and fertilize seeded areas damaged by traffic or erosion, due to no fault or negligence of the Contractor.

21.21 Basis of Payment.

Accepted quantities under this Section shall be paid for at the Contract Unit Price for Seeding and Protection per square yard as quoted and shall be full compensation for all Work under this Section. Areas to be seeded are to be confined to within the defined construction limits and are subject to the approval of the ENGINEER.

Payment shall be considered full compensation for all materials including lime, fertilizer, water, temporary seeding, temporary mulch, seed and labor required to complete the work described in this Section.

TECHNICAL SPECIFICATIONS

SECTION 22 - SODDING

22.1 SCOPE

This work consists of the application of sod to disturbed surfaces in accordance with the Plans and Contract Documents and Specifications. Work in this section shall also conform to Sections 212 and 827 of the Kentucky Department of Highways (KDOH) Standard Specifications, current edition, but only to the extent that these KDOH sections do not conflict with the content of the Plans and Contract Documents and Specifications.

At locations specified in the Contract or by the ENGINEER, prepare the sod bed, incorporate fertilizer and agricultural limestone as needed and place the sod flush with any adjacent seeded or turfed area, pavement, curb, or other structure. Incorporate 10-10-10 fertilizer and agricultural limestone into a three (3) inch deep sod bed at a rate of 28 lbs/1,000 sq.ft. and 150 lbs/sq.ft. respectively.

ENGINEER will make an inspection to determine the acceptability of the sod between 3 and 6 months after completion of the project. Ensure that at least 90% is alive with no area of dead sod larger than one square yard.

Use sod that is either well rooted KY Bluegrass or Tall Fescue sod. However, obtain ENGINEER'S approval prior to using Tall Fescue sod in residential areas. Use sod that is completely free from noxious weeds and reasonably free from other objectionable grasses and weeds, stones or other foreign materials detrimental to the development and future maintenance of the sod. Obtain sod from sources that are covered with grass having a maximum height of 3 inches. Obtain approval of the selected source prior to cutting.

Work for this section shall include all labor, materials, equipment, excavation and incidentals necessary to complete the Work.

22.2 PAYMENT

Accepted quantities for Sodding shall be paid for at the Contract Unit Price as quoted (which shall be full compensation for all Work required under this Section) and paid per square yard of Sodding satisfactorily placed. All labor, materials, equipment, and excavation shall be incidental to the placement of Sod.

TECHNICAL SPECIFICATIONS

SECTION 23 - PAVEMENT MARKINGS

23.1 SCOPE

New traffic markings in the Work area shall generally be of the kind and in the locations indicated in this specification and on the schematic drawings in this Document. The Contractor shall, as he/she deems necessary, collect sufficient supplemental survey information to locate and identify all existing traffic markings, cross walks, turn/lane direction arrows, stop bars, and other traffic markings in the Work area. He/she shall install thermoplastic markings as soon as Work is sufficiently complete to allow installation of permanent markings. Until the permanent installation is completed, the contractor shall maintain temporary markings consistent with needs and in accordance with the *Manual on Uniform Traffic Control Devices*. For field dispensed lane markings and for preformed markings to the extent that there is no conflict with provisions herein, the work will conform to KDOH Sections 749, 847, and 848.

23.2 MATERIALS AND WORKMANSHIP

All markings shall be of thermoplastic.

Lane direction arrows, crosswalk markings, and stop bars shall be of the preformed thermoplastic type, composed of hydrocarbon resin, pigments, binders, and glass beads, which have been factory produced as a finished product to meet the requirements of the *Manual on Uniform Traffic Control Devices*. The thermoplastic shall conform to AASHTO designation M249-79 (86) with the exception of the relevant differences due to material being supplied in a preformed condition. Turn arrows shall be FHWA Standard No. 330241 and straight arrows shall be No. 330240; combination turn/thru arrows shall be No. 330142. The arrows, crosswalk markings, and stop bars should equal or exceed the specifications defined by Flint Trading, Inc.

The following are general requirements for the various markings:

Graded Glass Beads - The material must contain a minimum of 30 percent grades glass beads by weight. The beads shall be clear and transparent with no more than 20 percent consisting of irregular or fused spheroids and silica. The index of refraction shall not be less than 1.50.

Pigment - All markings for this contract except edge markings are white. A sufficient amount of titanium dioxide must be used to ensure a color similar to Federal Highway White, Color No. 17886, as per Federal Standard 595. The yellow edge markings shall contain sufficient yellow pigment to ensure a color similar to Federal Highway Yellow, Color No. 13655.

Skid Resistance - The surface must provide a minimum skid resistance value of 50 BPN when tested by ASTM E303.

Thickness - Preformed material must be supplied at a minimum thickness of 120 mils.

Environmental Resistance - The material must be resistant to deterioration due to exposure to sunlight, water, oil, gasoline, salt, or adverse weather conditions.

Application to Asphalt - Preformed material shall be applied using a propane torch per recommendations of the manufacturer. The material must be able to be applied at air and road temperatures of 32 degrees F. without any preheating of the pavement. The pavement must be clean, dry, and free of debris at the time of application. The instructions with each package shall be followed to assure proper application. While the material is still hot and receptive, the surface shall be flooded with a surplus of glass beads.

Application to Portland Cement Concrete - Requirements are the same as for asphalt except that a primer/sealer must be used prior to application to assure proper adhesion. This step shall conform to pertinent manufacturer's recommendations.

Packaging - The material shall be packaged in plastic film and with cardboard stiffeners as necessary to prevent damage by handling and transporting.

23.3 MEASUREMENT AND PAYMENT

Accepted quantities for Pavement Markings shall be paid for at the Contract Unit Price as quoted (which shall be full compensation for all Work required under this Section) and paid per linear foot of Pavement Markings satisfactorily placed. Payment for temporary markings is included in payment for Maintenance of Traffic. The Work shall include all labor, materials, and costs necessary or incidental to supplying and installing markings in a workmanlike manner.

TECHNICAL SPECIFICATIONS

SECTION 24 - DETECTABLE WARNING SURFACE TILE

24.1 SCOPE OF WORK

This Section specifies the type and installation of the Detectable Warning Surface Tiles where indicated and is concurrent with the installation of concrete sidewalk ramps. Tiles shall be Access Tile (Tactile System) Cast in Place Replaceable Tile manufactured by Access Products, Inc. (241 Main Street Suite 100 – Buffalo, NY 14203, Tel: 888-679-4022, Fax: 877-679-4022, email for Tech Support: tech@accessproducts.com).

24.2 RECEIVING, STORAGE AND HANDLING

Tiles shall be picked up from the Division of Streets, Road & Forestry during business hours (8:00 AM – 4:30 PM). The tiles shall be released on an as needed basis for the immediate work to be completed and not stock piled by the Contractor. If any tiles are lost or damaged by the contractor such that LFUCG must furnish additional tiles, the cost of the additional tiles will be deducted from the Contractor's payments.

24.3 SITE CONDITIONS

Environmental Conditions and Protection: Maintain minimum temperature of 40° F in spaces to receive tactile tiles for at least 48 hours prior to installations, during installation, and for not less than 48 hours after installation. Tiles shall be within +/- 10% of ambient temperature when placed. Subsequently, maintain minimum temperature of 40° F in areas where work is completed. The use of water for work, cleaning or dust control, etc. shall be contained and controlled and shall not be allowed to come into contact with nearby structures, fixtures, motor vehicles, pedestrians, etc. Provide barricades or screens to protect passengers or public. Disposal of any potentially hazardous liquids or other materials shall be made in accordance with federal state and local laws and ordinances. Cleaning materials shall have code acceptable low VOC solvent content and low flammability if used on the site.

24.4 INSTALLATION

Installation shall be performed as to Access Tile Replaceable Cast in Place Detectable/Tactile Warning Surfaces Section 32 17 26 Part 3.01 Installation.

A. During the Replaceable Cast in Place Detectable/Tactile Warning Tile installation procedures, ensure adequate safety guidelines are in place and that they are in accordance with the applicable industry and government standards.

B. Prior to placement of the Replaceable Cast in Place Detectable/Tactile Warning Tile system, review manufacturer's instructions and contract drawings with the Contractor prior to the construction and refer any and all discrepancies to Project Engineer.

C. The specifications and related materials shall be in strict accordance with the contract documents and the guidelines set by their respective manufacturers. Not recommended for asphalt applications.

D. The physical characteristics of the concrete shall be consistent with the contract specifications while maintaining a slump range of 4 - 7 to permit solid placement of the Replaceable Cast in Place Detectable/Tactile Warning Tile system. An overly wet mix will cause the tile to float. Under these conditions, suitable weights such as sandbags shall be placed on tile.

E. The concrete pouring and finishing operations require typical mason's tools, however, a 4' long level with electronic slope readout, and 10 lb. sandbags are specific to the installation of the Replaceable Cast in Place Detectable/Tactile Warning Tile system.

F. The factory-installed plastic sheeting must remain in place during the entire installation process to prevent the splashing of concrete onto the finished surface of the tile.

G. When preparing to set the tile, it is important that no concrete be removed in the area to accept the tile. It is imperative that the installation technique eliminates any air voids under the tile. Gaps in the tile perimeter allow air to escape during the installation process.

H. The concrete shall be poured and finished true and smooth to the required dimensions and slope prior to the tile placement. Immediately after finishing concrete, the electronic level should be used to check that the required slope is achieved. The tile shall be placed true and square to the curb edge in accordance with the contract drawings. The Replaceable Cast in Place Detectable/Tactile Warning Tiles shall be tamped (or vibrated) into the fresh concrete to ensure that the field level of the tile is flush to the adjacent concrete surface. The embedment process should not be accomplished by stepping on the tile as this may cause uneven setting which can result in air voids under the tile surface. The contract drawings indicate that the tile field level (base of truncated dome) is flush to adjacent surfaces to permit proper water drainage and eliminate tripping hazards between adjacent finishes.

I. In cold weather climates it is recommended that the Replaceable Cast in Place Detectable/Tactile Warning Tiles be set deeper such that the top of domes are level to the adjacent concrete on the top and sides of ramp. This installation will reduce the possibility of damage due to snow clearing operations. Care should be taken to finish the concrete on the side of the tile with the lower elevation, adding channels to allow water to drain from the field surface of the tile.

J. Immediately after placement, the tile elevation is to be checked to adjacent concrete. The elevation and slope should be set consistent with contract drawings to permit water

drainage to curb as the design dictates. Ensure that the field surface of the tile is flush with the surrounding concrete and back of curb so that no ponding is possible on the tile at the back side of curb.

K. While concrete is workable, a 1/8" radius edging tool shall be used to create a finished edge of concrete, then a steel trowel shall be used to finish the concrete around the tile's perimeter, flush to the field level of the tile.

L. During and after the tile installation and the concrete curing stage, it is imperative that there is no walking, leaning or external force placed on the tile that may rock the tile causing a void between the underside of tile and concrete.

M. Following tile placement, review installation tolerances to contract drawings and adjust tile before the concrete sets. Suitable weights of 10 to 25 lb each may be required to be placed on each tile as necessary to ensure solid contact of the underside of tile to concrete.

N. Following the concrete curing stage, protective plastic wrap is to be removed from the tile surface by cutting the plastic with a sharp knife, tight to the concrete/tile interface. If concrete bled under the plastic, a soft brass wire brush will clean the residue without damage to the tile surface.

O. Tiles can be cut to custom sizes, or to make a radius, using a continuous rim diamond blade in a circular saw or mini-grinder. Use of a straightedge to guide the cut is advisable where appropriate.

24.5 REPLACING TILES, PROTECTING AND MAINTENANCE

A. Protect tiles against damage during construction period to comply with Tactile Tile manufacturer's specification.

B. Protect tiles against damage from rolling loads following installation by covering with plywood or hardwood.

C. Replace tiles by method specified by Tactile Tile manufacturer.

D. Comply with manufacturer's maintenance manual for cleaning and maintaining tile surface. It is recommended to perform annual inspections for safety and tile integrity.

24.6 BASIS OF PAYMENT

Accepted quantities under this section shall be paid for at the unit bid price per square foot for the appropriate size of Detectable Warning Surface Tile installed. Payment shall be considered full compensation for all materials and labor required to complete the work described in this section.

TECHNICAL SPECIFICATIONS

SECTION 25 – STONE WALL

25.1 PART 1 – GENERAL

1.01 SUMMARY

- A. This Section includes furnishing all materials and labor required for the design and construction of a precast concrete modular block (PMB) retaining wall with or without geosynthetic reinforcement. Precast modular block retaining wall blocks under this section shall be cast utilizing a wet-cast concrete mix and exhibit a final handling weight in excess of 1,000 pounds (450 kg) per unit.
- B. Scope of Work: The work shall consist of furnishing materials, labor, equipment and supervision for the construction of a precast modular block (PMB) retaining wall structure in accordance with the requirements of this section and in acceptable conformity with the lines, grades, design and dimensions shown in the project site plans.
- C. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 31, Division 32 and Division 33 also apply to this Section.

1.02 PRICE AND PAYMENT PROCEDURES

- A. Allowances. No allowance shall be made in the price of the retaining wall for excavation beyond the limits required for retaining wall construction as shown on the project plans. The cost of excavation for the purposes of site access shall be the responsibility of the General Contractor. Removal of unsuitable soils and replacement with select fill shall be as directed and approved in writing by the Owner or Owner's representative and shall be paid under separate pay items.
- B. Unit Prices. In addition to a lump sum price pursuant to completion of the scope of work described in Part 1.01 of this Section, the General Contractor shall provide a unit price per square foot of vertical wall face that shall be the basis of compensation for up to a ten (10) percent increase or reduction in the overall scope of the retaining wall work.
- C. Measurement and Payment.
 - 1. The unit of measurement for furnishing the precast modular block retaining wall system shall be the vertical area of the wall face surface as measured from the top of the leveling pad to the top of the wall including coping. The final

measured quantity shall include supply of all material components and the installation of the precast modular block system.

2. The final accepted quantities of the precast modular block retaining wall system will be compensated per the vertical face area as described above. The quantities of the precast modular block retaining wall as shown on the plans and as approved by the Owner shall be the basis for determination of the final payment quantity. Payment shall be made per square foot of vertical wall face.

1.03 REFERENCES

A. Where the specification and reference documents conflict, the Owner's designated representative will make the final determination of the applicable document.

B. Definitions:

1. Precast Modular Block (PMB) Unit – machine-placed, “wet cast” concrete modular block retaining wall facing unit.
2. Geotextile – a geosynthetic fabric manufactured for use as a separation and filtration medium between dissimilar soil materials.
3. Geogrid – a geosynthetic material comprised of a regular network of tensile elements manufactured in a mesh-like configuration of consistent aperture openings. When connected to the PMB facing units and placed in horizontal layers in compacted fill, the geogrid prevents lateral deformation of the retaining wall face and provides effective tensile reinforcement to the contiguous reinforced fill material.
4. Drainage Aggregate – clean, crushed stone placed within and immediately behind the precast modular block units to facilitate drainage and reduce compaction requirements immediately adjacent to and behind the precast modular block units.
5. Unit Core Fill – clean, crushed stone placed within the hollow vertical core of a precast modular block unit. Typically, the same material used for drainage aggregate as defined above.
6. Foundation Zone – soil zone immediately beneath the leveling pad and the reinforced zone.
7. Retained Zone – soil zone immediately behind the drainage aggregate and wall infill for wall sections designed as modular gravity structures. Alternatively, in the case of wall sections designed with geosynthetic soil reinforcement, the retained zone is the soil zone immediately behind the reinforced zone.
8. Reinforced Zone – structural fill zone within which successive horizontal layers of geogrid soil reinforcement have been placed to provide stability for the retaining wall face. The reinforced zone exists only for retaining wall sections that utilize geosynthetic soil reinforcement for stability.
9. Reinforced Fill – structural fill placed within the reinforced zone.

10. Leveling Pad – hard, flat surface upon which the bottom course of precast modular blocks are placed. The leveling pad may be constructed with crushed stone or cast-in-place concrete. A leveling pad is not a structural footing.
11. Wall Infill – the fill material placed and compacted between the drainage aggregate and the excavated soil face in retaining wall sections designed as modular gravity structures.

C. Reference Standards

1. Design

- a. AASHTO LRFD Bridge Design Specifications, 7th Edition, 2014.
- b. Minimum Design Loads for Buildings and Other Structures – ASCE/SEI 7-10.
- c. International Building Code, 2012 Edition.
- d. FHWA-NHI-10-024 Volume I and GEC 11 Design of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes.
- e. FHWA-NHI-10-025 Volume II and GEC 11 Design of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes.

2. Precast Modular Block Units

- a. ACI 201 – Guide to Durable Concrete
- b. ACI 318 – Building Code Requirements for Structural Concrete
- c. ASTM C33 – Standard Specification for Concrete Aggregates
- d. ASTM C39 – Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
- e. ASTM C94 – Standard Specification for Ready-Mixed Concrete.
- f. ASTM C136 – Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
- g. ASTM C143 – Standard Test Method for Slump of Hydraulic-Cement Concrete.
- h. ASTM C150 – Standard Specification for Portland Cement
- i. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
- j. ASTM C260 – Standard Specification for Air-Entraining Admixtures for Concrete.
- k. ASTM C494 – Standard Specification for Chemical Admixtures for Concrete.
- l. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
- m. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
- n. ASTM C666 – Standard Test Method for Concrete Resistance to Rapid Freezing and Thawing.
- o. ASTM C845 - Standard Specification for Expansive Hydraulic Cement.
- p. ASTM C920 – Standard Specification for Elastomeric Joint Sealants.

- q. ASTM C989 - Standard Specification for Slag Cement for Use in Concrete and Mortars.
 - r. ASTM C1116 - Standard Specification for Fiber-Reinforced Concrete.
 - s. ASTM C1157 - Standard Performance Specification for Hydraulic Cement.
 - t. ASTM C1218 - Standard Test Method for Water-Soluble Chloride in Mortar and Concrete.
 - u. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures.
 - v. ASTM C1611 - Standard Test Method for Slump Flow of Self-Consolidating Concrete.
 - w. ASTM C1776 - Standard Specification for Wet-Cast Precast Modular Retaining Wall Units.
 - x. ASTM D6638 - Standard Test Method for Determining Connection Strength Between Geosynthetic Reinforcement and Segmental Concrete Units (Modular Concrete Blocks).
 - y. ASTM D6916 - Standard Test Method for Determining Shear Strength Between Segmental Concrete Units (Modular Concrete Blocks).
3. Geosynthetics
- a. AASHTO M 288 - Geotextile Specification for Highway Applications.
 - b. ASTM D3786 - Standard Test Method for Bursting Strength of Textile Fabrics Diaphragm Bursting Strength Tester Method.
 - c. ASTM D4354 - Standard Practice for Sampling of Geosynthetics for Testing.
 - d. ASTM D4355 - Standard Test Method for Deterioration of Geotextiles
 - e. ASTM D4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
 - f. ASTM D4533 - Standard Test Method for Trapezoid Tearing Strength of Geotextiles.
 - g. ASTM D4595 - Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method.
 - h. ASTM D4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
 - i. ASTM D4751 - Standard Test Method for Determining Apparent Opening Size of a Geotextile.
 - j. ASTM D4759 - Standard Practice for Determining Specification Conformance of Geosynthetics.
 - k. ASTM D4833 - Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products.

- l. ASTM D4873 – Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples.
 - m. ASTM D5262 – Standard Test Method for Evaluating the Unconfined Tension Creep and Creep Rupture Behavior of Geosynthetics.
 - n. ASTM D5321 – Standard Test Method for Determining the Coefficient of Soil and Geosynthetic or Geosynthetic and Geosynthetic Friction by the Direct Shear Method.
 - o. ASTM D5818 – Standard Practice for Exposure and Retrieval of Samples to Evaluate Installation Damage of Geosynthetics.
 - p. ASTM D6241 – Standard Test Method for the Static Puncture Strength of Geotextiles and Geotextile-Related Products Using a 50-mm Probe.
 - q. ASTM D6637 – Standard Test Method for Determining Tensile Properties of Geogrids by the Single or Multi-Rib Tensile Method.
 - r. ASTM D6706 – Standard Test Method for Measuring Geosynthetic Pullout Resistance in Soil.
 - s. ASTM D6992 – Standard Test Method for Accelerated Tensile Creep and Creep-Rupture of Geosynthetic Materials Based on Time-Temperature Superposition Using the Stepped Isothermal Method.
4. Soils
- a. AASHTO M 145 – AASHTO Soil Classification System.
 - b. AASHTO T 104 – Standard Method of Test for Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate.
 - c. AASHTO T 267 – Standard Method of Test for Determination of Organic Content in Soils by Loss of Ignition.
 - d. ASTM C33 – Standard Specification for Concrete Aggregates.
 - e. ASTM D422 – Standard Test Method for Particle-Size Analysis of Soils.
 - f. ASTM D448 – Standard Classification for Sizes of Aggregates for Road and Bridge Construction.
 - g. ASTM D698 – Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort. (12,400 ft-lbf/ft (2,700 kN-m/m)).
 - h. ASTM D1241 – Standard Specification for Materials for Soil-Aggregate Subbase, Base and Surface Courses.
 - i. ASTM D1556 – Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method.
 - j. ASTM D1557 – Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort. (56,000 ft-lbf/ft (2,700 kN-m/m)).
 - k. ASTM D2487 – Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

- l. ASTM D2488 – Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).
 - m. ASTM D3080 – Standard Test Method for Direct Shear Test of Soils Under Consolidated Drained Conditions.
 - n. ASTM D4254 – Standard Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.
 - o. ASTM D4318 – Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
 - p. ASTM D4767- Test Method for Consolidated-Undrained Triaxial Compression Test for Cohesive Soils.
 - q. ASTM D4972 – Standard Test Method for pH of Soils.
 - r. ASTM D6938 – Standard Test Method for In-Place Density and Water Content of Soil and Aggregate by Nuclear Methods (Shallow Depth).
 - s. ASTM G51 – Standard Test Method for Measuring pH of Soil for Use in Corrosion Testing.
 - t. ASTM G57 – Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method.
5. Drainage Pipe
- a. ASTM D3034 – Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
 - b. ASTM F2648 – Standard Specification for 2 to 60 inch [50 to 1500 mm] Annular Corrugated Profile Wall Polyethylene (PE) Pipe and Fittings for Land Drainage Applications.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preconstruction Meeting. As directed by the Owner, the General Contractor shall schedule a preconstruction meeting at the project site prior to commencement of retaining wall construction. Participation in the preconstruction meeting shall be required of the General Contractor, Retaining Wall Design Engineer, Retaining Wall Installation Contractor, Grading Contractor and Inspection Engineer. The General Contractor shall provide notification to all parties at least 10 calendar days prior to the meeting.

- 1. Preconstruction Meeting Agenda:
 - a. The Retaining Wall Design Engineer shall explain all aspects of the retaining wall construction drawings.
 - b. The Retaining Wall Design Engineer shall explain the required bearing capacity of soil below the retaining wall structure and the shear strength of in-situ soils assumed in the retaining wall design to the Inspection Engineer.

- c. The Retaining Wall Design Engineer shall explain the required shear strength of fill soil in the reinforced, retained and foundation zones of the retaining wall to the Inspection Engineer.
- d. The Retaining Wall Design Engineer shall explain any measures required for coordination of the installation of utilities or other obstructions in the reinforced or retained fill zones of the retaining wall.
- e. The Retaining Wall Installation Contractor shall explain all excavation needs, site access and material staging area requirements to the General Contractor and Grading Contractor.

1.05 SUBMITTALS

- A. **Product Data.** At least 14 days prior to construction, the General Contractor shall submit a minimum of six (6) copies of the retaining wall product submittal package to the Owner's Representative for review and approval. The submittal package shall include technical specifications and product data from the manufacturer for the following:
 1. Precast Modular Block System brochure
 2. Precast Modular Block concrete test results specified in paragraph 2.01, subparagraph B of this section as follows:
 - a. 28-day compressive strength
 - b. Air content
 - c. Slump or Slump Flow (as applicable)
 3. Drainage Pipe
 4. Geotextile
 5. Geosynthetic Soil Reinforcement (if required by the retaining wall design). The contractor shall provide certified manufacturer test reports for the geosynthetic soil reinforcement material in the manufactured roll width specified. The test report shall list the individual roll numbers for which the certified material properties are valid.
- B. **Installer Qualification Data.** At least 14 days prior to construction, the General Contractor shall submit the qualifications of the business entity responsible for installation of the retaining wall, the Retaining Wall Installation Contractor, per paragraph 1.07, subparagraph A of this section.
- C. **Retaining Wall Design Calculations and Construction Shop Drawings.** At least 14 days prior to construction, the General Contractor shall furnish six (6) sets of construction shop drawings and six (6) copies of the supporting structural calculations report to the Owner for review and approval. This submittal shall include the following:
 1. Signed, sealed and dated drawings and engineering calculations prepared in accordance with these specifications.

2. Qualifications Statement of Experience of the Retaining Wall Design Engineer as specified in paragraph 1.07, subparagraph B of this section.
3. Certificate of Insurance of the Retaining Wall Design Engineer as specified in paragraph 1.06, subparagraph B of this section.

1.06 CONSTRUCTION SHOP DRAWING PREPARATION

- A. The Retaining Wall Design Engineer shall coordinate the retaining wall construction shop drawing preparation with the project Civil Engineer, project Geotechnical Engineer and Owner's Representatives. The General Contractor shall furnish the Retaining Wall Design Engineer the following project information required to prepare the construction shop drawings. This information shall include, but is not limited to, the following:
 1. Current versions of the site, grading, drainage, utility, erosion control, landscape, and irrigation plans;
 2. electronic CAD file of the civil site plans listed in (1);
 3. report of geotechnical investigation and all addenda and supplemental reports;
 4. recommendations of the project Geotechnical Engineer regarding effective stress shear strength and total stress shear strength (when applicable) parameters for in-situ soils in the vicinity of the proposed retaining wall(s) and for any fill soil that may potentially be used as backfill in retained and/or foundation zones of the retaining wall.
- B. The Retaining Wall Design Engineer shall provide the Owner with a certificate of professional liability insurance verifying the minimum coverage limits of \$1 million per claim and \$1 million aggregate.
- C. Design of the precast modular block retaining wall shall satisfy the requirements of this section. Where local design or building code requirements exceed these specifications, the local requirements shall also be satisfied.
- D. The Retaining Wall Design Engineer shall note any exceptions to the requirements of this section by listing them at the bottom right corner of the first page of the construction shop drawings.
- E. Approval or rejection of the exceptions taken by the Retaining Wall Engineer will be made in writing as directed by the Owner.
- F. The precast modular block design, except as noted herein, shall be based upon AASHTO Load and Resistance Factor Design (LRFD) methodology as referenced in paragraph 1.03, subparagraph C.1.
- G. In the event that a conflict is discovered between these specifications and a reasonable interpretation of the design specifications and methods referenced in paragraph F above, these specifications shall prevail. If a reasonable interpretation

is not possible, the conflict shall be resolved per the requirements in paragraph 1.03, subparagraph A of this section.

- H. Soil Shear Parameters. The Retaining Wall Design Engineer shall prepare the construction shop drawings based upon soil shear strength parameters from the available project data and the recommendations of the project Geotechnical Engineer. If insufficient data exists to develop the retaining wall design, the Retaining Wall Design Engineer shall communicate the specific deficiency of the project information or data to the Owner in writing.
- I. Allowable bearing pressure requirements for each retaining wall shall be clearly shown on the construction drawings.
- J. Global Stability. Overall (global) stability shall be evaluated in accordance with the principals of limit equilibrium analysis as set forth in FHWA-NHI-10-024 Volume I and FHWA-NHI-10-025 Volume II GEC 11 Design of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes as referenced in paragraph 1.03, subparagraph C.1. The minimum factors of safety shall be as follows:

Normal Service (Static)	1.4
Seismic	1.1
Rapid Drawdown (if applicable)	1.2

- K. Seismic Stability. Seismic loading shall be evaluated in accordance with AASHTO Load and Resistance Factor Design (LRFD) methodology as referenced in paragraph 1.03, subparagraph C.1.

1.07 QUALITY ASSURANCE

- A. Retaining Wall Installation Contractor Qualifications. In order to demonstrate basic competence in the construction of precast modular block walls, the Retaining Wall Installation Contractor shall document compliance with the following:
 - 1. Experience.
 - a. Construction experience with a minimum of 30,000 square feet (2,800 square meters) of the proposed precast modular block retaining wall system.
 - b. Construction of at least ten (10) precast modular block (large block) retaining wall structures within the past three (3) years.
 - c. Construction of at least 50,000 square feet (4,650 square meters) of precast modular block (large block) retaining walls within the past three (3) years.
 - 2. Retaining Wall Installation Contractor experience documentation for each qualifying project shall include:

- a. Project name and location
 - b. Date (month and year) of construction completion
 - c. Contact information of Owner or General Contractor
 - d. Type (trade name) of precast modular block system built
 - e. Maximum height of the wall constructed
 - f. Face area of the wall constructed
3. In lieu of the requirements set forth in items 1 and 2 above, the Retaining Wall Installation Contractor must be a certified Precast Modular Block Retaining Wall Installation Contractor as demonstrated by satisfactory completion of a certified precast modular block retaining wall installation training program administered by the precast modular block manufacturer.

B. Retaining Wall Design Engineer Qualifications and Statement of Experience. The Retaining Wall Design Engineer shall submit a written statement affirming that he or she has the following minimum qualifications and experience.

1. The Retaining Wall Design Engineer shall be licensed to practice in the jurisdiction of the project location.
2. The Retaining Wall Design Engineer shall be independently capable of performing all internal and external stability analyses, including those for seismic loading, compound stability, rapid draw-down and deep-seated, global modes of failure.
3. The Retaining Wall Design Engineer shall affirm in writing that he or she has personally supervised the design of the retaining walls for the project, that the design considers all the requirements listed in paragraph 1.06 and that he or she accepts responsibility as the design engineer of record for the retaining walls constructed on the project.
4. The Retaining Wall Design Engineer shall affirm in writing that he or she has personally designed in excess of 100,000 face square feet (9,000 face square meters) of modular block earth retaining walls within the previous three (3) years.
5. In lieu of these specific requirements, the engineer may submit alternate documentation demonstrating competency in Precast Modular Block retaining wall design.

C. The Owner reserves the right to reject the design services of any engineer or engineering firm who, in the sole opinion of the Owner, does not possess the requisite experience or qualifications.

1.08 QUALITY CONTROL

A. The Owner's Representative shall review all submittals for materials, design, Retaining Wall Design Engineer qualifications and the Retaining Wall Installation Contractor qualifications.

- B. The General Contractor shall retain the services of an Inspection Engineer who is experienced with the construction of precast modular block retaining wall structures to perform inspection and testing. The cost of inspection shall be the responsibility of the General Contractor. Inspection shall be continuous throughout the construction of the retaining walls.
- C. The Inspection Engineer shall perform the following duties:
1. Inspect the construction of the precast modular block structure for conformance with construction shop drawings and the requirements of this specification.
 2. Verify that soil or aggregate fill placed and compacted in the reinforced, retained and foundation zones of the retaining wall conforms with paragraphs 2.04 and 2.05 of this section and exhibits the shear strength parameters specified by the Retaining Wall Design Engineer.
 3. Verify that the shear strength of the in-situ soil assumed by the Retaining Wall Design Engineer is appropriate.
 4. Inspect and document soil compaction in accordance with these specifications:
 - a. Required dry unit weight
 - b. Actual dry unit weight
 - c. Allowable moisture content
 - d. Actual moisture content
 - e. Pass/fail assessment
 - f. Test location – wall station number
 - g. Test elevation
 - h. Distance of test location behind the wall face
 5. Verify that all excavated slopes in the vicinity of the retaining wall are bench-cut as directed by the project Geotechnical Engineer.
 6. Notify the Retaining Wall Installation Contractor of any deficiencies in the retaining wall construction and provide the Retaining Wall Installation Contractor a reasonable opportunity to correct the deficiency.
 7. Notify the General Contractor, Owner and Retaining Wall Design Engineer of any construction deficiencies that have not been corrected timely.
 8. Document all inspection results.
 9. Test compacted density and moisture content of the retained backfill with the following frequency:
 - a. At least once every 1,000 square feet (90 square meters) (in plan) per 9-inch (230 mm) vertical lift, and
 - b. At least once per every 18 inches (460 mm) of vertical wall construction.

- D. The General Contractor's engagement of the Inspection Engineer does not relieve the Retaining Wall Installation Contractor of responsibility to construct the proposed retaining wall in accordance with the approved construction shop drawings and these specifications.
- E. The Retaining Wall Installation Contractor shall inspect the on-site grades and excavations prior to construction and notify the Retaining Wall Design Engineer and General Contractor if on-site conditions differ from the elevations and grading conditions depicted in the retaining wall construction shop drawings.

1.09 DELIVERY, STORAGE AND HANDLING

- A. The Retaining Wall Installation Contractor shall inspect the materials upon delivery to ensure that the proper type, grade and color of materials have been delivered.
- B. The Retaining Wall Installation Contractor shall store and handle all materials in accordance with the manufacturer's recommendations as specified herein and in a manner that prevents deterioration or damage due to moisture, temperature changes, contaminants, corrosion, breaking, chipping, UV exposure or other causes. Damaged materials shall not be incorporated into the work.
- C. Geosynthetics
 - 1. All geosynthetic materials shall be handled in accordance with ASTM D4873. The materials should be stored off the ground and protected from precipitation, sunlight, dirt and physical damage.
- D. Precast Modular Blocks
 - 1. Precast modular blocks shall be stored in an area with positive drainage away from the blocks. Be careful to protect the block from mud and excessive chipping and breakage. Precast modular blocks shall not be stacked more than three (3) units high in the storage area.
- E. Drainage Aggregate and Backfill Stockpiles
 - 1. Drainage aggregate or backfill material shall not be piled over unstable slopes or areas of the project site with buried utilities.
 - 2. Drainage aggregate and/or reinforced fill material shall not be staged where it may become mixed with or contaminated by poor draining fine-grained soils such as clay or silt.

25.2 PART 2 – MATERIALS

2.01 PRECAST MODULAR BLOCK RETAINING WALL UNITS

- A. All units shall be wet-cast precast modular retaining wall units conforming to ASTM C1776.
- B. All units for the project shall be obtained from the same manufacturer. The manufacturer shall be licensed and authorized to produce the retaining wall units by the precast modular block system patent holder/licensor and shall document compliance with the published quality control standards of the proprietary precast modular block system licensor for the previous three (3) years or the total time the manufacturer has been licensed, whichever is less.
- C. Concrete used in the production of the precast modular block units shall be first-purpose, fresh concrete. It shall not consist of returned, reconstituted, surplus or waste concrete. It shall be an original production mix meeting the requirements of ASTM C94 and exhibit the properties as shown in the following table:

Concrete Mix Properties

Freeze Thaw Exposure Class ⁽¹⁾	Minimum 28-Day Compressive Strength ⁽²⁾	Maximum Water Cement Ratio	Nominal Maximum Aggregate Size	Aggregate Class Designation ⁽³⁾	Air Content ⁽⁴⁾
Moderate	4,000 psi (27.6 MPa)	0.45	1 inch (25 mm)	3M	4.5% +/- 1.5%
Severe	4,000 psi (27.6 MPa)	0.45	1 inch (25 mm)	3S	6.0% +/- 1.5%
Very Severe	4,500 psi (30.0 MPa)	0.40	1 inch (25 mm)	4S	6.0% +/- 1.5%
Maximum Water-Soluble Chloride Ion (Cl) Content in Concrete, Percent by Weight of Cement^(5,6)					0.15
Maximum Chloride as Cl Concentration in Mixing Water, Parts Per Million					1000
Maximum Percentage of Total Cementitious Materials By Weight^(7,9) (Very Severe Exposure Class Only):					
Fly Ash or Other Pozzolans Conforming to ASTM C618					25
Slag Conforming to ASTM C989					50
Silica Fume Conforming to ASTM C1240					10
Total of Fly Ash or Other Pozzolans, Slag, and Silica Fume ⁽⁸⁾					50
Total of Fly Ash or Other Pozzolans and Silica Fume ⁽⁸⁾					35
Alkali-Aggregate Reactivity Mitigation per ACI 201					
Slump (Conventional Concrete) per ASTM C143⁽¹⁰⁾			5 inches +/- 1½ inches (125 mm +/- 40 mm)		
Slump Flow (Self-Consolidating Concrete) per ASTM C1611			18 inches – 32 inches (450 mm – 800 mm)		

⁽¹⁾Exposure class is as described in ACI 318. "Moderate" describes concrete that is exposed to freezing and thawing cycles and occasional exposure to moisture. "Severe" describes concrete that is exposed to freezing and thawing cycles and in continuous contact with moisture. "Very Severe" describes concrete that is exposed to

freezing and thawing cycles and in continuous contact with moisture and exposed to deicing chemicals. Exposure class should be specified by owner/purchaser prior to order placement.

⁽²⁾Test method ASTM C39.

⁽³⁾Defined in ASTM C33 Table 3 *Limits for Deleterious Substances and Physical Property Requirements of Coarse Aggregates for Concrete.*

⁽⁴⁾Test method ASTM C231.

⁽⁵⁾Test method ASTM C1218 at age between 28 and 42 days.

⁽⁶⁾Where used in high sulfate environments or where alkali-silica reactivity is an issue, water soluble chloride shall be limited to no more than trace amounts (from impurities in concrete-making components, not intended constituents.)

⁽⁷⁾The total cementitious material also includes ASTM C150, C595, C845, C1157 cement. The maximum percentages shall include:

(a) Fly ash or other pozzolans in type IP, blended cement, ASTM C595, or ASTM C1157.

(b) Slag used in the manufacture of an IS blended cement, ASTM C595, or ASTM C1157.

(c) Silica fume, ASTM C1240, present in a blended cement.

⁽⁸⁾Fly ash or other pozzolans and silica fume shall constitute no more than 25 and 10 percent, respectively, of the total weight of the cementitious materials.

⁽⁹⁾Prescriptive limits shown may be waived for concrete mixes that demonstrate excellent freeze/thaw durability in a detailed and current testing program.

⁽¹⁰⁾Slump may be increased by a high-range water-reducing admixture.

D. Each concrete block shall be cast in a single continuous pour without cold joints. With the exception of half-block units, corner units and other special application units, the precast modular block units shall conform to the nominal dimensions listed in the table below and be produced to the dimensional tolerances shown.

Block Type	Dimension	Nominal Value	Tolerance
28" (710 mm) Block	Height	18" (457 mm)	+/- 3/16" (5 mm)
	Length	46-1/8" (1172 mm)	+/- 1/2" (13 mm)
	Width*	28" (710 mm)	+/- 1/2" (13 mm)
41" (1030 mm) Block	Height	18" (457 mm)	+/- 3/16" (5 mm)
	Length	46-1/8" (1172 mm)	+/- 1/2" (13 mm)
	Width*	40-1/2" (1030 mm)	+/- 1/2" (13 mm)
60" (1520 mm) Block	Height	18" (457 mm)	+/- 3/16" (5 mm)
	Length	46-1/8" (1172 mm)	+/- 1/2" (13 mm)
	Width*	60" (1520 mm)	+/- 1/2" (13 mm)

* Block tolerance measurements shall exclude variable face texture

E. Individual block units shall have a nominal height of 18 inches (457 mm).

- F. With the exception of half-block units, corner units and other special application units, the precast modular block units shall have two (2), circular dome shear knobs that are 10 inches (254 mm), 7.5 inches (190 mm), or 6.75 inches (171 mm) in diameter and 4 inches (102 mm) or 2 inches (51 mm) in height. The shear knobs shall fully index into a continuous semi-cylindrical shear channel in the bottom of the block course above. The Peak interlock shear between any two (2) vertically stacked precast modular block units, with 10 inch (254 mm) diameter shear knobs, measured in accordance with ASTM D6916 shall exceed 6,500 lb/ft (95 kN/m) at a minimum normal load of 500 lb/ft (7kN/m). as well as an ultimate peak interface shear capacity in excess of 11,000 lb/ft (160 kN/m). The peak interlock shear between any two (2) vertically stacked precast modular block units, with 7.5 inch (190 mm) or 6.75 inch (171 mm) diameter shear knobs, measured in accordance with ASTM D6916 shall exceed 1,850 lb/ft (27 kN/m) at a minimum normal load of 500 lb/ft (7kN/m) as well as an ultimate peak interface shear capacity in excess of 10,000 lb/ft (146 kN/m). Test specimen blocks tested under ASTM D6916 shall be actual, full-scale production blocks of known compressive strength. The interface shear capacity reported shall be corrected for a 4,000 psi (27.6 MPa) concrete compressive strength. Regardless of precast modular block configuration, interface shear testing shall be completed without the inclusion of unit core infill aggregate.
- G. The 28" (710 mm) and 41" (1030 mm) precast modular block units shall be cast with a 13" (330 mm) wide, continuous vertical core slot that will permit the insertion of a 12" (305 mm) inch wide strip of geogrid reinforcement to pass completely through the block. When installed in this manner, the geogrid reinforcement shall form a non-normal load dependent, positive connection between the block unit and the reinforcement strip. The use of steel for the purposes of creating the geogrid to block connection is not acceptable.
- H. Without field cutting or special modification, the precast modular block units shall be capable of achieving a minimum radius of 14 ft 6 in (4.42 m).
- I. The precast modular block units shall be manufactured with an integrally cast shear knobs that establishes a standard horizontal set-back for subsequent block courses. The precast modular block system shall be available in the four (4) standard horizontal set-back facing batter options listed below:

<u>Horizontal Set-Back/Blk. Course</u>	<u>Max. Facing Batter</u>
3/8" (10 mm)	1.2°
1-5/8" (41 mm)	5.2°

9-3/8" (238 mm)	27.5°
16-5/8" (422 mm)	42.7°

The precast modular block units shall be furnished with the required shear knobs that provide the facing batter required in the construction shop drawings.

- J. The precast modular block unit face texture shall be selected by the owner from the available range of textures available from the precast modular block manufacturer. Each textured block facing unit shall be a minimum of 5.76 square feet (0.54 square meters) with a unique texture pattern that repeats with a maximum frequency of once in any 15 square feet (1.4 square meters) of wall face.
- K. The block color shall be selected by the owner from the available range of colors available from the precast modular block manufacturer.
- L. All precast modular block units shall be sound and free of cracks or other defects that would interfere with the proper installation of the unit, impair the strength or performance of the constructed wall. PMB units to be used in exposed wall construction shall not exhibit chips or cracks in the exposed face or faces of the unit that are not otherwise permitted. Chips smaller than 1.5" (38 mm) in its largest dimension and cracks not wider than 0.012" (0.3 mm) and not longer than 25% of the nominal height of the PMB unit shall be permitted. PMB units with bug holes in the exposed architectural face smaller than 0.75" (19 mm) in its largest dimension shall be permitted. Bug holes, water marks, and color variation on non-architectural faces are acceptable. PMB units that exhibit cracks that are continuous through any solid element of the PMB unit shall not be incorporated in the work regardless of the width or length of the crack.
- M. **Preapproved Manufacturers.**
Manufacturers of Redi-Rock Retaining Wall Systems as licensed by Redi-Rock International, LLC, 05481 US 31 South, Charlevoix, MI 49720 USA; telephone (866) 222-8400; website www.redi-rock.com.
- N. **Substitutions.** Technical information demonstrating conformance with the requirements of this specification for an alternative precast modular block retaining wall system must be submitted for preapproval at least 14 calendar days prior to the bid date. Acceptable alternative PMB retaining wall systems, otherwise found to be in conformance with this specification, shall be approved in writing by the owner 7 days prior to the bid date. The Owner's Representative reserves the right to provide no response to submissions made out of the time requirements of this section or to submissions of block retaining wall systems that are determined to be unacceptable to the owner.

- O. Value Engineering Alternatives. The owner may evaluate and accept systems that meet the requirements of this specification after the bid date that provide a minimum cost savings of 20% to the Owner. Construction expediency will not be considered as a contributing portion of the cost savings total.

2.02 GEOGRID REINFORCEMENT

- A. Geogrid reinforcement shall be a woven or knitted PVC coated geogrid manufactured from high-tenacity PET polyester fiber with an average molecular weight greater than 25,000 ($M_n > 25,0000$) and a carboxyl end group less than 30 (CEG < 30). The geogrid shall be furnished in prefabricated roll widths of certified tensile strength by the manufacturer. The prefabricated roll width of the geogrid shall be 12" (300 mm) +/- 1/2" (13 mm). No cutting of geogrid reinforcement down to the 12" (300 mm) roll width from a larger commercial roll width will be allowed under any circumstances.
- B. The ultimate tensile strength (T_{ult}) of the geogrid reinforcement shall be measured in accordance with ASTM D6637.
- C. Geogrid – Soil Friction Properties
1. Friction factor, F^* , shall be equal to $2/3 \tan \phi$, where ϕ is the effective angle of internal friction of the reinforced fill soil.
 2. Linear Scale Correction Factor, α , shall equal 0.8.
- D. Long-Term Tensile Strength (T_{al}) of the geogrid reinforcement shall be calculated in accordance with Section 3.5.2 of FHWA-NHI-10-024 and as provided in this specification.
1. The creep reduction factor (RF_{CR}) shall be determined in accordance with Appendix D of FHWA-NHI-10-025 for a minimum 75 year design life.
 2. Minimum installation damage reduction factor (RF_{ID}) shall be 1.25. The value of RF_{ID} shall be based upon documented full-scale tests in a soil that is comparable to the material proposed for use as reinforced backfill in accordance with ASTM D5818.
 3. Minimum durability reduction factor (RF_D) shall be 1.3 for a soil pH range of 3 to 9.
- E. Connection between the PMB retaining wall unit and the geogrid reinforcement shall be determined from short-term testing per the requirements of FHWA NHI-10-025, Appendix B.4 for a minimum 75-year design life.
- F. The minimum value of T_{al} for geogrid used in design of a reinforced precast modular block retaining wall shall be 2,000 lb/ft (29 kN/m) or greater.
- G. The minimum length of geogrid reinforcement shall be the greater of the following:

1. 0.7 times the wall design height, H.
 2. 6 feet (1.83 m).
 3. The length required by design to meet internal stability requirements, soil bearing pressure requirements and constructability requirements.
- H. Constructability Requirements. Geogrid design embedment length shall be measured from the back of the precast modular block facing unit and shall be consistent for the entire height of a given retaining wall section.
- I. Geogrid shall be positively connected to every precast modular block unit. Design coverage ratio, R_c , as calculated in accordance with AASHTO LRFD Bridge Design Specifications Figure 11.10.6.4.1-2 shall not exceed 0.50.
- J. Preapproved Geogrid Reinforcement Products.
1. Miragrid XT Geogrids as manufactured by TenCate Geosynthetics of Pendergrass, Georgia USA and distributed by Manufacturers of the Redi-Rock Retaining Wall System.
- K. Substitutions. No substitutions of geogrid reinforcement products shall be allowed.

2.03 GEOTEXTILE

- A. Nonwoven geotextile fabric shall be placed as indicated on the retaining wall construction shop drawings. Additionally, the nonwoven geotextile fabric shall be placed in the v-shaped joint between adjacent block units on the same course. The nonwoven geotextile fabric shall meet the requirements Class 3 construction survivability in accordance with AASHTO M 288.
- B. Preapproved Nonwoven Geotextile Products
1. Mirafi 140N
 2. Propex Geotex 451
 3. Skaps GT-142
 4. Thrace-Linq 140EX
 5. Carthage Mills FX-40HS
 6. Stratatex ST 142

2.04 DRAINAGE AGGREGATE AND WALL INFILL

- A. Drainage aggregate (and wall infill for retaining walls designed as modular gravity structures) shall be a durable crushed stone conforming to No. 57 size per ASTM C33 with the following particle-size distribution requirements per ASTM D422:

U.S. Standard	
<u>Sieve Size</u>	<u>% Passing</u>

1-½" (38 mm)	100
1" (25 mm)	95-100
½" (13 mm)	25-60
No. 4 (4.76 mm)	0-10
No. 8 (2.38 mm)	0-5

2.05 REINFORCED FILL

A. Material used as reinforced backfill material in the reinforced zone (if applicable) shall be a granular fill material meeting the requirements of USCS soil type GW, GP, SW or SP per ASTM D2487 or alternatively by AASHTO Group Classification A-1-a or A-3 per AASHTO M 145. The backfill shall exhibit a minimum effective internal angle of friction, $\phi = 34$ degrees at a maximum 2% shear strain and meet the following particle-size distribution requirements per ASTM D422.

U.S. Standard	
<u>Sieve Size</u>	<u>% Passing</u>
¾" (19 mm)	100
No. 4 (4.76 mm)	0-100
No. 40 (0.42 mm)	0-60
No. 100 (0.15 mm)	0-10
No. 200 (0.07 mm)	0-15

B. The reinforced backfill material shall be free of sod, peat, roots or other organic or deleterious matter including, but not limited to, ice, snow or frozen soils. Materials passing the No. 40 (0.42 mm) sieve shall have a liquid limit less than 25 and plasticity index less than 6 per ASTM D4318. Organic content in the backfill material shall be less than 1% per AASHTO T-267 and the pH of the backfill material shall be between 5 and 8.

C. Soundness. The reinforced backfill material shall exhibit a magnesium sulfate soundness loss of less than 30% after four (4) cycles, or sodium sulfate soundness loss of less than 15% after five (5) cycles as measured in accordance with AASHTO T-104.

D. Reinforced backfill shall not be comprised of crushed or recycled concrete, recycled asphalt, bottom ash, shale or any other material that may degrade, creep or experience a loss in shear strength or a change in pH over time.

2.06 LEVELING PAD

A. The precast modular block units shall be placed on a leveling pad constructed from crushed stone or unreinforced concrete. The leveling pad shall be constructed to the dimensions and limits shown on the retaining wall design drawings prepared by the Retaining Wall Design Engineer.

- B. Crushed stone used for construction of a granular leveling pad shall meet the requirements of the drainage aggregate and wall infill in section 2.04 or a preapproved alternate material.
- C. Concrete used for construction of an unreinforced concrete leveling pad shall satisfy the criteria for AASHTO Class B. The concrete should be cured a minimum of 12 hours prior to placement of the precast modular block wall retaining units and exhibit a minimum 28-day compressive strength of 2,500 psi (17.2 MPa).

2.07 DRAINAGE

- A. Drainage Pipe
 - 1. Drainage collection pipe shall be a 4" (100 mm) diameter, 3-hole perforated, HDPE pipe with a minimum pipe stiffness of 22 psi (152 kPa) per ASTM D2412.
 - 2. The drainage pipe shall be manufactured in accordance with ASTM D1248 for HDPE pipe and fittings.
- B. Preapproved Drainage Pipe Products
 - 1. ADS 3000 Triple Wall pipe as manufactured by Advanced Drainage Systems.

25.3 PART 3 – EXECUTION

3.01 GENERAL

- A. All work shall be performed in accordance with OSHA safety standards, state and local building codes and manufacturer's requirements.
- B. The General Contractor is responsible for the location and protection of all existing underground utilities. Any new utilities proposed for installation in the vicinity of the retaining wall, shall be installed concurrent with retaining wall construction. The General Contractor shall coordinate the work of subcontractors affected by this requirement.
- C. New utilities installed below the retaining wall shall be backfilled and compacted to a minimum of 98% maximum dry density per ASTM D698 standard proctor.
- D. The General Contractor is responsible to ensure that safe excavations and embankments are maintained throughout the course of the project.
- E. All work shall be inspected by the Inspection Engineer as directed by the Owner.

3.02 EXAMINATION

- A. Prior to construction, the General Contractor, Grading Contractor, Retaining Wall Installation Contractor and Inspection Engineer shall examine the areas in which the retaining wall will be constructed to evaluate compliance with the requirements for installation tolerances, worker safety and any site conditions affecting performance of the completed structure. Installation shall proceed only after unsatisfactory conditions have been corrected.

3.03 PREPARATION

A. Fill Soil.

1. The Inspection Engineer shall verify that reinforced backfill placed in the reinforced soil zone satisfies the criteria of this section.
2. The Inspection Engineer shall verify that any fill soil installed in the foundation and retained soil zones of the retaining wall satisfies the specification of the Retaining Wall Design Engineer as shown on the construction drawings.

B. Excavation.

1. The Grading Contractor shall excavate to the lines and grades required for construction of the precast modular block retaining wall as shown on the construction drawings. The Grading Contractor shall minimize over-excavation. Excavation support, if required, shall be the responsibility of the Grading Contractor.
2. Over-excavated soil shall be replaced with compacted fill in conformance with the specifications of the Retaining Wall Design Engineer and "Division 31, Section 31 20 00 – Earthmoving" of these project specifications.
3. Embankment excavations shall be bench cut as directed by the project Geotechnical Engineer and inspected by the Inspection Engineer for compliance.

C. Foundation Preparation.

1. Prior to construction of the precast modular block retaining wall, the leveling pad area and undercut zone (if applicable) shall be cleared and grubbed. All topsoil, brush, frozen soil and organic material shall be removed. Additional foundation soils found to be unsatisfactory beyond the specified undercut limits shall be undercut and replaced with approved fill as directed by the project Geotechnical Engineer. The Inspection Engineer shall ensure that the undercut limits are consistent with the requirements of the project Geotechnical Engineer and that all soil fill material is properly compacted according project specifications. The Inspection Engineer shall document the volume of undercut and replacement.
2. Following excavation for the leveling pad and undercut zone (if applicable), the Inspection Engineer shall evaluate the in-situ soil in the foundation and retained soil zones.

- a. The Inspection Engineer shall verify that the shear strength of the in-situ soil assumed by the Retaining Wall Design Engineer is appropriate. The Inspection Engineer shall immediately stop work and notify the Owner if the in-situ shear strength is found to be inconsistent with the retaining wall design assumptions.
- b. The Inspection Engineer shall verify that the foundation soil exhibits sufficient ultimate bearing capacity to satisfy the requirements indicated on the retaining wall construction shop drawings per paragraph 1.06 I of this section.

D. Leveling Pad.

1. The leveling pad shall be constructed to provide a level, hard surface on which to place the first course of precast modular block units. The leveling pad shall be placed in the dimensions shown on the retaining wall construction drawings and extend to the limits indicated.
2. Crushed Stone Leveling Pad. Crushed stone shall be placed in uniform maximum lifts of 6" (150 mm). The crushed stone shall be compacted by a minimum of 3 passes of a vibratory compactor capable of exerting 2,000 lb (8.9 kN) of centrifugal force and to the satisfaction of the Inspection Engineer.
3. Unreinforced Concrete Leveling Pad. The concrete shall be placed in the same dimensions as those required for the crushed stone leveling pad. The Retaining Wall Installation Contractor shall erect proper forms as required to ensure the accurate placement of the concrete leveling pad according to the retaining wall construction drawings.

3.04 PRECAST MODULAR BLOCK WALL SYSTEM INSTALLATION

- A. The precast modular block structure shall be constructed in accordance with the construction drawings, these specifications and the recommendations of the retaining wall system component manufacturers. Where conflicts exist between the manufacturer's recommendations and these specifications, these specifications shall prevail.
- B. Drainage components. Pipe, geotextile and drainage aggregate shall be installed as shown on the construction shop drawings.
- C. Precast Modular Block Installation
 1. The first course of block units shall be placed with the front face edges tightly abutted together on the prepared leveling pad at the locations and elevations shown on the construction drawings. The Retaining Wall Installation Contractor shall take special care to ensure that the bottom course of block units are in full contact with the leveling pad, are set level and true and are properly aligned according to the locations shown on the construction drawings.

2. Backfill shall be placed in front of the bottom course of blocks prior to placement of subsequent block courses. Nonwoven geotextile fabric shall be placed in the V-shaped joints between adjacent blocks. Drainage aggregate shall be placed in the V-shaped joints between adjacent blocks to a minimum distance of 12" (300 mm) behind the block unit.
3. Drainage aggregate shall be placed in 9 inch maximum lifts and compacted by a minimum of three (3) passes of a vibratory plate compactor capable exerting a minimum of 2,000 lb (8.9 kN) of centrifugal force.
4. Unit core fill shall be placed in the precast modular block unit vertical core slot. The core fill shall completely fill the slot to the level of the top of the block unit. The top of the block unit shall be broom-cleaned prior to placement of subsequent block courses. No additional courses of precast modular blocks may be stacked before the unit core fill is installed in the blocks on the course below.
5. Base course blocks for gravity wall designs (without geosynthetic soil reinforcement) may be furnished without vertical core slots. If so, disregard item 4 above, for the base course blocks in this application.
6. Nonwoven geotextile fabric shall be placed between the drainage aggregate and the retained soil (gravity wall design) or between the drainage aggregate and the reinforced fill (reinforced wall design) as required on the retaining wall construction drawings.
7. Subsequent courses of block units shall be installed with a running bond (half block horizontal course-to-course offset). With the exception of 90 degree corner units, the shear channel of the upper block shall be fully engaged with the shear knobs of the block course below. The upper block course shall be pushed forward to fully engage the interface shear key between the blocks and to ensure consistent face batter and wall alignment. Geogrid, drainage aggregate, unit core fill, geotextile and properly compacted backfill shall be complete and in-place for each course of block units before the next course of blocks is stacked.
8. The elevation of retained soil fill shall not be less than 1 block course (18" (457 mm)) below the elevation of the reinforced backfill throughout the construction of the retaining wall.
9. If included as part of the precast modular block wall design, cap units shall be secured with an adhesive in accordance with the precast modular block manufacturer's recommendation.

D. Geogrid Reinforcement Installation (if required)

1. Geogrid reinforcement shall be installed at the locations and elevations shown on the construction drawings on level fill compacted to the requirements of this specification.
2. Continuous 12" (300 mm) wide strips of geogrid reinforcement shall be passed completely through the vertical core slot of the precast modular block unit and extended to the embedment length shown on the construction plans. The strips shall be staked or anchored as necessary to maintain a taut condition.

3. Reinforcement length (L) of the geogrid reinforcement is measured from the back of the precast modular block unit. The cut length (L_c) is two times the reinforcement length plus additional length through the block facing unit. The cut length is calculated as follows:

$$L_c = 2*L + 3 \text{ ft } (2*L + 0.9 \text{ m}) \text{ (28" (710 mm) block unit)}$$
$$L_c = 2*L + 5 \text{ ft } (2*L + 1.5 \text{ m}) \text{ (41" (1030 mm) block unit)}$$

4. The geogrid strip shall be continuous throughout its entire length and may not be spliced. The geogrid shall be furnished in nominal, prefabricated roll widths of 12" (300 mm) +/- 1/2" (13 mm). No field modification of the geogrid roll width shall be permitted.
 5. Neither rubber tire nor track vehicles may operate directly on the geogrid. Construction vehicle traffic in the reinforced zone shall be limited to speeds of less than 5 mph (8 km/hr) once a minimum of 9 inches (230 mm) of compacted fill has been placed over the geogrid reinforcement. Sudden braking and turning of construction vehicles in the reinforced zone shall be avoided.
- E. Construction Tolerance. Allowable construction tolerance of the retaining wall shall be as follows:
1. Deviation from the design batter and horizontal alignment, when measured along a 10' (3 m) straight wall section, shall not exceed 3/4" (19 mm).
 2. Deviation from the overall design batter shall not exceed 1/2" (13 mm) per 10' (3 m) of wall height.
 3. The maximum allowable offset (horizontal bulge) of the face in any precast modular block joint shall be 1/2" (13 mm).
 4. The base of the precast modular block wall excavation shall be within 2" (50 mm) of the staked elevations, unless otherwise approved by the Inspection Engineer.
 5. Differential vertical settlement of the face shall not exceed 1' (300 mm) along any 200' (61 m) of wall length.
 6. The maximum allowable vertical displacement of the face in any precast modular block joint shall be 1/2" (13 mm).
 7. The wall face shall be placed within 2" (50 mm) of the horizontal location staked.

3.05 WALL INFILL AND REINFORCED BACKFILL PLACEMENT

- A. Backfill material placed immediately behind the drainage aggregate shall be compacted as follows:
 1. 98% of maximum dry density at $\pm 2\%$ optimum moisture content per ASTM D698 standard proctor or 85% relative density per ASTM D4254.
- B. Compactive effort within 3' (0.9 m) of the back of the precast modular blocks should be accomplished with walk-behind compactors. Compaction in this zone

shall be within 95% of maximum dry density as measured in accordance with ASTM D698 standard proctor or 80% relative density per ASTM D 4254. Heavy equipment should not be operated within 3' (0.9 m) of the back of the precast modular blocks.

- C. Backfill material shall be installed in lifts that do not exceed a compacted thickness of 9" (230 mm).
- D. At the end of each work day, the Retaining Wall Installation Contractor shall grade the surface of the last lift of the granular wall infill to a $3\% \pm 1\%$ slope away from the precast modular block wall face and compact it.
- E. The General Contractor shall direct the Grading Contractor to protect the precast modular block wall structure against surface water runoff at all times through the use of berms, diversion ditches, silt fence, temporary drains and/or any other necessary measures to prevent soil staining of the wall face, scour of the retaining wall foundation or erosion of the reinforced backfill or wall infill.

3.06 OBSTRUCTIONS IN THE INFILL AND REINFORCED FILL ZONE

- A. The Retaining Wall Installation Contractor shall make all required allowances for obstructions behind and through the wall face in accordance with the approved construction shop drawings.
- B. Should unplanned obstructions become apparent for which the approved construction shop drawings do not account, the affected portion of the wall shall not be constructed until the Retaining Wall Design Engineer can appropriately address the required procedures for construction of the wall section in question.

3.07 COMPLETION

- A. For walls supporting unpaved areas, a minimum of 12" (300 mm) of compacted, low-permeability fill shall be placed over the granular wall infill zone of the precast modular block retaining wall structure. The adjacent retained soil shall be graded to prevent ponding of water behind the completed retaining wall.
- B. For retaining walls with crest slopes of 5H:1V or steeper, silt fence shall be installed along the wall crest immediately following construction. The silt fence shall be located 3' to 4' (0.9 m to 1.2 m) behind the uppermost precast modular block unit. The crest slope above the wall shall be immediately seeded to establish vegetation. The General Contractor shall ensure that the seeded slope receives adequate irrigation and erosion protection to support germination and growth.

- C. The General Contractor shall confirm that the as-built precast modular block wall geometries conform to the requirements of this section. The General Contractor shall notify the Owner of any deviations.

25.4 PAYMENT

Work for this Section shall be as shown on the plans and as described above. The work shall include all labor, materials, equipment, excavation & backfill, structural designs, and all other incidentals necessary to complete the Work.

END OF SECTION

TECHNICAL SPECIFICATIONS

SECTION 26 - LANDSCAPING

26.1 PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Plants.
 - 2. Planting soils.
 - 3. Tree stabilization.

1.3 DEFINITIONS

- A. Backfill: The earth used to replace or the act of replacing earth in an excavation.
- B. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown, with ball size not less than sizes indicated; wrapped with natural or untreated burlap, tied, rigidly supported, and drum laced with natural biodegradable twin, jute and or wire basket with the root flare visible at the surface of the ball as recommended by ANSI Z60.1.
- C. Balled and Potted Stock: Plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is not less than sizes indicated.
- D. Bare-Root Stock: Plants with a well-branched, fibrous-root system developed by transplanting or root pruning, with soil or growing medium removed, and with not less than minimum root spread according to ANSI Z60.1 for type and size of plant required.
- E. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball

shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.

- F. **Duff Layer:** The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.
- G. **Fabric Bag-Grown Stock:** Healthy, vigorous, well-rooted plants established and grown in-ground in a porous fabric bag with well-established root system reaching sides of fabric bag. Fabric bag size is not less than diameter, depth, and volume required by ANSI Z60.1 for type and size of plant.
- H. **Finish Grade:** Elevation of finished surface of planting soil.
- I. **Manufactured Topsoil:** Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- J. **Pesticide:** A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- K. **Pests:** Living organisms that occur where they are not desired, or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- L. **Planting Area:** Areas to be planted.
- M. **Planting Soil:** Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- N. **Plant; Plants; Plant Material:** These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.
- O. **Root Flare:** Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.
- P. **Stem Girdling Roots:** Roots that encircle the stems (trunks) of trees below the soil surface.
- Q. **Subgrade:** Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

- R. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- S. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.
- T. Planting Completion: The date of completion of all work related to a specific project including installation of plants, lawns and grasses, etc.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated, including soils.
 - 1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.
 - 2. Pesticides and Herbicides: Include product label and manufacturer's application instructions specific to the Project.
 - 3. Plant Photographs: Include color photographs in digital format of each required species and size of plant material as it will be furnished to the Project. Take photographs from an angle depicting true size and condition of the typical plant to be furnished. Include a scale rod or other measuring device in each photograph. For species where more than 20 plants are required, include a minimum of three photographs showing the average plant, the best quality plant, and the worst quality plant to be furnished. Identify each photograph with the full scientific name of the plant, plant size, and name of the growing nursery.
- B. Samples for Verification: For each of the following:
 - 1. Trees and Shrubs: Three samples of each variety and size delivered to the site for review. Maintain approved samples on-site as a standard for comparison.
 - 2. Organic Mulch: 1-pint volume of each organic mulch required; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture, and organic makeup.
- C. Qualification Data: For qualified landscape Installer. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.
- D. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:

1. **Manufacturer's certified analysis of standard products.**
 2. **Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.**
- E. **Material Test Reports:** For imported topsoil.
- F. **Maintenance Instructions:** Recommended procedures including watering, fertilizer, pruning, disease control, etc. to be established by Owner for maintenance of plants during a calendar year. Submit before start of required maintenance periods.
- G. **Warranty:** Sample of special warranty.

1.5 **QUALITY ASSURANCE**

- A. **Installer Qualifications:** A qualified landscape Installer whose work has resulted in successful establishment of plants.
1. **Professional Membership:** Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
 2. **Experience:** Five years' experience in landscape installation similar in scale and scope to the requirements of this Project
 3. **Installer's Field Supervision:** Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 4. **Personnel Certifications:** Installer's field supervisor shall have certification in one of the following categories from the Professional Landcare Network:
 - a. **Certified Landscape Technician - Exterior,** with installation and maintenance, specialty area(s), designated CLT-Exterior.
 - b. **Certified Ornamental Landscape Professional,** designated COLP.
 - c. **Certified ISA Arborist**
 5. **Pesticide Applicator:** State licensed, commercial.
 6. **Maintenance Proximity:** Not more than two hours' normal travel time from Installer's place of business to Project site.
- B. **Soil-Testing Laboratory Qualifications:** An independent or university laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- C. **Soil Analysis:** For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of the soil.

1. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.
 2. The soil-testing laboratory shall oversee soil sampling; with depth, location, and number of samples to be taken per instructions from Owner/Urban Forester. A minimum of five representative samples shall be taken from varied locations for each soil to be used or amended for planting purposes.
 3. Report suitability of tested soil for plant growth.
 - a. Based upon the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. or volume per cu. yd. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
 - b. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.
- D. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.
- E. Measurements: Measure according to ANSI Z60.1. Do not prune to obtain required sizes.
1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements 6 inches above the root flare for trees up to 4-inch caliper size, and 12 inches above the root flare for larger sizes.
 2. Other Plants: Measure with stems, petioles, and foliage in their normal position.
- F. Plant Material Observation: Owner/Urban Forester shall observe plant material either at place of growth or at site before planting for compliance with requirements for genus, species, variety, cultivar, size, and quality. Owner/Urban Forester retains right to observe trees and shrubs further for size and condition of balls and root systems, pests, disease symptoms, injuries, and latent defects and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.
1. Notify Owner/Urban Forester of sources of planting materials seven days in advance of delivery to site.
- G. Pre-installation Conference: Conduct conference at Project site unless otherwise advised.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. **Packaged Materials:** Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws if applicable.
- B. **Bulk Materials:**
 - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
 - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
 - 3. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.
- C. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.
- D. Handle planting stock by root ball.
- E. Store bulbs, corms, and tubers in a dry place at 60 to 65 deg F until planting.
- F. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.
 - 1. Heel-in bare-root stock. Soak roots that are in dry condition in water for two hours. Reject dried-out plants.
 - 2. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
 - 3. Do not remove container-grown stock from containers before time of planting.
 - 4. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly-wet condition.

1.7 PROJECT CONDITIONS

- A. **Field Measurements:** Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.

- B. **Interruption of Existing Services or Utilities:** Do not interrupt services or utilities to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary services or utilities according to requirements indicated:
 - 1. Notify Owner no fewer than two days in advance of proposed interruption of each service or utility.
 - 2. Do not proceed with interruption of services or utilities without Owner's written permission.

- C. **Planting Restrictions:** Plant during one of the following periods unless otherwise authorized by Owner/Urban Forester. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.
 - 1. Spring Planting: March 1st to May 15th.
 - 2. Fall Planting: October 15th to December 1st.

- D. **Weather Limitations:** Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.

- E. **Coordination with Turf Areas (Lawns):** Plant trees, shrubs, and other plants after finish grades are established and before planting turf areas unless otherwise indicated.
 - 1. When planting trees, shrubs, and other plants after planting turf areas, protect turf areas, and promptly repair damage caused by planting operations.

1.8 WARRANTY

- A. **Special Warranty:** Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner, or incidents that are beyond Contractor's control.
 - b. Structural failures including plantings falling or blowing over.
 - c. Faulty performance of tree stabilization.
 - d. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 2. **Warranty Periods from Date of Planting Completion:**

- a. Trees, Shrubs, Vines, and Ornamental Grasses: 24 months.
- b. Ground Covers, Biennials, Perennials, and Other Plants: 24 months.
- c. Annuals: Three months.

3. Include the following remedial actions as a minimum:

- a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
- b. Replace plants that are more than 10-15% percent dead or in an unhealthy condition at end of warranty period.
- c. A limit of one replacement of each plant will be required except for losses or replacements due to failure to comply with requirements.
- d. Provide extended warranty for period equal to original warranty period, for replaced plant material.

1.9 MAINTENANCE SERVICE

- A. Initial Maintenance Service for Trees and Shrubs: Provide maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established but for not less than maintenance period below.

1. Maintenance Period: 24 months from date of planting completion.

- B. Initial Maintenance Service for Ground Cover and Other Plants: Provide maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established but for not less than maintenance period below.

26.2 PRODUCTS

PART 2 -

2.1 PLANT MATERIAL

- A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant Schedule or Plant Legend shown on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

1. Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch in diameter; or with stem girdling roots will be rejected.
 2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.
 3. All plant material shall be grown in zone 5 or zone 6.
- B. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to Architect, with a proportionate increase in size of roots or balls.
- C. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which shall begin at root flare according to ANSI Z60.1. Root flare shall be visible before planting.
- D. Labeling: Label each plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant as shown on Drawings.
- E. If formal arrangements or consecutive order of plants is shown on Drawings, select stock for uniform height and spread, and number the labels to assure symmetry in planting.

2.2 INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:
1. Class: T, with a minimum of 99 percent passing through No. 8 sieve and a minimum of 75 percent passing through No. 60 sieve.
 2. Class: O, with a minimum of 95 percent passing through No. 8 sieve and a minimum of 55 percent passing through No. 60 sieve.
 3. Provide lime in form of ground dolomitic limestone.
- B. Sulfur: Granular, biodegradable, and containing a minimum of 90 percent sulfur, with a minimum of 99 percent passing through No. 6 sieve and a maximum of 10 percent passing through No. 40 sieve.
- C. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.
- D. Aluminum Sulfate: Commercial grade, unadulterated.

- E. Perlite: Horticultural perlite, soil amendment grade.
- F. Agricultural Gypsum: Minimum 90 percent calcium sulfate, finely ground with 90 percent passing through No. 50 sieve.
- G. Sand: Clean, washed, natural or manufactured, and free of toxic materials.
- H. Diatomaceous Earth: Calcined, 90 percent silica, with approximately 140 percent water absorption capacity by weight.
- I. Zeolites: Mineral clinoptilolite with at least 60 percent water absorption by weight.

2.3 ORGANIC SOIL AMENDMENTS

- A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 3/4-inch sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
 - 1. Organic Matter Content: 50 to 60 percent of dry weight.
- B. Sphagnum Peat: Partially decomposed sphagnum peat moss, finely divided or granular texture, with a pH range of 3.4 to 4.8.
- C. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, debris, and material harmful to plant growth.

2.4 FERTILIZERS

- A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 1 percent nitrogen and 10 percent phosphoric acid.
- B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
 - 1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
 - 2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.5 PLANTING SOILS

- A. **Planting Soil:** Imported topsoil complying with ASTM D 5268, a pH range of 5.5 to 7, a minimum of 4 percent organic content and from off-site sources. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep; do not obtain from agricultural land, bogs, or marshes.
1. **Additional Properties of Imported Topsoil:** Screened and free of stones 1 inch or larger in any dimension; free of roots, plants, sod, clods, clay lumps, pockets of coarse sand, paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials harmful to plant growth; free of obnoxious weeds and invasive plants including quackgrass, Johnsongrass, poison ivy, nutsedge, nimblewill, Canada thistle, bindweed, bentgrass, wild garlic, ground ivy, perennial sorrel, and bromegrass; not infested with nematodes; grubs; or other pests, pest eggs, or other undesirable organisms and disease-causing plant pathogens; friable and with sufficient structure to give good tilth and aeration. Continuous, air-filled pore space content on a volume/volume basis shall be at least 15 percent when moisture is present at field capacity. Soil shall have a field capacity of at least 15 percent on a dry weight basis.
 2. Stones may comprise no more than 10 percent of the total soil volume
 3. Mix imported topsoil with the following soil amendments [**and fertilizers**] in the following quantities to produce planting soil:
 - a. Refer to Section 02920 – Lawns & Grasses.

2.6 MULCHES

- A. **Organic Mulch:** Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:
1. **Type:** Shredded hardwood bark.
 2. **Size Range:** 2 inches maximum, 1/2 inch minimum.
 3. **Color:** Natural.

2.7 PESTICIDES

- A. **General:** Pesticide registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

- B. **Pre-Emergent Herbicide (Selective and Non-Selective):** Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. **Post-Emergent Herbicide (Selective and Non-Selective):** Effective for controlling weed growth that has already germinated.

2.8 TREE STABILIZATION MATERIALS

A. Stakes and Guys:

1. **Upright and Guy Stakes:** Rough-sawn, sound, new hardwood, free of knots, holes, cross grain, and other defects, 2-by-2-inch nominal by length indicated, pointed at one end.
2. **Flexible Ties:** Wide rubber or elastic bands or straps of length required to reach stakes or turnbuckles.
3. **Tree-Tie Webbing:** UV-resistant polypropylene.
4. **Retain first subparagraph below for tall and large-caliper trees.**
5. **Proprietary Staking-and-Guying Devices:** Proprietary stake and adjustable tie systems to secure each new planting by plant stem; sized as indicated and per manufacturer's written recommendations.
 - a. **Products:** Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) Arborbrace; ArborBrace Tree Guying System.
 - 2) Decorations for Generations, Inc.; Reddy Stake or Mega Stake System.

26.3 EXECUTION

PART 3 - Execution

3.1 EXAMINATION

- A. **Examine areas to receive plants for compliance with requirements and conditions affecting installation and performance.**
 1. **Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.**

2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
 3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
 - C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways in accordance with all applicable provisions of the LFUCG engineering manual.
- C. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Architect's acceptance of layout before excavating or planting. Make minor adjustments as required.
- D. Apply anti-desiccant to trees and shrubs using power spray to provide an adequate film over trunks (before wrapping), branches, stems, twigs, and foliage to protect during digging, handling, and transportation.
 1. If deciduous trees or shrubs are moved in full leaf, spray with anti-desiccant at nursery before moving and again two weeks after planting.
- E. Wrap trees and shrubs with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during digging, handling, and transportation.

3.3 PLANTING AREA ESTABLISHMENT

- A. Loosen sub-grade of planting areas to a minimum depth of 6 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

1. Spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil.
 - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
 - b. Mix lime with dry soil before mixing fertilizer.
 2. Spread planting soil to a depth of 12 inches but not less than required to meet finish grades after natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
 - a. Spread approximately one-half the thickness of planting soil over loosened subgrade. Mix thoroughly into top 2 inches of subgrade. Spread remainder of planting soil.
- B. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.
- C. Before planting, obtain Owner/Urban Forester's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 EXCAVATION FOR TREES AND SHRUBS

- A. Planting Pits and Trenches: Excavate circular planting pits with sides sloping inward at a 30-45 degree angle. Excavations with vertical sides are not acceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.
1. Excavate approximately three times as wide as ball diameter for balled and burlapped, balled and potted or container-grown stock.
 2. Excavate at least 12 inches wider than root spread and deep enough to accommodate vertical roots for bare-root stock.
 3. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
 4. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
 5. Maintain required angles of repose of adjacent materials as shown on the Drawings. Do not excavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
 6. Maintain supervision and protection of excavations at all times during the project.

7. Keep excavations covered or otherwise protected when unattended by Installer's personnel.
- B. Subject to the acceptance of the Owner/Urban Forester, subsoil and topsoil removed from excavations may be used as planting soil.
- C. Obstructions: Notify Owner/Urban Forester if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.
 1. **Hardpan Layer: Drill 6-inch- diameter holes, 24 inches apart, into free-draining strata or to a depth of 10 feet, whichever is less, and backfill with free-draining material.**
- D. Fill excavations with water and allow to percolate away before positioning trees and shrubs.
- E. Drainage: Notify ENGINEER if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.

3.5 TREE, SHRUB, AND VINE PLANTING

- A. Before planting, verify that root flare is visible at top of root ball according to ANSI A300 standards. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.
- B. Remove stem girdling roots and kinked roots on bare rooted plant material. Remove injured roots by cutting cleanly; do not break.
- C. Set balled and burlapped stock plumb and in center of planting pit or trench with root flare 1 inch above adjacent finish grades.
 1. Use planting soil for backfill.
 2. After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
 3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
 4. Place planting tablets in each planting pit when pit is approximately one-half filled; in amounts specified in soil reports from soil-testing laboratory. Place tablets beside the root ball about 1 inch from root tips; do not place tablets in bottom of the hole.

5. Continue backfilling process. Water again after placing and tamping final layer of soil.
- D. Set balled and potted or container-grown stock plumb and in center of planting pit or trench with root flare 1 inch above adjacent finish grades.
1. Use planting soil for backfill.
 2. Carefully remove root ball from container without damaging root ball or plant.
 3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
 4. Place planting tablets in each planting pit when pit is approximately one-half filled; in amounts recommended in soil reports from soil-testing laboratory. Place tablets beside the root ball about 1 inch from root tips; do not place tablets in bottom of the hole.
 5. Continue backfilling process. Water again after placing and tamping final layer of soil.
- E. Set fabric bag-grown stock plumb and in center of planting pit or trench with root flare 1 inch above adjacent finish grades.
1. Use planting soil for backfill.
 2. Carefully remove root ball from fabric bag without damaging root ball or plant. Do not use planting stock if root ball is cracked or broken before or during planting operation.
 3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
 4. Place planting tablets in each planting pit when pit is approximately one-half filled; in amounts recommended in soil reports from soil-testing laboratory. Place tablets beside the root ball about 1 inch from root tips; do not place tablets in bottom of the hole.
 5. Continue backfilling process. Water again after placing and tamping final layer of soil.
- F. Set and support bare-root stock in center of planting pit or trench with root flare 1 inch above adjacent finish grade.
1. Use planting soil for backfill.
 2. Spread roots without tangling or turning toward surface, and carefully work backfill around roots by hand. Puddle with water until backfill layers are completely saturated. Plumb before backfilling, and maintain plumb while working backfill around roots and placing layers above roots.

3. Place planting tablets in each planting pit when pit is approximately one-half filled; in amounts recommended in soil reports from soil-testing laboratory. Place tablets beside soil-covered roots about 1 inch from root tips; do not place tablets in bottom of the hole or touching the roots.
 4. Continue backfilling process. Water again after placing and tamping final layer of soil.
- G. When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.

3.6 MECHANIZED TREE SPADE PLANTING

- A. Trees may be planted with an approved mechanized tree spade at the designated locations. Do not use tree spade to move trees larger than the maximum size allowed for a similar field-grown, balled-and-burlapped root-ball diameter according to ANSI A300 standards, or larger than the manufacturer's maximum size recommendation for the tree spade being used, whichever is smaller.
- B. When extracting the tree, center the trunk within the tree spade and move tree with a solid ball of earth.
- C. Cut exposed roots cleanly during transplanting operations.
- D. Use the same tree spade to excavate the planting hole as was used to extract and transport the tree.
- E. Plant trees as shown on Drawings, following procedures in "Tree, Shrub, and Vine Planting" Article.
- F. Where possible, orient the tree in the same direction as in its original location.

3.7 TREE AND SHRUB PRUNING

- A. Remove only dead, dying, or broken branches. Do not prune for shape.
- B. Prune, thin, and shape trees, shrubs, and vines as directed by Owner/Urban Forester.
- C. Prune, thin, and shape trees, shrubs, and vines according to professional horticultural and arboricultural practices. Unless otherwise indicated by Owner/Urban Forester, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs; and prune to retain natural character.
- D. Do not apply pruning paint to wounds unless authorized by Owner/Urban Forester.

3.8 TREE STABILIZATION

A. Install trunk stabilization as follows unless otherwise indicated:

1. Upright Staking and Tying: Stake trees of 2- through 5-inch caliper. Stake trees of less than 2-inch caliper only as required to prevent wind tip out. Use a minimum of two stakes of length required to penetrate at least 18 inches below bottom of backfilled excavation and to extend to the dimension shown on Drawings above grade. Set stakes and space to avoid penetrating root balls or root masses.
2. Use two stakes for trees up to 12 feet high and 2-1/2 inches or less in caliper; three stakes for trees less than 14 feet high and up to 4 inches in caliper. Space stakes equally around trees.
3. Support trees with bands of flexible ties at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.

B. Staking and Guying: Stake and guy trees more than 14 feet in height and more than 3 inches in caliper unless otherwise indicated. Securely attach no fewer than three guys to stakes 30 inches long, driven to grade.

1. Site-Fabricated Staking-and-Guying Method:

- a. For trees more than 6 inches in caliper, anchor guys to wood deadmen buried at least 36 inches below grade. Provide turnbuckle or compression spring for each guy wire and tighten securely.
- b. Support trees with bands of flexible ties at contact points with tree trunk and reaching to turnbuckle or compression spring. Allow enough slack to avoid rigid restraint of tree.
- c. Support trees with strands of cable or multiple strands of tie wire, connected to the brass grommets of tree-tie webbing at contact points with tree trunk and reaching to turnbuckle or compression spring. Allow enough slack to avoid rigid restraint of tree.
- d. Attach flags to each guy wire, 30 inches above finish grade.
- e. Paint turnbuckles or compression springs with luminescent white paint.

2. Proprietary Staking and Guying Device: Install staking and guying system sized and positioned as recommended by manufacturer unless otherwise indicated and according to manufacturer's written instructions.

3.9 PLANTING AREA MULCHING

A. Mulch backfilled surfaces of planting areas and other areas indicated.

1. Trees in Turf Areas: Apply organic mulch ring of 2-inch average thickness, with 12-inch radius around trunks or stems. Do not place mulch within 3 inches of trunks or stems.

3.10 PLANT MAINTENANCE

- A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.
- B. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.
- C. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.
- D. Remove tree stabilization devices after 1 year from date of installation.
- E. Water trees as required to provide 1" of water per week on average.

3.11 CHEMICAL APPLICATION

- A. Apply pesticides and other chemical products and biological control agents in accordance with authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.
- B. Pre-Emergent Herbicides (Selective and Non-Selective): Apply to tree, shrub, and ground-cover areas in accordance with manufacturer's written recommendations. Do not apply to seeded areas.
- C. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations. CLEANUP AND PROTECTION
- D. During planting, keep adjacent paving and construction clean and work area in an orderly condition.
- E. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.
- F. After installation and before the final inspection for completion, remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.

3.12 DISPOSAL

- A. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off Owner's property.

26.4 PAYMENT

Accepted quantities will be paid for at the Contract Unit Price per each as quoted and shall be full compensation for all Work required under this section.

All labor, materials (other than the plants), equipment, excavation, bedding, and backfilling shall be incidental to the placement of each species.

TECHNICAL SPECIFICATIONS

SECTION 27 -- BIKE BOX COLORIZED PAVEMENT DEMARCATION

27.1 DESCRIPTION

Furnish and install colorized pavement demarcation consisting of a polymer resin binder with a 100% Recycled Pigmented glass aggregate topping onto an asphalt and/or concrete pavement.

27.2 SUBMITTALS

Provide the following submittals to ENGINEER for review. Obtain ENGINEER's approval before beginning the trial section of colorized pavement demarcation.

A) Submit a colored demarcation Quality Control Plan (QCP). The colored demarcation QCP must include:

1. Schedule for the trial work and the production work colored demarcation.
2. Description of equipment for placing colored demarcation and traffic control plan.
3. Description of equipment for measuring, mixing, placing, and finishing colored demarcation.
4. Method for protecting areas not to receive colored demarcation.
5. Cure time estimates for colored demarcation.
6. Storage and handling of colored demarcation components.
7. Disposal of excess colored demarcation and containers.
8. Contingency plan for possible failure during the colored demarcation application.
9. Name of the certified independent testing laboratory for the material components.
10. An inspection of the automated application equipment prior to the award of the project.

B) Submit a material safety data sheet (SDS) for each shipment of colored demarcation components before use.

C) Submit a certificate of compliance for the polymer resin binder and the 100% recycled pigmented glass aggregate topping.

D) Have the polymer resin binder and the 100% recycled pigmented glass aggregate topping tested at a certified independent testing laboratory and then furnish the verifications to the Engineer that the materials meet all requirements listed in these specifications.

E) Submit several color variation options meeting the color requirements within this special note.

F) Obtain ENGINEER's approval of trial colored demarcation on asphalt pavement and conduct a pre-construction conference with supplier, foreman, project superintendent, and ENGINEER before starting colored demarcation production work. The trial colored demarcation shall be in accordance with the following:

1. Be at least 6 feet wide by 20 feet long.
2. Be constructed using the same equipment as the production work.
3. Replicate field conditions, including ambient and surface temperatures, anticipated for the production work.
4. Demonstrate surface preparation requirements.
5. Remove pavement markers and delineation within the area to receive colored demarcation, for the lane and length involved, prior to placing polymer resin binder.
6. Document the settings on the applicator equipment, initial quantities of resin and aggregate topping, and unused quantities of resin and the 100% recycled pigmented aggregate topping remaining in the applicator equipment after application.
7. Determine the initial set time for polymer resin binder in colored demarcation.
8. Complete in accordance with approved traffic control plan.
9. Have a coefficient of friction of at least 0.65 when tested in conformance BS / BPN Tester. If the coefficient of friction testing is below 0.65, correct or remove and replace the trial colored demarcation to meet or exceed the specified value.
10. Demonstrate colored demarcation removal methods by removing the trial.
11. Dispose of removed material.

27.3 MATERIALS AND EQUIPMENT

Polymer Resin Binder

Provide a polymer resin binder which holds the aggregate topping firmly in place, and which meets the following requirements.

Polymer Resin Binder Requirements

Property	Requirement	Test Method
Ultimate Tensile Strength	2650 psi min.	ASTM D638
Elongation at break point	30% min.	ASTM D638
Compressive Strength	1600 psi min.	ASTM D695
Water Absorption	1.0 % max.	ASTM D570
Shore D Hardness, min. 77°F	65-75	ASTM D2240
Viscosity	1000-3000 mPa	ASTM D2393
Gel Time, minutes	15-45 min.	ASTM C881

Cure Rate	3 hrs. max.	ASTM D1640, 0.2" thickness
Mixing Ratio	As recommended by manufacturer	N/A

Aggregate Topping

A) Furnish a post 100% recycled pigmented glass aggregate. The aggregate topping is to be clean, dry, and free from deleterious matter. The aggregate topping must meet the following requirements and must be certified by the manufacturer as being completely post recycled with a five year fade free warranty.

Technical Data

Characteristic:	100% Recycled Pigmented Glass Aggregate
1. Specific Gravity:	2.5
2. Bulk Density:	Avg 86lb/ft ³
3. Volume/Ton:	Avg 26.5ft ³
4. Softening Point:	10. ~1350°F
5. Shape:	11. Sub-Angular, Non-Porous
6. Hardness:	12. 6.0 Mohs
7. Physical Composition:	13. Amorphus Silica
8. Chemical Composition:	14. Sodium Oxide:12-15%
9. Aluminum / Other Oxides:	15. Oxide: 1-2%
Color Retention:	16. 100%
Recycled Material:	17. 100%
Color Selection:	18. Per below requirements and selected by ENGINEER
Size Range Available:	19. 0.8-1.2mm
Environmentally Sound:	20. 100% green post recycled material

B) The daytime and nighttime chromaticity coordinates for the color used for green colored pavement shall be as follows:

	1		2		3		4	
	x	y	x	y	x	y	x	y
Daytime	0.230	0.754	0.266	0.500	0.367	0.500	0.444	0.555
Nighttime	0.230	0.754	0.336	0.540	0.450	0.500	0.479	0.520

C) The daytime luminance factor (Y) shall be at least 7, but no more than 35.

D) The green colored pavement reflectivity shall be uniform.

Automated Continuous Application

A) Automated continuous application shall be performed by an applicator vehicle with a minimum pigmented glass aggregate capacity of 40,000lbs and a minimum of 1200 gallons of the resin binder. The applicator shall continuously mix, meter, monitor and apply the resin binder and high friction aggregate in one continuous application pass.

B) The applicator vehicle shall be equipped with an inbuilt data management unit which is capable of producing real time data flow showing the volume of resin, the resin mil thickness on average throughout the application width, the volume of aggregate applied throughout the application width. The automated continuous application vehicle will have continuous pumping and portioning devices that blend the polymer binder within a controlled system. The polymer binder shall be blended and mixed in the ratio per the manufacturer's specification (+/- 2% by volume); the polymer binder shall be continuously applied once blended. The application vehicle should be capable of applying the minimum polymer binder spread rate.

C) The high friction 100% recycled pigmented glass aggregate shall be applied by the same automated continuous application vehicle that applies the resin binder to the pavement section. The automatic aggregate spreader shall be capable of applying up to a continuous 12 foot width application. The high friction recycled pigmented glass aggregate shall be applied within 3 seconds (+/- 1 sec) of the base polymer binder application onto the pavement section, from a maximum height of 12 inches from above the pavement section surface, at the minimum spread rate.

27.4 CONSTRUCTION

Attendance

Attendance during construction activities is mandatory for colored demarcation supplier, foreman, and project superintendent.

Surface Preparation

A) Surfaces must be clean, dry and free of all dust, oil, debris and other material that might interfere with the bond between the polymer resin binder material and existing surfaces.

B) Remove pavement markers and delineation within the area to receive colored demarcation, prior to placing polymer resin binder.

C) Sandblasting is required prior to installation on asphalt surfaces constructed within 30 days of colored pavement demarcation installation.

D) Perform additional surface preparation recommended by polymer resin binder supplier.

Weather Limitations

Do not apply the polymer resin binder on a wet surface or when the ambient temperature is below 55°F or when the anticipated weather conditions would prevent the proper application of the surface treatment.

Installation

- A) The minimum spread rate for polymer resin binder is 0.28-0.32 gallons per square yard.
- B) The minimum spread rate of retained aggregate is 13-20 pounds per square yard.
- C) No exposed wet spots of the polymer binder shall be visible once the recycled green pigmented aggregate is installed. The operations should proceed in such a manner that will not allow the mixed material to separate, cure, dry, be exposed or otherwise harden in such a way as to impair retention and bonding of the high friction surfacing 100% recycled pigmented glass aggregate. Walking, standing or any form of contact or contamination with the wet uncured resin will result in that section of resin and pigmented glass aggregate being removed and replaced at the installer's expense.
- D) Colored demarcation shall be allowed to cure for the minimum duration as recommended by the supplier. During that time the application area shall be closed to all vehicle and contractor equipment traffic.
- E) The surface texture of the colored demarcation shall be uniform and have a coefficient of friction not less than 0.65. Provide a correction plan for colored demarcation that fails to meet the coefficient of friction of 0.65. The correction plan may include correction of existing colored demarcation or remove & replace at the installers expense.
- F) The excess 100% recycled pigmented glass aggregate can be reused; the aggregate shall be reclaimed by a mechanical sweeper, the recovered aggregate must be clean, uncontaminated and dry.
- G) Excess and lose 100% recycled pigmented glass aggregate must be removed from the traveled way and bike lanes by street sweeping. Application of colored demarcation requires a second street sweeping 36 hours after application.
- H) Utilities, drainage structures, curbs, and any other structures within or adjacent to the treatment location must be protected against the application of the colored demarcation materials.

27.5 MEASUREMENT

The ENGINEER will measure the quantity of Colorized Pavement Demarcation by square foot of installed area. Payment shall be considered full compensation for all materials and labor required to complete the work described in this section.

27.6 PAYMENT

The following pay item will be applicable:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
	Colorized Pavement Demarcation - Green	Square Foot

TECHNICAL SPECIFICATIONS

SECTION 28 - MILLING AND TEXTURING

28.1 SCOPE

Work for this Section shall conform to the Kentucky Department of Highways Standard Specifications, Section 408, current edition and shall include all labor, materials, equipment, incidentals necessary to complete Work, including disposal of all resultant cuttings.

28.2 BASIS OF PAYMENT

Accepted quantities for Bituminous Pavement Milling and Texturing will be paid for at the Contract Unit Price as quoted (which shall be full compensation for all Work required under this Section) and paid per ton of Bituminous Pavement Milling and Texturing satisfactorily completed. All labor, materials, and equipment shall be incidental to the Milling and Texturing of Bituminous Pavement.

TECHNICAL SPECIFICATIONS

SECTION 29 - REMOVE AND RESET SIGNS

29.1 SCOPE

Work will consist of the removal and resetting of signs noted on the plans. The CONTRACTOR shall remove such designated sign and reset it at the location designated by the ENGINEER.

29.2 BASIS OF PAYMENT

The accepted quantities of fence, including gates, removed and replaced will be paid for at the contract unit price per each. Payment will be full compensation for all materials, equipment, and labor necessary to complete the Work.

TECHNICAL SPECIFICATIONS

SECTION 30 - PAYMENT/PERFORMANCE BOND COST

30.1 SCOPE

The intent of this item is to allow full payment for the direct cost of Payment and Performance Bonds required for this project. The Contractor shall be reimbursed for Payment/Performance Bond Cost in accordance with his direct cost for such bonds. The amount bid for this item shall be the direct and specific amount of the Payment/Performance Bond cost. There shall be no adjustment for the Contractor's internal cost for personnel or staff in obtaining such bonds, or for any other cost related to bonding. If such cost are not determined at the time the project is bid, the Contractor shall enter his best estimate of such cost after consulting with his bond agent. Bidder/Contractor shall also have the option of leaving this item blank, i.e. not requesting direct payment for bond costs. The final pay amount shall be the Contractor's direct cost for the Payment/Performance bond. The Contractor shall furnish a receipt from his Bonding Agent verifying the cost of the bonds. He shall also submit proof of payment that the bonds have been paid for. And, the Contractor shall submit a letter from the Bonding Agent that the bonds are in effect, are in good standing, and will be in effect for the remaining life of the project. Payment for the cost of Payment and Performance Bonds may generally be requested after the work is twenty percent (20%) complete.

30.2 BASIS OF PAYMENT

Payment for Payment/Performance Bonds shall be on a Lump Sum basis at the Contract Price quoted in the Bid Schedule. Such payment may be modified/adjusted only as permitted above, if such cost are not know at the time of submittal of the bid. Such payment will be full compensation for all labor, materials, equipment and incidentals necessary to complete the Work required by this Section.

TECHNICAL SPECIFICATIONS

SECTION 31 - RIVER COBLE/FLAT ROCK LINING

31.1 GENERAL DESCRIPTION

Section includes guidance on river cobble/creek rock

PRODUCTS AND MATERIALS

"Naturalized" Channel Lining (with geotextile liner):

- Limestone Creek Rock/Stone
- 50% angular, 50% rounded
- 6"-12" average size

Limestone Boulders and Slabs:

- Sizes shall range from 18" to 60" (length and width) and 6" to 18" in thickness
- Rounder boulders shall range from 18" to 48" in diameter

Contractor shall provide typical shop drawings for stream channel. Layout of limestone boulders/slabs and stream edges shall be coordinated with the landscape architect.

31.2 PAYMENT

Work for this Section shall be as shown on the plans and as described above. The work shall include all labor, materials, equipment, excavation & backfill, and all other incidentals necessary to complete the Work.

END OF SECTION

TECHNICAL SPECIFICATIONS

SECTION 32 - WHEEL STOPS

32.1 PART 1 – GENERAL

1.01 DESCRIPTION

A. Section includes specifications for precast concrete wheel stops for vehicular parking stalls in parking structures and parking lots as indicated.

1.02 REFERENCE STANDARDS

1.03 SUBMITTALS

A. Shop Drawings: Submit shop drawings of stops, including installation details and attachment details to at-grade concrete and asphalt pavement, for approval.

B. Product Data: Submit manufacturers' product data of precast stops and epoxy adhesive for approval.

1.04 QUALITY ASSURANCE:

A. Precast wheel stops shall be manufactured for the intended purpose by a company or firm specializing in the manufacture of precast concrete parking appurtenances.

32.2 PART 2 – PRODUCTS

2.01 MATERIALS

A. Wheel Stops: Precast, 3.5% minimum air-entrained concrete; 4000 psi minimum compressive strength. Each stop shall be reinforced with two No. 4 deformed steel reinforcing bars, minimum. Provide chamfered corners and drainage slots on underside, and provide holes for dowel-anchoring to substrate. Unless indicated otherwise, provide stops of half octogonal configuration and 36-inch length.

B. Adhesive for Anchoring Stops to Parking Structure Slabs, At-Grade Concrete Pavements, and At-Grade Asphalt Pavements: Epoxy adhesive manufactured for the purpose, similar and equal to the adhesives specified in KYTC Standard Specifications.

C. Adhesive for Bonding Dowel to Wheel Stop: As proposed by Contractor and approved by the Engineer, suitable for application.

D. Steel Bars for Installation: Galvanized 5/8" diameter steel dowels or galvanized KYTC Standard Specifications

32.3 PART 3 – EXECUTION

3.01 INSTALLATION

A. Securely attach wheel stops into at-grade concrete and at-grade asphalt pavement with not less than two galvanized steel dowels embedded in holes cast into wheel stops. Firmly bond each dowel to wheel stop and to pavement.

B. At concrete pavement, drill holes in pavement for dowels. At parking structure slabs, epoxy to slab.

32.4 PAYMENT

Work for this Section shall be as shown on the plans and as described above. The work shall include all labor, materials, equipment, excavation & backfill, and all other incidentals necessary to complete the Work.

END OF SECTION

TECHNICAL SPECIFICATIONS

SECTION 33 - PRECAST CONCRETE BOX CULVERT

33.1 DESCRIPTION.

Install precast reinforced concrete box sections used as culverts, storm drains, and sewers. (PER KYTC STANDARDS)

33.2 MATERIALS.

Concrete. Conform to Subsections 601.02 and 601.03 and the Precast/Prestress Concrete Manual.

Steel Reinforcement. Conform to Section 811.

Backfill Material. Conform to Subsection 206.03.01.

Free Draining Backfill Material. Conform to Section 805.

Grout. Conform to Subsection 601.02.

Sand. Conform to Section 804.

Sand for Pipe Bedding. Conform to Section 804.

Crushed Aggregate for Bedding. Conform to Section 805.

Joint Sealer for Rigid Pipe. Conform to Section 807.

Geotextile Fabric. Conform to Section 843.

33.3 CONSTRUCTION.

Transportation and Handling. Handle and store the precast units so that flexural stresses are not induced until the concrete age is 7 days or attains a compressive strength of 3,000 psi.

Remove and replace all sections that are not in true alignment and grade or that show undue settlement after laying, or are otherwise damaged.

Precast Unit Construction. Construct units according to ASTM C 1433 and Section 605 with the following exceptions and additions:

- 1) A water meters is not required if using dry-cast methods.
- 2) Mark all box culverts sections with the following information on the inside top of each section with letters no less than 2 inches high:
 - a) Span, rise, maximum and minimum design earth cover, and KY Table 3.
 - b) Date of manufacture.
 - c) Name and trademark of the manufacturer.

For entrance and exit box sections, indent the required information. Mark interior sections by indenting or with waterproof paint.

- 3) Furnish precast sections at least 4 feet long.

4) Contrary to ASTM C 1433 Section 10.3, ensure the compressive strength of the cores tested are equal to or greater than the design strength.

Shop Drawings. Submit shop drawings for review according to Subsection 105.02, except do not include original tracings. Include on the shop drawings details of joint configuration, the size of rubber gaskets or butyl rubber sealants when used, the area of steel reinforcement, lift holes, and the size and location of reinforcement.

Excavation. Perform structure excavation according to Section 603, except as modified in this subsection.

Bedding. Perform bedding as specified in the Plans or Standard Drawings. Level the compacted bedding with a template or straightedge to ensure uniform support throughout the entire width and length of the structure.

When desired, substitute crushed aggregate up to 3/4 inch maximum size for sand as bedding material. Do not use DGA or gravel base for this substitution. Substitute measure for measure.

The Engineer will require a vertical trench from the bottom of the excavation to the top of the culvert or original ground, whichever is lower, as specified in the Plans or Standard Drawings.

Laying Sections. Do not lay any unit until the Engineer approves the proposed location. Take soundings for foundation design at the inlet and outlet of each culvert and at intervals no greater than 20 feet along the grade line of the bottom of the culvert, to a depth of 3 feet. Perform soundings on the centerline and at each edge of the culvert. Where ledge rock, gravel, hardpan, or other unyielding material is encountered or known to exist within the limits stated, prepare the foundation as specified in the Plans or Standard Drawings.

Camber the box culvert sections as the Engineer directs. Begin placing sections at the outlet end of the pipe with the bell or groove end being laid upgrade. Fully extend successive spigot ends into each adjoining hub. Provide a "come-along" or other mechanical device to pull each section firmly into the previously placed section, tightly meshing the joints. Do not push sections together with a tractor-mounted blade. After installing the sections, seal lift holes by inserting a tapered precast concrete plug and coating the top of the joint around the plug with asphalt mastic material.

When the Plans require the volume between side-by-side installations to be filled with grout, use grout consisting of one part cement to 6 parts mortar sand or concrete sand, with sufficient water to provide a consistency suitable for job conditions.

Provide drainage with 4-inch weepholes as specified in Subsections 610.03.03 and 603.03.05 respectively, except that for side-by-side installations separated by grout, place weepholes in the extreme outside walls only.

Grout formed openings between the precast sections and any side entry of pipes or top entry of manholes to form a watertight joint. When manholes are to be placed directly on the top slab of the precast sections, provide sufficient additional steel reinforcement in the top slab to compensate for the section removed.

Joints. Use either rubber gaskets, butyl rubber sealants, or asphalt mastic joint sealing compound in joints between the precast box sections. Use the same material throughout each individual structure.

A) **Rubber Gaskets.** Use a cement and lubricant to facilitate joining the sections that is recommended by the manufacturer of the rubber gaskets. Install the rubber gaskets in a manner to snugly fit in the beveled surface of the tongue and groove ends of the section to form a flexible water-tight seal under all conditions of service.

B) **Butyl Rubber Sealants.** Use a primer; rate and method of primer application; and width and method of application of the butyl rubber sealant recommended by the manufacturer. Provide the Engineer with the manufacturer's literature for installation procedures.

C) **Asphalt Mastic Joints.** Prime and seal asphalt mastic joints according to Subsection 701.03.05.

D) **Joint Fit.** Regardless of the type of sealant to be used, ensure proper meshing of the joints.

Do not allow sand or foreign materials to intrude into joints. If sand or foreign material is present within the joint upon joining the sections, thoroughly clean until no sand or foreign material is present, and reseal the joint.

If the joint is not entirely filled with sealant after connecting the culvert sections fill all exposed unsealed areas, both inside and outside the culvert, with asphalt mastic or other approved material. If using plastic gaskets, use an additional sealant compatible with the plastic and recommended by the gasket manufacturer.

Fill the exterior joint gap on the top of precast reinforced concrete boxes with mortar. Cover the exterior joint with a minimum of a 15-inch double layer geotextile fabric joint wrap. Before applying the wrap, ensure that the surface is free from dirt and foreign substance. Use one continuous roll of double layered joint wrap to cover the joint on the top of the box and to extend completely down the sides to the bottom of the box. During backfilling, keep the joint wrap in the proper location over the joint. Apply the joint wrap to all joint sections.

Backfilling. Backfill according to Subsection 603.03, the Plans, and the Standard Drawings. Place free draining backfill between side-by-side installations when required by the Plans. Compact the backfill as the Engineer directs.

Headwalls. Construct headwalls as specified in the Plans or Standard Drawings.

33.4 MEASUREMENT

Structure Excavation. The city will consider all excavation for culvert incidental to culvert. The city will not measure free draining backfill or grout between side-by-side installations for payment and will consider them incidental to this item of work.

Precast Reinforced Concrete Box Sections. The Department will measure the quantity in linear feet according to the length dimensions specified in the Plans. The Department will not measure joint materials (including the geotextile fabric wrap), shear connectors required for joining sections, and any required acceptance coring for payment and will consider them incidental to this item of work.

The Department will not measure repair of sections not in true alignment and grade or that show undue settlement after laying, or otherwise damaged.

Headwalls. The Department will measure the quantity of concrete and steel reinforcement in headwalls according to Subsections 601.04 and 602.04 respectively.

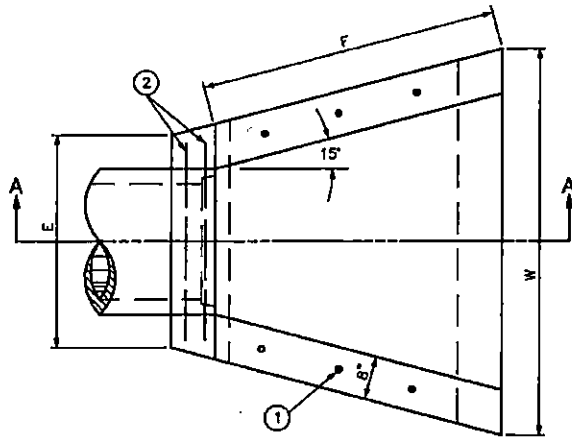
PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

	Pay Item	
Precast Concrete Box		LUMP SUM

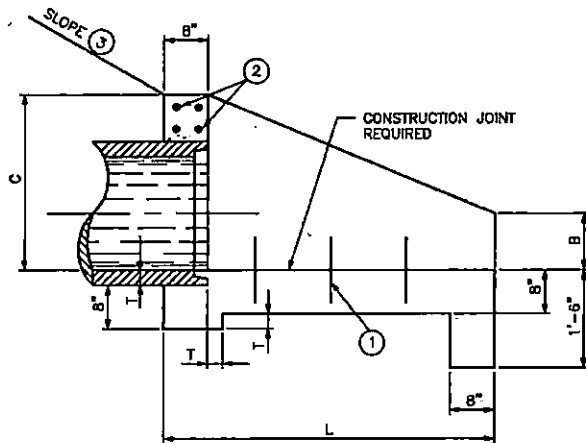
The OWNER will consider payment as full compensation for all work required under this section

Appendix A

Standard Drawings



PLAN VIEW



SECTION A-A

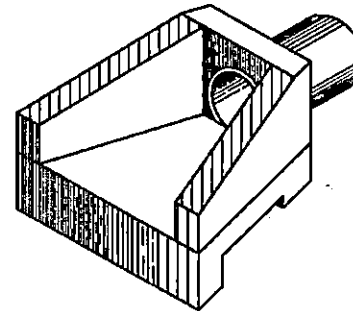
PIPE DIA.	DIMENSIONS							CLASS A CONC.	REINF. STEEL
	B	C	E	F	L	W	T	C.Y.	LBS.
15"	0'-7 1/2"	2'-0"	2'-9"	3'-5 3/8"	4'-0"	4'-10 3/4"	2 1/4"	0.90	10
18"	0'-9"	2'-3"	3'-0"	3'-11 9/16"	4'-6"	5'-4 15/16"	2 1/2"	0.97	11
21"	0'-10 1/2"	2'-6"	3'-3"	4'-5 13/16"	5'-0"	5'-11 1/8"	2 3/4"	1.17	12
24"	1'-0"	2'-9"	3'-6"	5'-0"	5'-6"	6'-5 3/8"	3"	1.38	12
27"	1'-1 1/2"	3'-0"	3'-9"	5'-6 3/16"	6'-0"	6'-11 9/16"	3 1/4"	1.62	13

SHEET NOTES:

- ① 6 #4 x 1'-0" DOWELS
- ② 4 #4 x ("E" DIMENSION MINUS 4")
- ③ SLOPE SHALL BE WARPED TO FIT HEADWALL WHEN PIPE IS SKEWED AND / OR NORMAL SLOPE VARIES FROM 2:1.

NOTES:

- 1. REINFORCING STEEL MINIMUM GRADE 40, EVENLY SPACED (MIN. SPACING 12" O.C.)
- 2. VOLUME DISPLACED BY PIPE COMPUTED USING INSIDE DIAMETER OF PIPE.
- 3. WING ANGLES AND / OR DIMENSIONS MAY BE ALTERED DURING CONSTRUCTION TO ACCOMMODATE FLOW OF WATER.
- 4. APRON BETWEEN WINGS SHALL BE SLOPED IN DIRECTION OF FLOW EQUAL TO SLOPE OF PIPE, BUT NOT TO EXCEED 5%. FRONT FACE OF HEADWALL SHALL REMAIN VERTICAL.
- 5. CHAIN LINK FENCE IS REQUIRED ON ALL HEADWALLS WHEN VERTICAL FACE "C" IS GREATER THAN 30".
- 6. ALL EXPOSED EDGES ARE TO HAVE 3/4" CHAMFER.
- 7. SKEWED PIPE REQUIRES SPECIAL DESIGN.



ISOMETRIC VIEW

LEXINGTON

DIVISION OF ENGINEERING

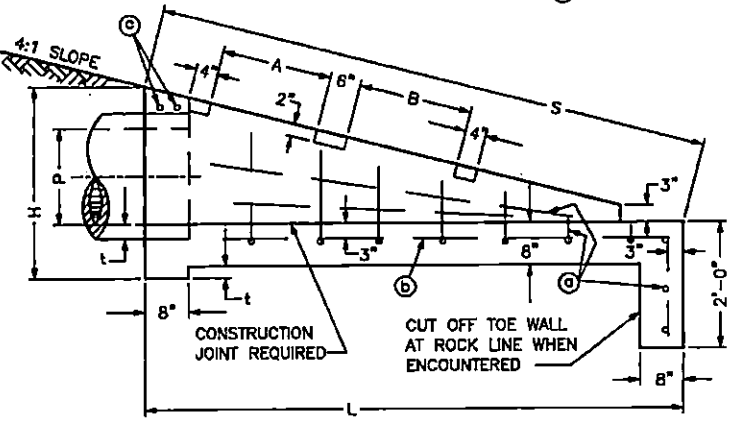
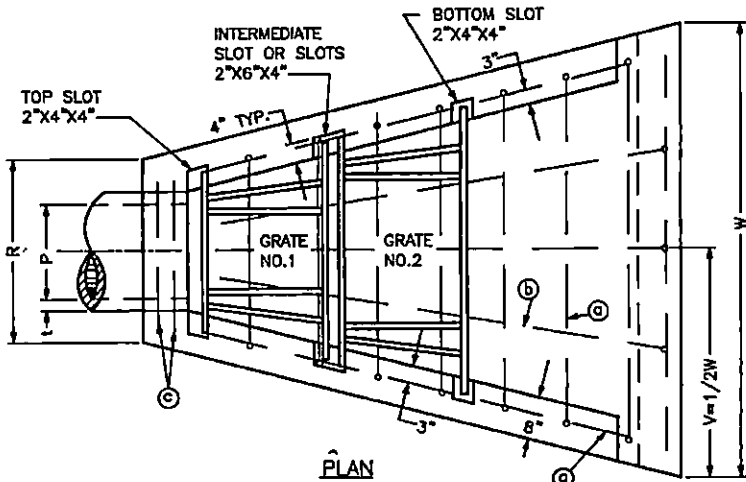
PIPE CULVERT HEADWALLS
0° SKEW
15"-27" CIRCULAR PIPE

STANDARD DRAWING NO. 153

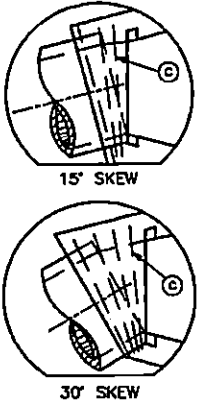
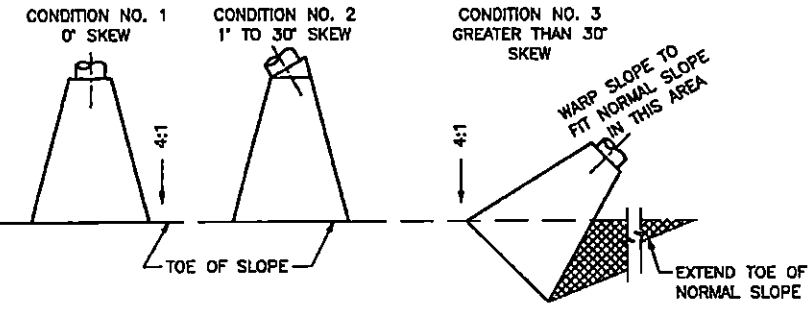
APPROVAL: 9/22/17

URBAN COUNTY ENGINEER DATE

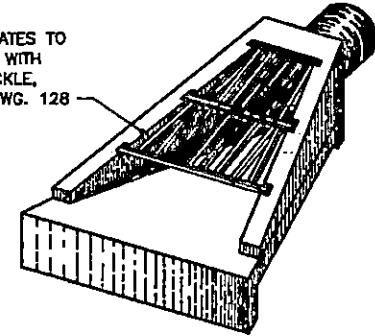
COMMISSIONER DATE



PLAN VIEW OF STRUCTURE LOCATIONS



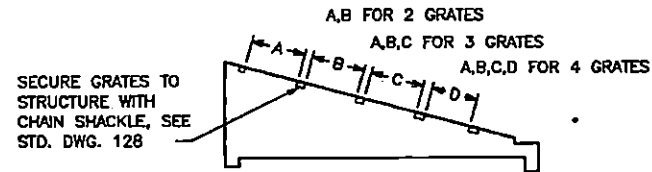
SECURE GRATES TO STRUCTURE WITH CHAIN SHACKLE, SEE STD. DWG. 128



18"-24" TRIMETRIC VIEW

- NOTES:**
- 1. THE MINIMUM REQUIREMENT FOR REINFORCING STEEL SHALL BE GRADE 40. FIELD BENDING WILL BE PERMITTED.
 - ② ONE ADDITIONAL © BAR WILL BE REQUIRED FOR EACH 15° SKEW.
 - 3. t IS CONCRETE PIPE WALL THICKNESS.

DETAIL SHOWING LOCATION OF SLOTS FOR GRATES



SEE STD. DWG. 183 FOR GRATE DETAILS.

DIMENSIONS

	P	H	L	S	R	V	W	A	B	C	D
18"	3'-0"	8'-6"	8'-9 1/8"	2'-11 1/2"	3'-7 1/2"	7'-3"	1'-9"	1'-9"	-	-	-
24"	3'-7"	10'-8"	11'-0"	3'-6 1/2"	4'-5 1/2"	8'-11"	2'-9"	2'-9"	-	-	-
30"	4'-2"	12'-10"	13'-2 3/4"	4'-1 1/2"	5'-3 1/2"	10'-7"	2'-9"	2'-9"	1'-9"	-	-
36"	4'-8"	15'-0"	15'-5 1/2"	4'-8 1/2"	6'-1 1/2"	12'-3"	2'-9"	2'-9"	1'-9"	1'-9"	-

NO. OF GRATES REQ'D	2'	3'
	2	-
-	2	
1	2	
2	2	

NO. 4 REINFORCEMENT BARS				LBS.	CLASS "A" CONC. CU.YD.
NUMBER-LENGTH AND WEIGHT					
⊙	Ⓟ	②	©		
14 AT 6'-5"	3 AT 8'-6"	2 AT 2'-8"		81	1.8
16 AT 8'-0"	3 AT 10'-6"	2 AT 3'-3"		111	2.7
18 AT 9'-7"	3 AT 12'-9"	2 AT 3'-10"		146	3.8
20 AT 11'-4"	3 AT 15'-0"	2 AT 4'-5"		187	5.1



DIVISION OF ENGINEERING

SLOPED AND FLARED BOX INLET-OUTLET
18"-24"-30"-36"
ALL SKEWS

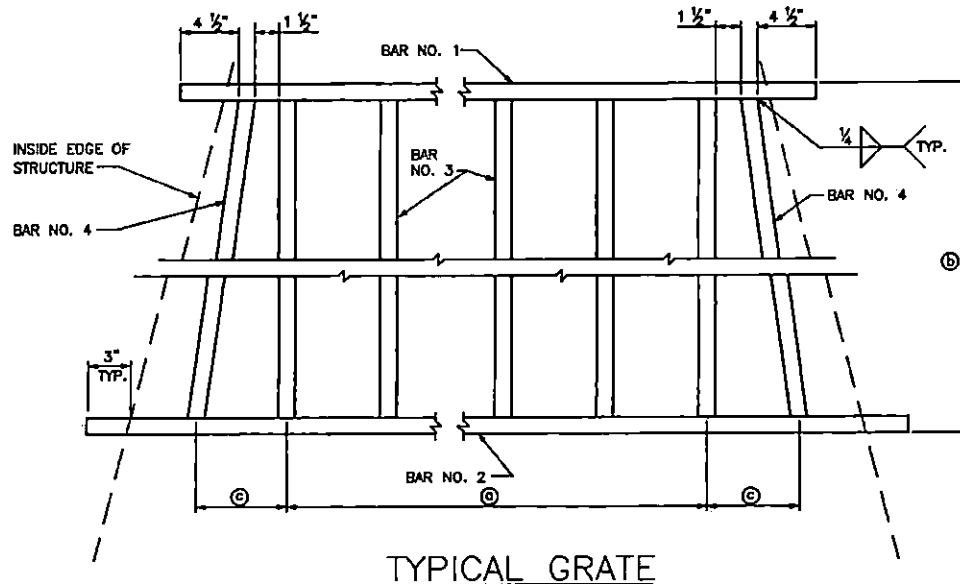
STANDARD DRAWING NO. 162

APPROVAL: 9/22/17

URBAN COUNTY ENGINEER: [Signature] DATE: 9/22/17

COMMISSIONER: [Signature] DATE:


BOX INLET-OUTLET SIZE	GRATE		BAR NO. 1	BAR NO. 2	BAR NO. 3		BAR NO. 4	LBS. STRUCTURAL STEEL	
	NO.	SIZE	LENGTH	LENGTH	NO. BARS	LENGTH	LENGTH	EACH GRATE	TOTAL
18"	1	2'-0"	2'-6 1/2"	3'-5 3/4"	4	1'-10"	1'-10 1/4"	116	272
	2	2'-0"	3'-7 3/8"	4'-6 7/8"	6	1'-10"	1'-10 1/4"	156	
24"	1	3'-0"	3'-1 1/2"	4'-6 5/8"	5	2'-10"	2'-10 3/8"	187	454
	2	3'-0"	4'-8 1/2"	6'-1 3/8"	8	2'-10"	2'-10 3/8"	267	
30"	1	3'-0"	3'-8 1/2"	5'-1 1/2"	6	2'-10"	2'-10 3/8"	215	796
	2	3'-0"	5'-3 1/2"	6'-8 5/8"	9	2'-10"	2'-10 3/8"	294	
	3	2'-0"	6'-10 1/2"	7'-9 3/4"	13	1'-10"	1'-10 1/4"	287	
36"	1	3'-0"	4'-3 1/2"	5'-8 1/2"	7	2'-10"	2'-10 3/8"	242	1218
	2	3'-0"	5'-10 1/2"	7'-3 5/8"	10	2'-10"	2'-10 3/8"	321	
	3	2'-0"	7'-5 1/2"	8'-4 3/4"	14	1'-10"	1'-10 1/4"	308	
	4	2'-0"	8'-6 3/4"	9'-5 7/8"	16	1'-10"	1'-10 1/4"	347	



TYPICAL GRATE

NOTES:

- Ⓒ EQUALLY SPACE BARS NO. 3.
- Ⓓ SIZE OF GRATE EITHER 2'-0" OR 3'-0".
- Ⓔ 5 1/2" FOR 2'-0" GRATE, 7" FOR 3'-0" GRATE.
- 1. ALL COMPONENTS ARE 1" x 2" STRUCTURAL STEEL BARS.
- 2. SEE STD. DWG. 162.
- 3. SECURE GRATE TO STRUCTURE WITH CHAIN SHACKLE, SEE STD. DWG. 128.



LEXINGTON

DIVISION OF ENGINEERING

GRATES FOR SLOPED AND FLARED BOX INLET-OUTLET

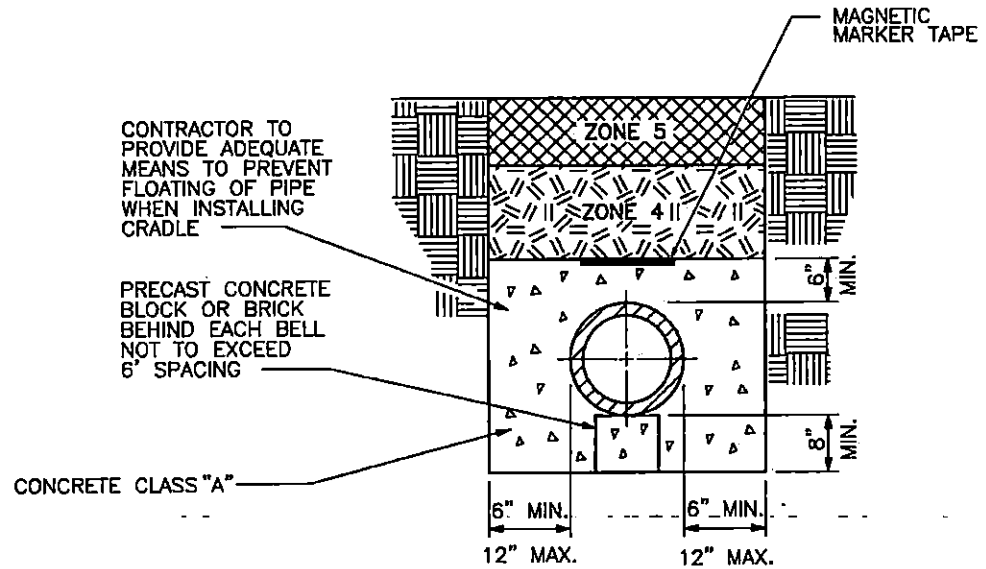
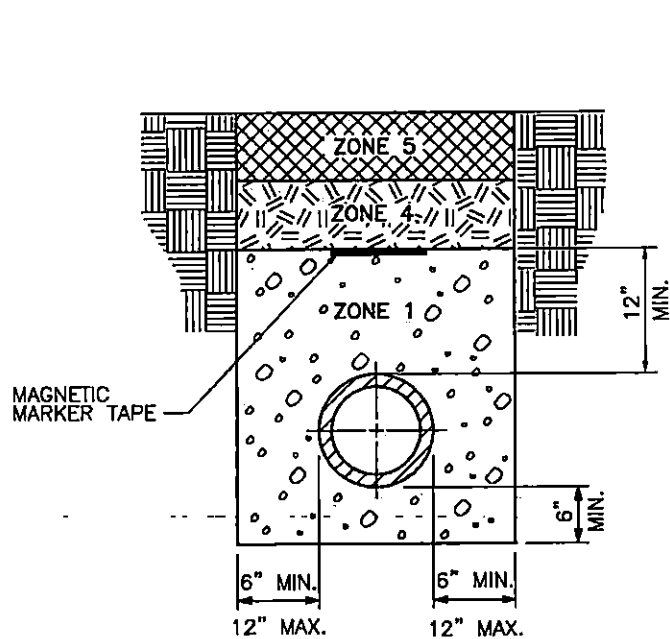
STANDARD DRAWING NO. 163

APPROVAL: *[Signature]* 9/22/17

URBAN COUNTY ENGINEER DATE

COMMISSIONER *[Signature]* 9/22/17

DATE



STANDARD CONCRETE ENCASEMENT
 (NOTE: AS REQUIRED BY DESIGN)

**PIPE LAID IN ROCK
 OR SOIL TRENCH**

PIPE BACKFILL DESCRIPTIONS	
ZONE 1	NO. 9 STONE
ZONE 2	NO. 9 OR NO. 57 STONE
ZONE 3	COMPACTED DGA
ZONE 4	CONSOLIDATED SOIL, (NO ROCK GREATER THAN 6" DIAMETER) NO. 9, OR NO. 57 STONE
ZONE 5	12" MAX. TOPSOIL, NO ROCK ALLOWED

NOTES:

1. COVER, UP TO AND INCLUDING ZONE 4 SHALL BE ESTABLISHED BEFORE TRENCH EXCAVATION.
2. ALL SANITARY SEWER LINES CONSTRUCTED FROM NON-METALLIC MATERIALS SHALL HAVE MAGNETIC MARKER TAPE INSTALLED IN THE TRENCH ABOVE THE SANITARY SEWER LINE.
3. MAGNETIC MARKER TAPE FOR SANITARY SEWER ONLY.

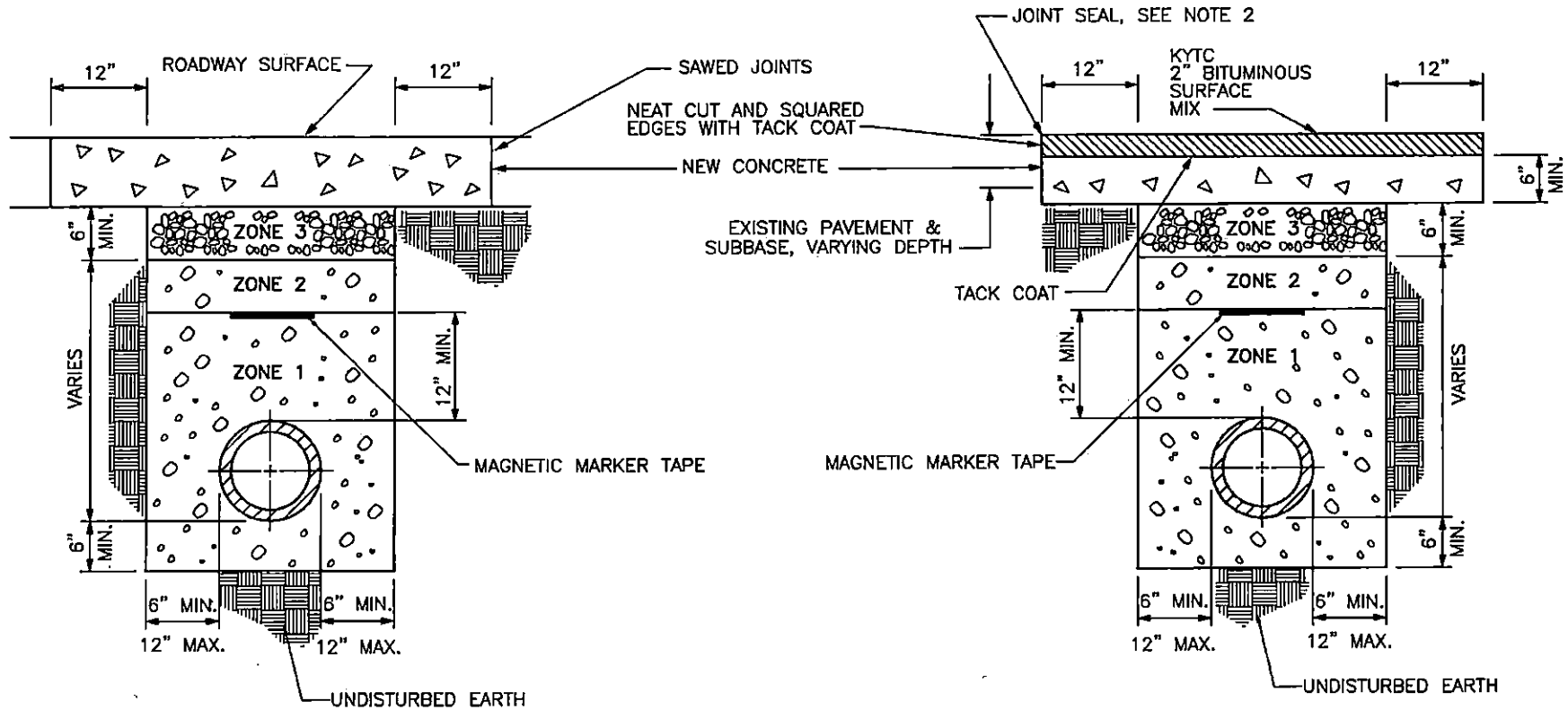
LEXINGTON
 DIVISION OF ENGINEERING

 TRENCHING, LAYING,
 BACKFILLING AND BEDDING
 OUTSIDE R/W LIMITS

 STANDARD DRAWING NO. 200
 APPROVAL: 9/22/17
 URBAN COUNTY ENGINEER DATE
 COMMISSIONER 9/22/17
DATE

CONCRETE PAVEMENT

BITUMINOUS PAVEMENT



NOTES:

1. REPLACE CONCRETE PAVEMENT WITH NEW CONCRETE PAVEMENT, 6" MINIMUM OR EXISTING THICKNESS, WHICHEVER IS GREATER.
2. SEAL PERIMETER OF CUT PAVEMENT WITH CRACK SEALANT THAT MEETS ASTM D6690, TYPE 2.
3. MAGNETIC MARKER TAPE FOR SANITARY SEWER ONLY.

PIPE BACKFILL DESCRIPTIONS	
ZONE 1	NO. 9 STONE
ZONE 2	NO. 9 OR NO. 57 STONE
ZONE 3	COMPACTED DGA
ZONE 4	CONSOLIDATED SOIL, (NO ROCK GREATER THAN 6" DIAMETER), NO. 9, OR NO. 57 STONE
ZONE 5	12" MAX. TOPSOIL, NO ROCK ALLOWED

LEXINGTON

DIVISION OF ENGINEERING

TRENCHING, LAYING,
BACKFILLING AND BEDDING
UNDER STREET PAVEMENT

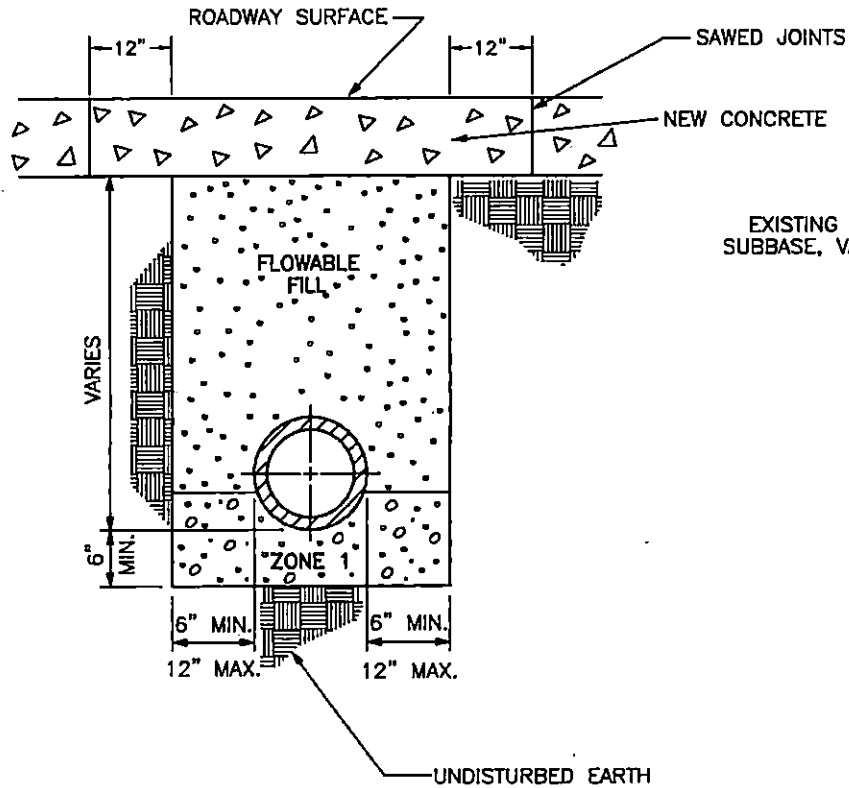
STANDARD DRAWING NO. **201-1**

APPROVAL: DATE: **9/22/17**

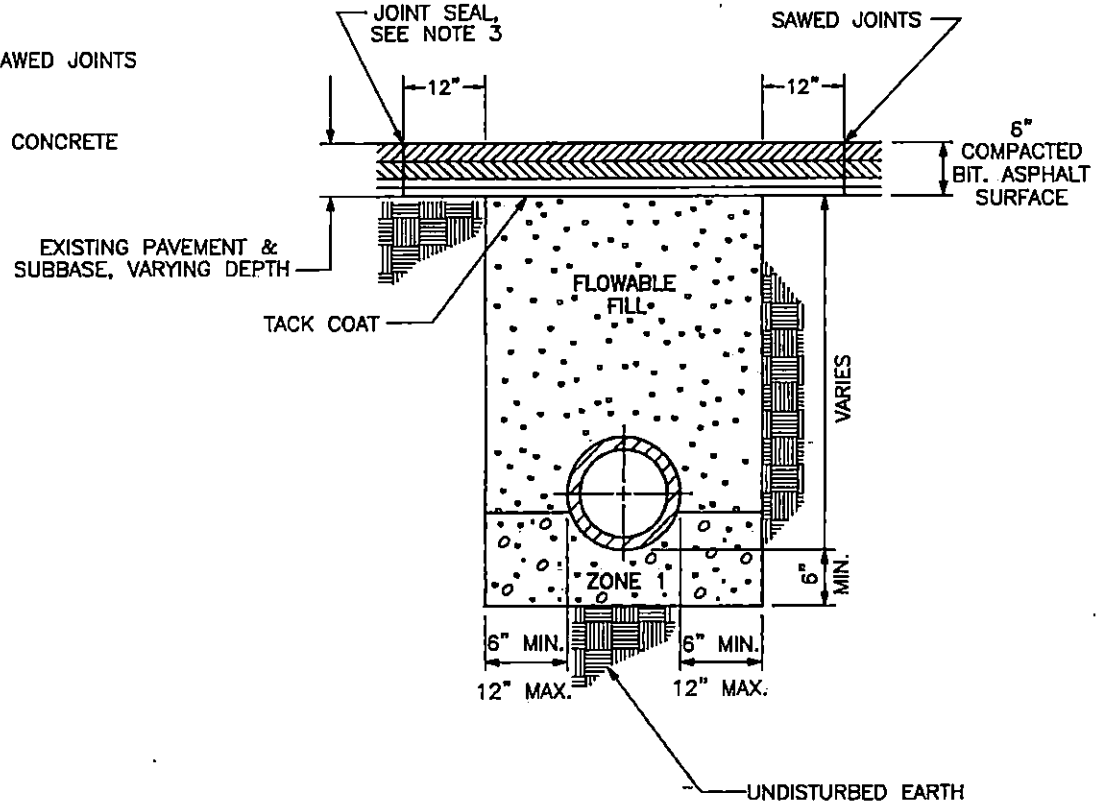
URBAN COUNTY ENGINEER: DATE: **9/22/17**

COMMISSIONER: _____ DATE: _____

CONCRETE PAVEMENT



BITUMINOUS PAVEMENT



PIPE BACKFILL DESCRIPTIONS	
ZONE 1	NO. 9 STONE
ZONE 2	NO. 9 OR NO. 57 STONE
ZONE 3	COMPACTED DGA
ZONE 4	CONSOLIDATED SOIL, (NO ROCK GREATER THAN 6" DIAMETER), NO. 9, OR NO. 57 STONE
ZONE 5	12" MAX. TOPSOIL, NO ROCK ALLOWED

NOTES:

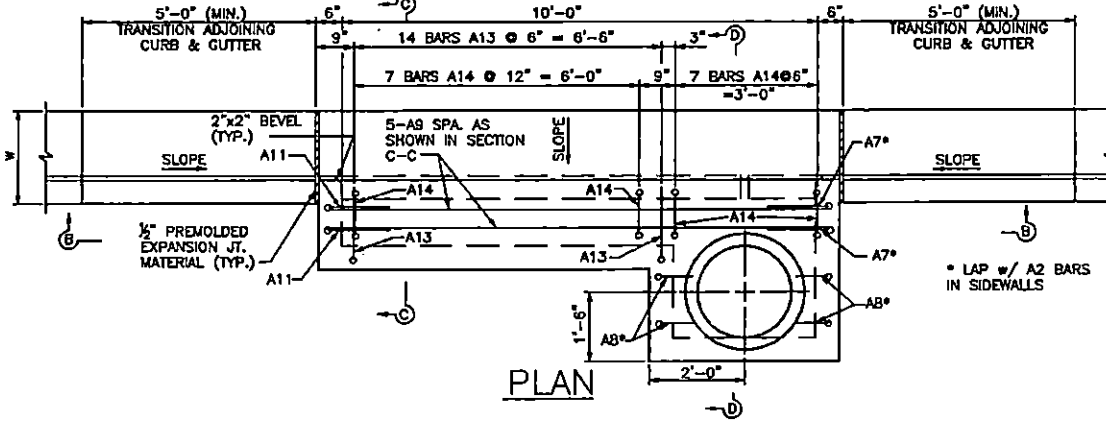
1. FLOWABLE FILL PER KYTC SPECIFICATION 601.03.03 FROM STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION CURRENT EDITION.
2. REPLACE CONCRETE PAVEMENT WITH NEW CONCRETE PAVEMENT, 6" MINIMUM OR EXISTING THICKNESS, WHICHEVER IS GREATER.
3. SEAL PERIMETER OF CUT PAVEMENT WITH CRACK SEALANT THAT MEETS ASTM D6690, TYPE 2.



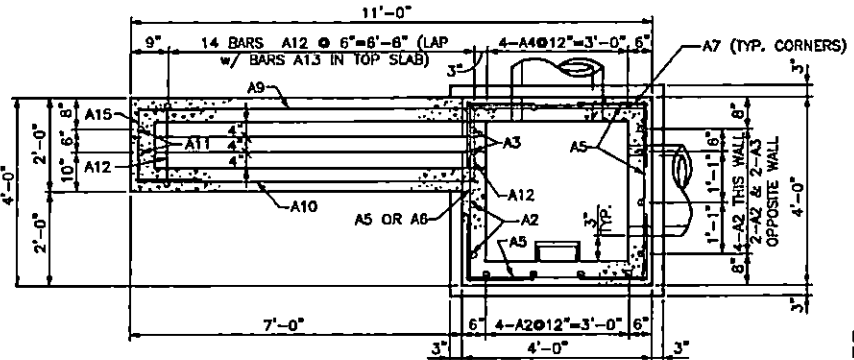
DIVISION OF ENGINEERING

TRENCHING, LAYING, BACKFILLING, AND BEDDING UNDER STREET PAVEMENT USING FLOWABLE FILL

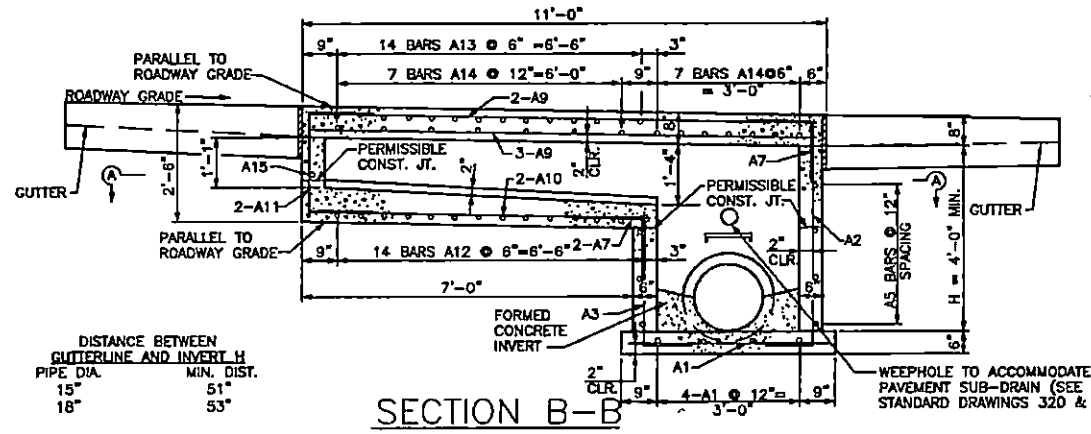
STANDARD DRAWING NO. 201-2
 APPROVAL: *[Signature]* 9/22/17
 URBAN COUNTY ENGINEER DATE
 COMMISSIONER *[Signature]* 9/22/17 DATE



PLAN

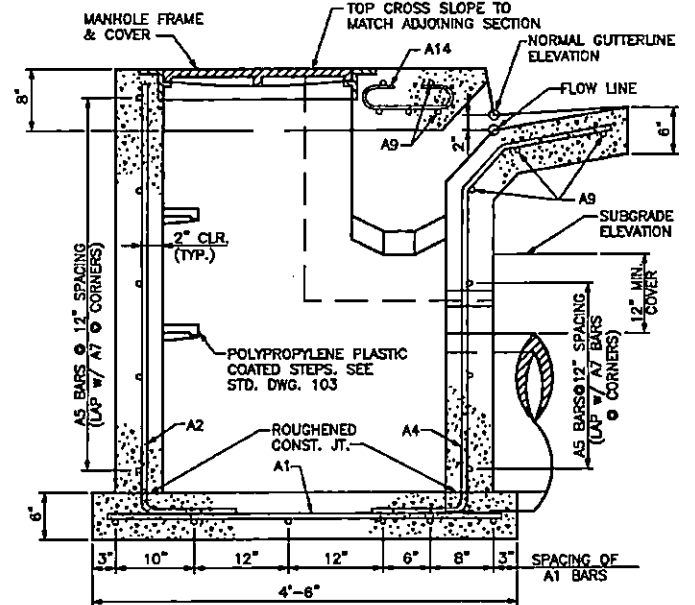


SECTION A-A

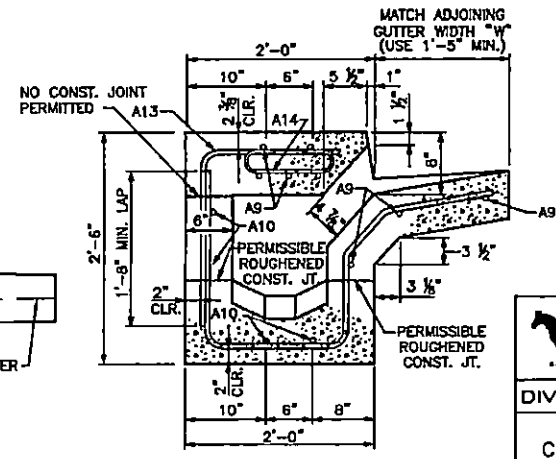


SECTION B-B

DISTANCE BETWEEN GUTTERLINE AND INVERT H	MIN. DIST.
15"	51"
18"	53"




SECTION D-D



SECTION C-C

SEE STD. DWG. 122-2 FOR BILL OF REINFORCEMENT & ADDITIONAL DETAILS



LEXINGTON

DIVISION OF ENGINEERING

CURB BOX INLET TYPE "A"
4'X4' BOX
15"-18" PIPES

STANDARD DRAWING NO. 122-1

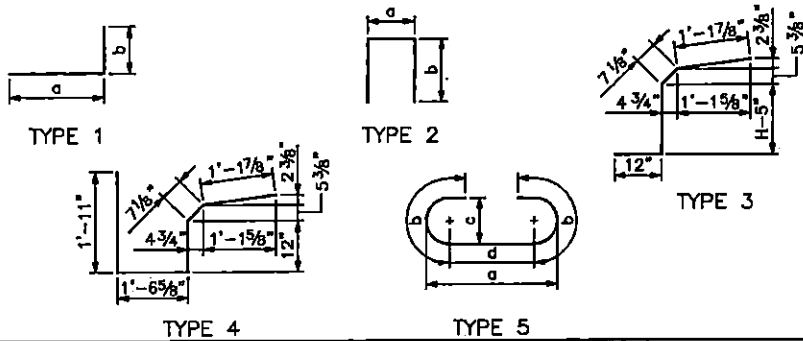
APPROVAL: *[Signature]* 9/22/17
URBAN COUNTY ENGINEER DATE
COMMISSIONER *[Signature]* 9/22/17 DATE

BILL OF REINFORCEMENT

MARK	TYPE	SIZE	NO.	LENGTH		LOCATION	a		b		c		d	
				FT.	IN.		FT.	IN.	FT.	IN.	FT.	IN.		
A1	STR	#5	10	4	2	FOOTING								
A2	1	#5	10	H+(1'-10")		CHAMBER WALLS	1	0	H+10"					
A3	1	#5	2	H-4"		CHAMBER WALLS	1	0	H-(1'-4")					
A4	3	#5	4	H+(2'-4")		CHAMBER FRONT WALL								
A5	STR	#5	15*	3	8	CHAMBER WALLS								
A6	STR	#5	2	2	2	CHAMBER ABOVE THROAT								
A7	1	#5	19*	2	8	CORNERS	1	4	.1 4					
A8	1	#5	4	2	1	CHAMBER WALLS & TOP	1	4	0 9					
A9	STR	#5	8	10	8	TOP SLAB & APRON								
A10	STR	#5	4	7	2	THROAT								
A11	2	#5	2	4	8	THROAT	2	1 5/8	1 4					
A12	4	#5	14	6	1	THROAT & APRON								
A13	1	#5	14	3	5	THROAT	1	11	1 6					
A14	5	#3	14	1	11	TOP SLAB	0	11 1/2	0 7		0	3	0	8 1/2
A15	2	#5	1	4	2	END THROAT	1	6	1 4					

* NO. OF BARS REQUIRED FOR H=4'-0"
ADD OR DEDUCT 4-A5 & 4-A7 FOR EACH 1'-0" INCREASE OR DECREASE IN H.

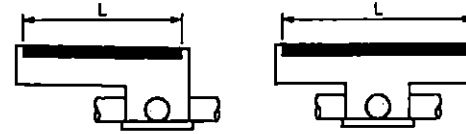
BAR TYPES



NOTES:

1. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI. STEEL REINFORCEMENT SHALL BE ASTM A-615, GRADE 60. ALL EXPOSED EDGES SHALL BE BEVELED 3/4" UNLESS OTHERWISE SHOWN.
2. THIS DRAWING DEPICTS A CURB BOX INLET IN A GRADE SITUATION. FOR CURB BOX BOX IN SAG SITUATION, DETAILS SHALL BE MODIFIED AS INDICATED IN DETAIL 'A'.
3. THE STANDARD OPENING LENGTH IS 10'-0" AS DETAILED HERE. THIS LENGTH MAY BE INCREASED OR DECREASED BASED ON HYDRAULIC ANALYSIS AND APPROVAL BY THE LEXINGTON-FAYETTE COUNTY URBAN GOVERNMENT ENGINEER. MODIFICATION TO THE OPENING LENGTH WILL REQUIRE MODIFICATION OF LENGTH OF BARS A9 & A10 AND INCREASE OR DECREASE IN NUMBER OF BARS A12, A13 & A14 MAINTAINING THE SAME MAXIMUM SPACING SHOWN ON THIS DRAWING.
4. MAXIMUM "H" FOR APPLICATION OF THIS DRAWING SHALL BE 10 FEET.
5. FIELD BEND OR CUT BARS A2, A4, AND A5 AS NECESSARY WHERE PIPES PENETRATE CHAMBER WALLS.
6. FOR CURB BOX INLET IN CURVE WITH CURB RADIUS OF LESS THAN 25', LONGITUDINAL BARS A9, A10 SHALL BE SHOP FABRICATED RADIALLY.

LEXINGTON - FAYETTE URBAN COUNTY GOVERNMENT

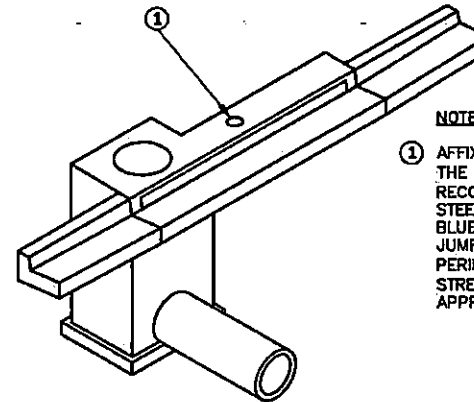


GRADE

SAG

DETAIL 'A'

APPLICABLE SITUATIONS



NOTES:

- ① AFFIX CIRCULAR MARKER TO THE TOP OF THE INLET BOX, PER MANUFACTURER'S RECOMMENDATIONS: 4" DIAMETER STAINLESS STEEL STAMPED DISK WITH BAKED ENAMEL BLUE BACKGROUND. LOGO OF FISH JUMPING OVER WAVES WITH TEXT ON PERIMETER "STORM DRAIN • DRAINS TO STREAM". ALMETEK INDUSTRIES OR APPROVED EQUAL.

WORK THIS DWG. WITH STD. DWG. 122-1

ISOMETRIC VIEW

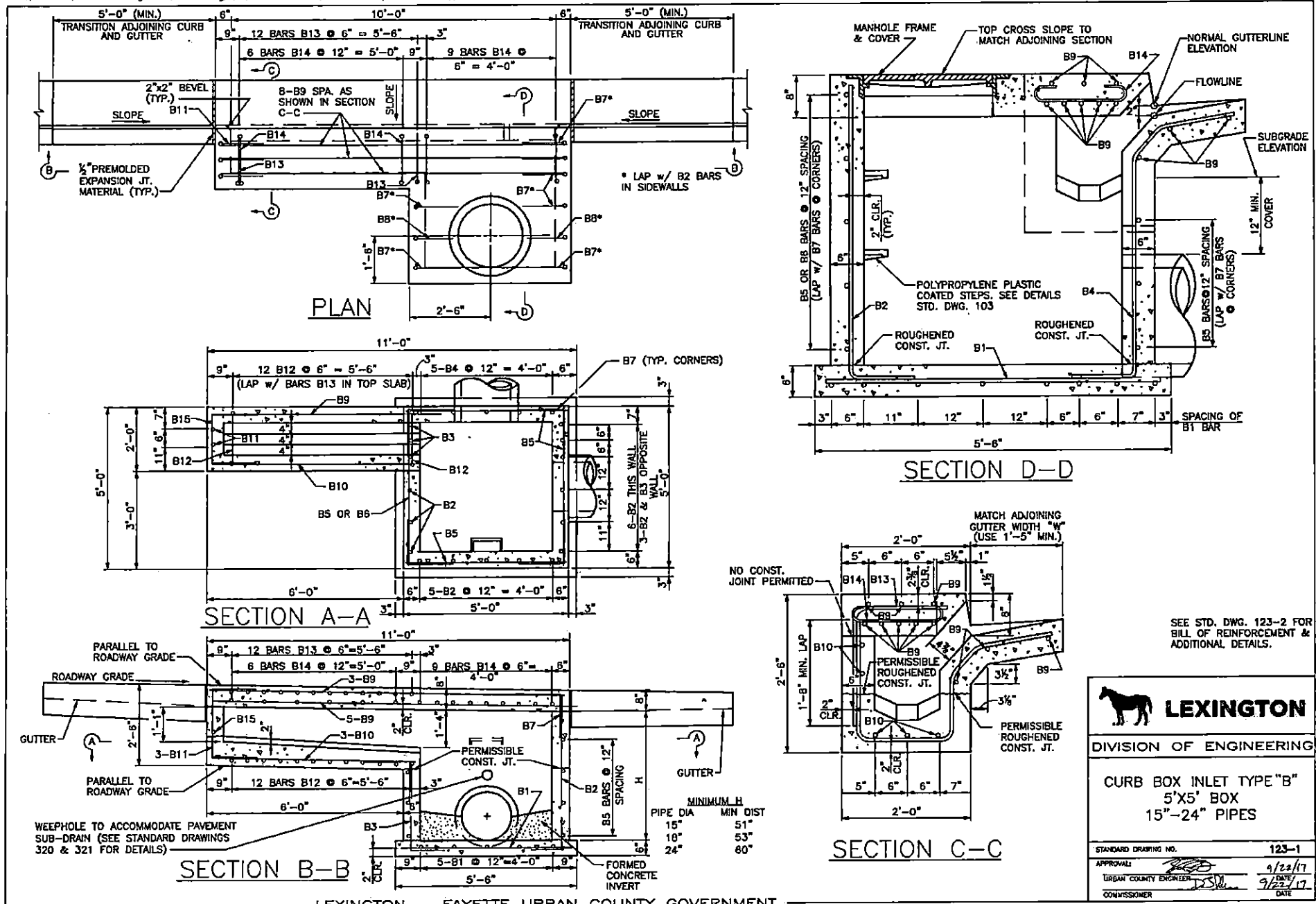


DIVISION OF ENGINEERING

CURB BOX INLET TYPE "A"
4'x4' BOX
15'-18" PIPES

STANDARD DRAWING NO. 122-2

APPROVAL: 9/22/17
URBAN COUNTY ENGINEER DATE
COMPISSONER 9/22/17 DATE



LEXINGTON
DIVISION OF ENGINEERING

CURB BOX INLET TYPE "B"
5'X5' BOX
15"-24" PIPES

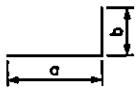
STANDARD DRAWING NO.	123-1
APPROVAL:	9/20/17
URBAN COUNTY ENGINEER:	DATE
COMMISSIONER:	9/22/17
	DATE

BILL OF REINFORCEMENT

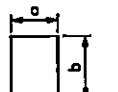
MARK	TYPE	SIZE	NO.	LENGTH		LOCATION	a		b		c		d	
				FT.	IN.		FT.	IN.	FT.	IN.	FT.	IN.		
B1	STR	#5	13	5	2	FOOTING								
B2	1	#5	14	H+(1'-10")		CHAMBER WALLS	1	0	H+10"					
B3	1	#5	3	H-4"		CHAMBER WALLS	1	0	H-(1'-4")					
B4	3	#5	5	H+(2'-4")		CHAMBER FRONT WALL								
B5	STR	#5	15*	4	8	CHAMBER WALLS								
B6	STR	#5	2	3	2	CHAMBER ABOVE THROAT								
B7	1	#5	25*	2	8	CORNERS	1	4	1	4				
B8	1	#5	2	2	6	CHAMBER WALLS & TOP	1	4	1	2				
B9	STR	#5	11	10	8	TOP SLAB & APRON								
B10	STR	#5	5	6	2	THROAT								
B11	2	#5	3	4	8	THROAT	2	15/8	1	4				
B12	4	#5	12	6	1	THROAT & APRON								
B13	1	#5	12	3	5	THROAT	1	11	1	6				
B14	5	#5	15	2	4	TOP SLAB	1	5	0	7	0	3	1	2
B15	2	#5	1	4	1	END THROAT	1	6	1	4				

* NO. OF BARS REQUIRED FOR H=4'-0"
ADD OR DEDUCT 4-B5 & 4-B7 FOR EACH 1'-0" INCREASE OR DECREASE IN H.

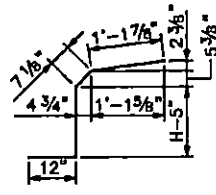
BAR TYPES



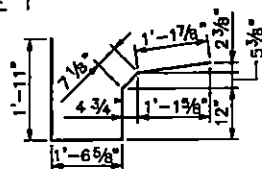
TYPE 1



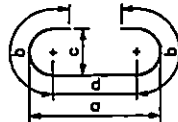
TYPE 2



TYPE 3



TYPE 4

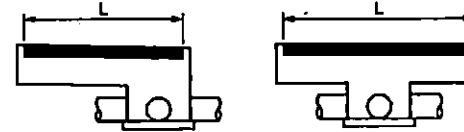


TYPE 5

NOTES:

1. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI. STEEL REINFORCEMENT SHALL BE ASTM A-615, GRADE 60. ALL EXPOSED EDGES SHALL BE BEVELED 3/4" UNLESS OTHERWISE SHOWN.
2. THIS DRAWING DEPICTS A CURB BOX INLET IN A GRADE SITUATION. FOR CURB BOX INLET IN SAG SITUATION, DETAILS SHALL BE MODIFIED AS INDICATED IN DETAIL 'A'.
3. THE STANDARD OPENING LENGTH IS 10'-0" AS DETAILED HERE. THIS LENGTH MAY BE INCREASED OR DECREASED BASED ON HYDRAULIC ANALYSIS AND APPROVAL BY THE LEXINGTON-FAYETTE COUNTY URBAN GOVERNMENT ENGINEER. MODIFICATION TO THE OPENING LENGTH WILL REQUIRE MODIFICATION OF LENGTH OF BARS B9 & B10 AND INCREASE OR DECREASE IN NUMBER OF BARS B12, B13 & B14 MAINTAINING THE SAME MAXIMUM SPACING SHOWN ON THIS DRAWING.
4. MAXIMUM "H" FOR APPLICATION OF THIS DRAWING SHALL BE 10 FEET.
5. FIELD BEND OR CUT BARS B2, B4, AND B5 AS NECESSARY WHERE PIPES PENETRATE CHAMBER WALLS.
6. FOR CURB BOX INLET IN CURVE WITH CURB RADIUS OF LESS THAN 25', LONGITUDINAL BARS B9, B10 SHALL BE SHOP FABRICATED RADIALLY.
7. 30" PIPE MAY BE APPROVED IF BOTH PIPES ARE INSTALLED ON THE SAME LINE.

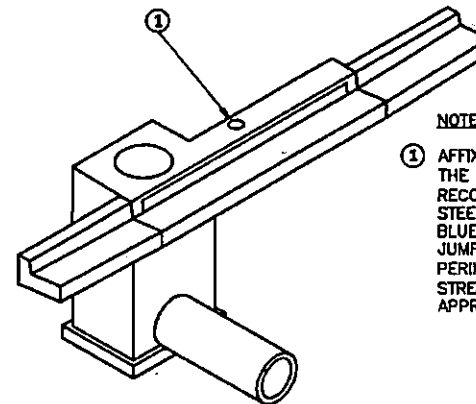
LEXINGTON — FAYETTE COUNTY GOVERNMENT



GRADE

SAG

DETAIL 'A'
APPLICABLE SITUATIONS



ISOMETRIC VIEW

NOTES:

- ① AFFIX CIRCULAR MARKER TO THE TOP OF THE INLET BOX, PER MANUFACTURER'S RECOMMENDATIONS: 4" DIAMETER STAINLESS STEEL STAMPED DISK WITH BAKED ENAMEL BLUE BACKGROUND, LOGO OF FISH JUMPING OVER WAVES WITH TEXT ON PERIMETER "STORM DRAIN • DRAINS TO STREAM", ALMETEK INDUSTRIES OR APPROVED EQUAL.

WORK THIS DWG. WITH STD. DWG. 123-1



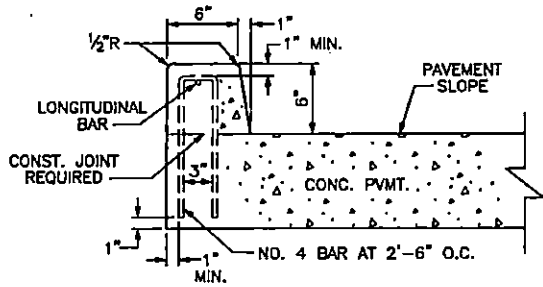
LEXINGTON

DIVISION OF ENGINEERING

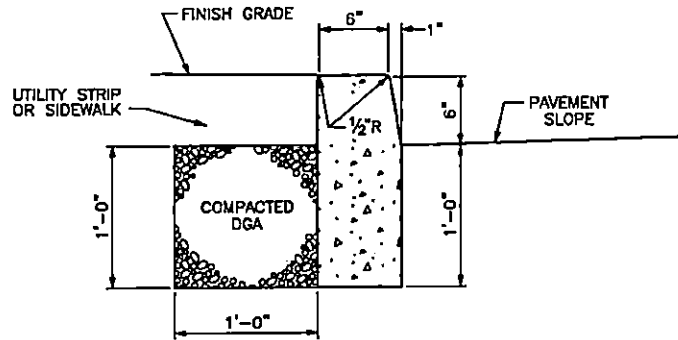
CURB BOX INLET TYPE "B"
5'X5' BOX
15"-24" PIPES

STANDARD DRAWING NO. 123-2

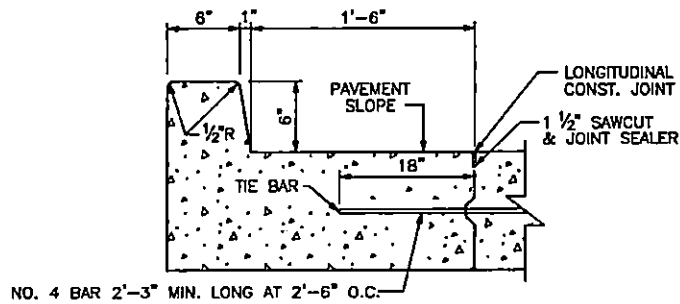
APPROVAL: 9/22/17
URBAN COUNTY ENGINEER DATE
COMMISSIONER 9/22/17 DATE



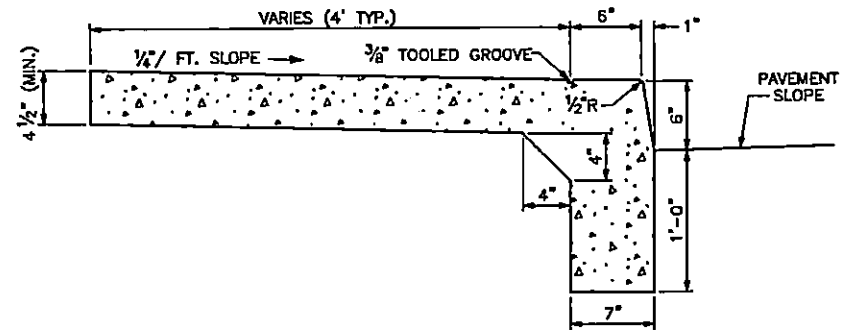
INTEGRAL CURB, TYPE 1



HEADER CURB



INTEGRAL CURB, TYPE 2




MONOLITHIC CURB AND SIDEWALK

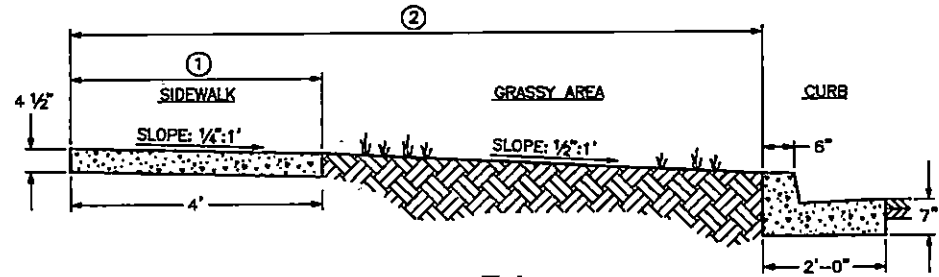
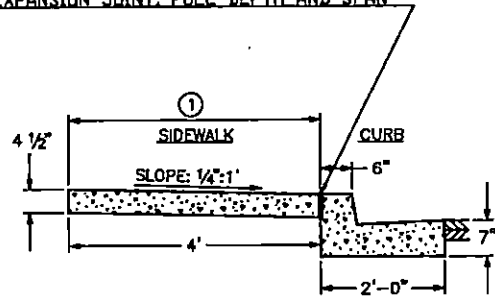
NOTES:

1. CONCRETE SHALL BE KDOT CLASS "A".
2. SAWED CONTRACTION JOINTS SHALL BE CONSTRUCTED EVERY 20 FEET, 3" MINIMUM DEPTH.
3. THE CONTRACTOR HAS THE OPTION OF CONSTRUCTING THE STANDARD INTEGRAL CURB AS DETAILED IN EITHER TYPE 1 OR 2. IF TYPE 2 IS CHOSEN A LONGITUDINAL CONSTRUCTION JOINT SHALL BE REQUIRED AND THE REMAINING PAVEMENT AND CURB SHALL BE CONSTRUCTED MONOLITHIC WITHOUT A HORIZONTAL CONSTRUCTION JOINT AND ACCOMPANYING REINFORCING STEEL (TYPE 1).

4. FULL DEPTH EXPANSION JOINTS SHALL BE CONSTRUCTED AT ALL BREAKS IN ALIGNMENT, AT ALL DRAINAGE INLETS AND AT THE BEGINNING AND ENDING POINTS OF CURVES.
5. ALL CONCRETE, EXCEPT BONDING SURFACES, SHALL BE CURED WITH WHITE PIGMENTED MEMBRANE FORMING COMPOUND (AASHTO M 148, TYPE 2)?

 LEXINGTON	
DIVISION OF ENGINEERING	
INTEGRAL CURB, HEADER CURB, MONOLITHIC CURB & SIDEWALK	
STANDARD DRAWING NO.	302
APPROVAL	9/28/17
URBAN COUNTY ENGINEER	DATE
COMMISSIONER	9/27/17 DATE

EXPANSION JOINT, FULL DEPTH AND SPAN



SIDEWALK/CURB AND GUTTER

NOTES:

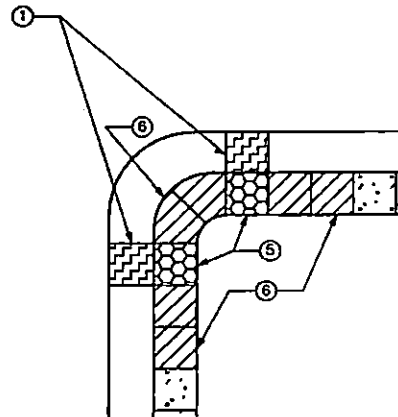
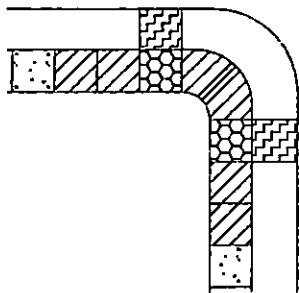
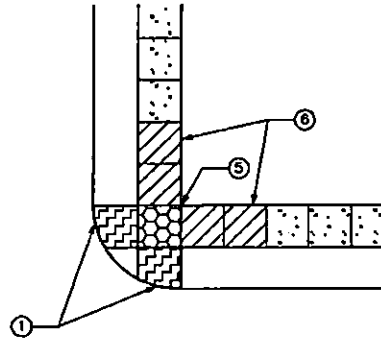
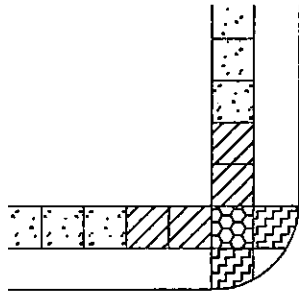
1. CONCRETE SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED ON A THOROUGHLY COMPACTED SUB-GRADE AND SHALL BE FOUR AND ONE HALF (4 1/2) INCHES IN THICKNESS AND A MINIMUM WIDTH OF FOUR (4) FEET. CONCRETE SHALL MEET THE REQUIREMENTS FOR CLASS "A" AND SHALL BE COATED WITH WHITE PIGMENTED CURING COMPOUND TYPE 2, ALL AS SPECIFIED IN KYTC SPECIFICATION, SECTION 823.02.
2. FULL DEPTH EXPANSION JOINTS SHALL BE PLACED AT CONTACT WITH NEW OR EXISTING CONCRETE, EXISTING CONCRETE, AT ABUTTING RIGID STRUCTURES OR FEATURES SUCH AS BUILDINGS, DRIVEWAYS, UTILITY POLES FIRE HYDRANTS, ECT. AND NOT TO EXCEED 200' MAXIMUM SPACING FOR SLIP FORM APPLICATION AND 32' FOR HAND PLACED. EXPANSION MATERIAL SHALL BE 1/2" ASPHALTIC MATERIAL OR APPROVED EQUAL MEETING KYTC 807.04.03.
3. CONTROL JOINTS SHALL BE PLACED AT INTERVALS EQUIVALENT TO THE SIDEWALK WIDTH, WITH A DEPTH OF 1/4 THE SIDEWALK THICKNESS.
4. THE SIDEWALKS SHALL BE PLACED ADJACENT TO THE STREET RIGHT-OF-WAY LINE. SLOPE TOWARD CURB SHALL BE ONE QUARTER (1/4) OF AN INCH TO THE FOOT. CONSTRUCTION IN EXISTING NEIGHBORHOODS SHALL REQUIRE THE CONTRACTOR TO MATCH EXISTING GRADE AND SIDEWALK WIDTH UNLESS SPECIFIED OTHERWISE BY THE DIVISION OF ENGINEERING.
5. SIDEWALK REPAIR FOR ANY CUTS MADE FOR UTILITY WORK REPLACEMENT SHALL BE FULL PANEL MATCHING THE ORIGINAL DIMENSIONS.

SHEET NOTES:

- ① NORMAL SIDEWALK WIDTH SHALL BE 4' UNLESS CHANGE IS AUTHORIZED BY URBAN COUNTY ENGINEER'S OFFICE.
- ② DISTANCE WILL VARY WITH ROAD CROSS-SECTION.

SIDEWALK/CURB AND GUTTER WITH GRASS UTILITY STRIP

LEXINGTON
DIVISION OF ENGINEERING
SIDEWALK CONSTRUCTION SPECIFICATIONS
STANDARD DRAWING NO. 303
APPROVAL: 9/22/17
URBAN COUNTY ENGINEER DATE
COMMISSIONER DATE



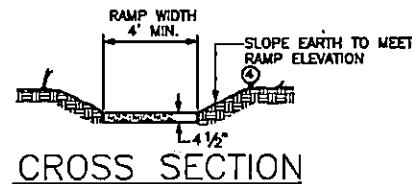
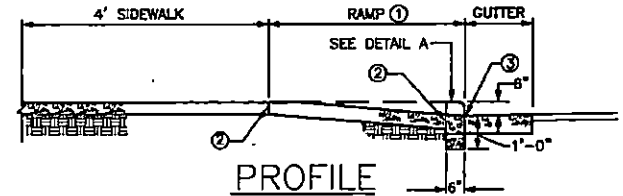
PLAN VIEW

NOTES:

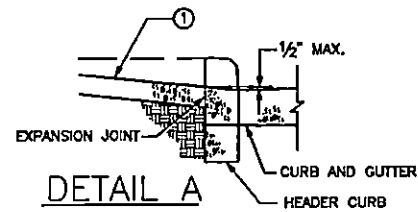
1. INLET LOCATIONS WILL VARY, DEPENDENT ON CROSSWALK AND RAMP LOCATION.
2. THE RAMP SHALL BE CONSTRUCTED OF CLASS "A" CONCRETE, AND SHALL UTILIZE CAST IN PLACE REPLACEABLE TACTILE WARNING TILE, SUCH AS ADA SOLUTIONS, INC., ACCESS TILE TACTILE SYSTEMS, ARMOR-TILE HERCULITE OR APPROVED EQUAL. TILE COLOR SHALL BE FEDERAL YELLOW.
3. THE NORMAL GUTTER LINE SHOULD BE MAINTAINED THROUGH THE RAMP.
4. RAMPS SHOULD BE LOCATED WITHIN MARKED LIMITS OF CROSSWALKS.
5. WHERE NO CURB EXISTS, STREET EDGE SHALL BE SAW CUT, OR AS DIRECTED BY L.F.U.C.G. ENGINEER.
6. MAXIMUM CROSS SLOPE OF SIDEWALK 1/4": 1'.
7. SIDEWALK REPAIR FOR ANY CUTS MADE FOR UTILITY WORK REPLACEMENT SHALL BE FULL PANEL MATCHING THE ORIGINAL DIMENSIONS.

SHEET NOTES:

- ① MAXIMUM RAMP SLOPE 1":1'.
- ② 1/2" EXPANSION JOINT AT BACK OF CURBLINE AND SIDEWALK LINE, FULL DEPTH.
- ③ NO BUMP PERMITTED.
- ④ SLOPE VARIES UNIFORMLY TO A MAXIMUM OF 1":1' AT GUTTER LINE.
- ⑤ MAXIMUM CROSS SLOPE OF LANDING 1/4": 1' IN ALL DIRECTIONS.
- ⑥ MAXIMUM LONGITUDINAL SLOPE 1/2": 1', OR ALONG THE CENTERLINE GRADE OF THE ADJACENT ROADWAY.




CROSS SECTION



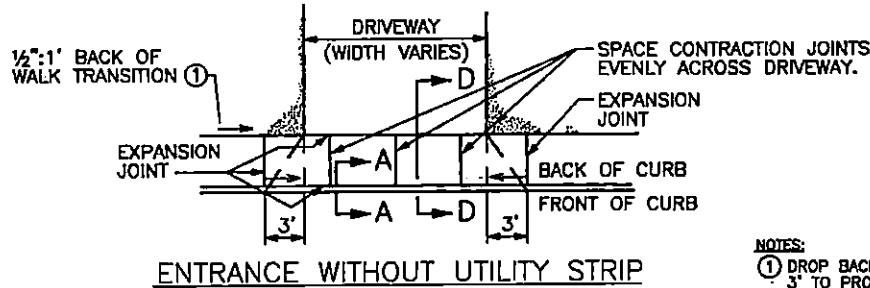
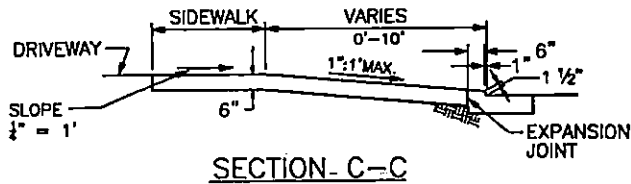
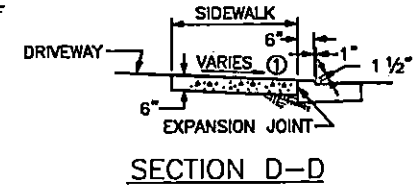
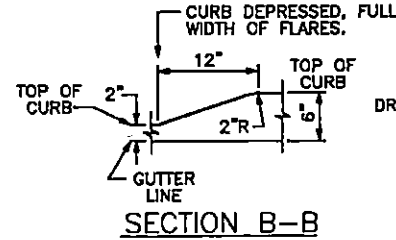
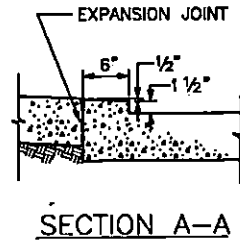
DETAIL A

NO.	DATE	REVISION DESCRIPTION	BY
01	08/08/18	UPDATE PLAN VIEW NOTE	TDL

 LEXINGTON	
DIVISION OF ENGINEERING	
SIDEWALK RAMP	
STANDARD DRAWING NO.	304
APPROVAL:	9/22/17
URBAN COUNTY ENGINEER	DATE
COMMISSIONER	9/22/17
	DATE

MAXIMUM ALLOWABLE APRON AND DRIVEWAY WIDTHS

CLASSIFICATION	DRIVEWAY	APRON
SINGLE RESIDENTIAL	12'	18'
DOUBLE OR JOINT RESIDENTIAL	20'	28'

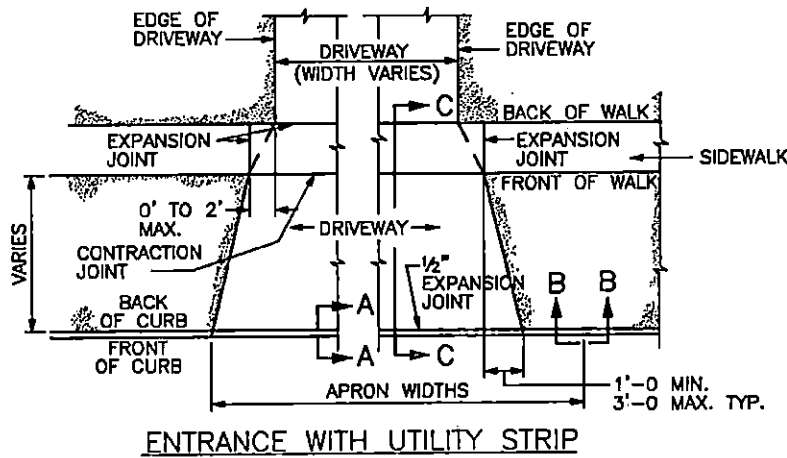


NOTES:

- ① DROP BACK OF SIDEWALK GRADE 1 1/2" OVER 3' TO PROVIDE A MAXIMUM SLOPE OF 1":1'.
- PROVIDE A SAWED JOINT ALONG CENTER LINE OF APRON.
- MAXIMUM DROP AT BACK OF SIDEWALK SHALL NOT EXCEED 1 1/2".
- MAXIMUM CROSS SLOPE ON SIDEWALK SHALL NOT EXCEED 1/4" = 1'.
- MAXIMUM SLOPE ON APRON SHALL NOT EXCEED 1":1' (8.33%).
- ENTIRE APRON FROM BACK OF CURB TO BACK OF SIDEWALK SHALL BE CONSTRUCTED WITH A SINGLE POUR.
- ALL EXPANSION JOINTS SHALL BE FULL DEPTH.

STREET WITH PARKING LANE


STREET WITHOUT PARKING LANE



NOTE:
FOR USE WITH 6" HEADER CURB OR 6" CURB AND GUTTER

UTILITY STRIP WIDTH	DROP BACK OF 4' SIDEWALK	SIDEWALK SLOPE	SLOPE ON APRON
0"	1 1/2"	7.29%	N/A
2"	1 1/2"	5.21%	8.33%
4"	1 1/2"	3.12%	8.33%
5"	1 1/2"	2.08%	8.33%
6"	1"	2.08%	8.33%
8"	0"	2.08%	8.33%
10"	0"	2.08%	7.50%

UTILITY STRIP WIDTH	DROP BACK OF 4' SIDEWALK	SIDEWALK SLOPE	SLOPE ON APRON
0"	1 1/2"	7.29%	N/A
2"	1 1/2"	4.17%	8.33%
3"	1 1/2"	2.60%	8.33%
4"	1"	2.08%	8.33%
6"	0"	2.08%	7.64%
8"	0"	2.08%	6.25%
10"	0"	2.08%	5.42%





LEXINGTON

DIVISION OF ENGINEERING

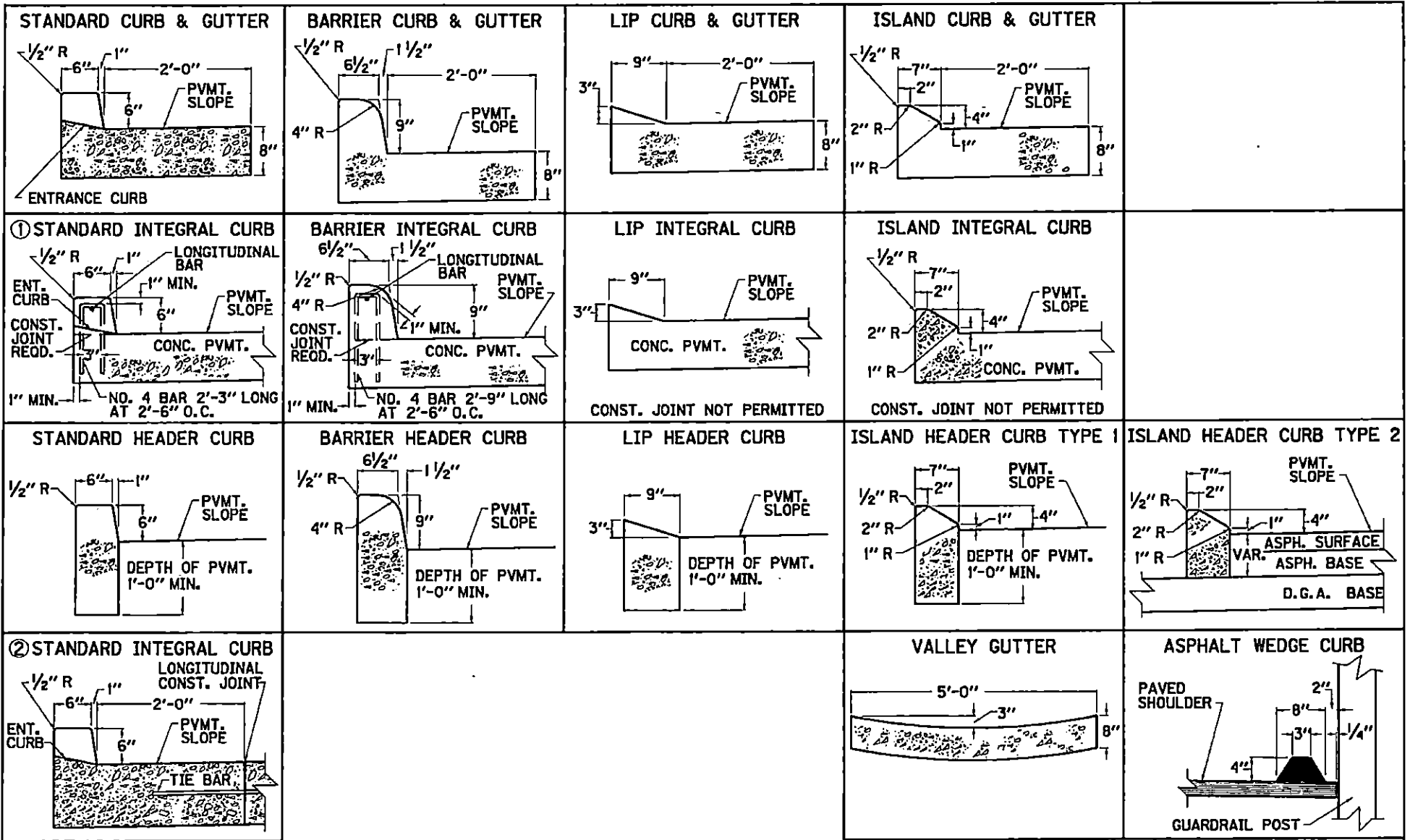
RESIDENTIAL ENTRANCE DETAILS

STANDARD DRAWING NO. 307-1

APPROVAL:  DATE 9/23/17

URBAN COUNTY ENGINEER:  DATE 9/23/17

COMMISSIONER: _____ DATE _____



~ NOTES ~

ALL INTEGRAL CURBS SHOWING REINFORCING STEEL SHALL BE CAST SEPARATELY FROM THE PAVEMENT AND THE REINFORCEMENT SHALL CONSIST SOLELY OF NO. 4 BARS AS DETAILED ON THIS DRAWING. ON CONSTRUCTION CARE SHOULD BE TAKEN SO THAT NO REINFORCEMENT BARS ARE CLOSER THAN 3" TO THE CENTER OF THE SAWED TRANSVERSE JOINT.

①② THE CONTRACTOR HAS THE OPTION OF CONSTRUCTING THE STANDARD INTEGRAL CURB AS DETAILED IN EITHER ① OR ②. IF ② IS CHOSEN A LONGITUDINAL CONSTRUCTION JOINT SHALL BE REQUIRED AND THE REMAINING PAVEMENT AND CURB SHALL BE CONSTRUCTED MONOLITHIC WITHOUT A HORIZONTAL CONSTRUCTION JOINT AND ACCOMPANYING REINFORCING STEEL.

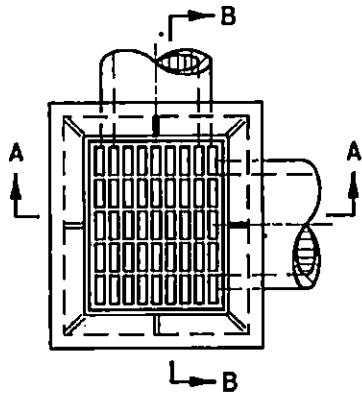
**KENTUCKY
DEPARTMENT OF HIGHWAYS**

**CURB AND GUTTER,
CURBS, AND
VALLEY GUTTER**

STANDARD DRAWING NO. RPM-100-09

SUBMITTED: *John H. Hays* 12-2-02
DIRECTOR DIVISION OF DESIGN DATE

APPROVED: *J. H. Hays* 12-2-02
STATE HIGHWAY ENGINEER DATE



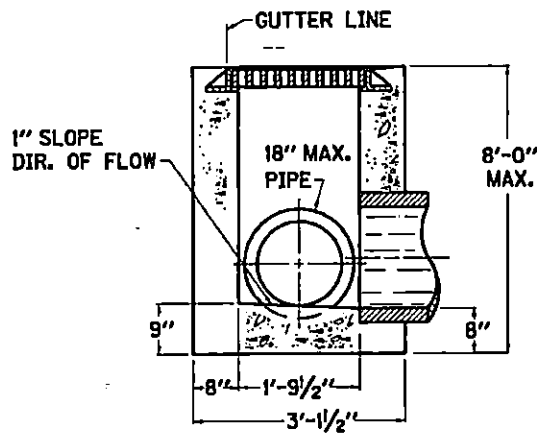
PLAN VIEW

APPROX. CONCRETE QUANTITIES

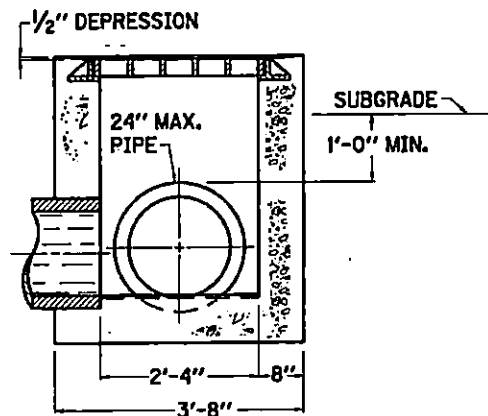
PIPE SIZE	MIN. HEIGHT	CU. YDS. CONC.
15"	2'-11"	0.89
18"	3'-3"	0.97
24"	4'-9"	1.38

APPROXIMATE WEIGHTS	
FRAME	195 LBS.
GRATE	265 LBS.

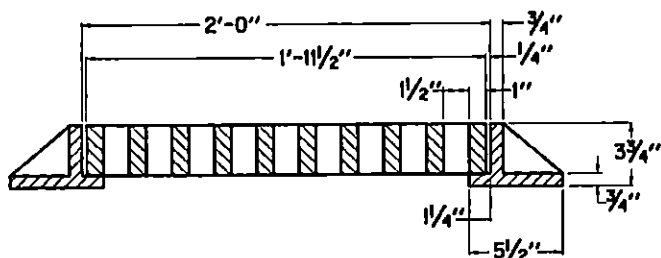
NO DEDUCTIONS HAVE BEEN MADE FOR PIPE.



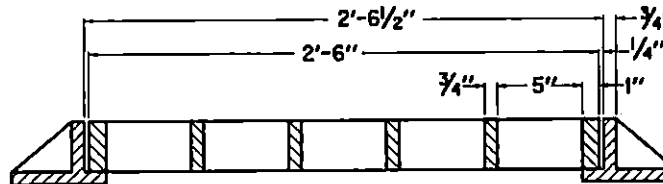
SECTION A-A



SECTION B-B



SECTIONAL VIEW OF FRAME AND GRATE

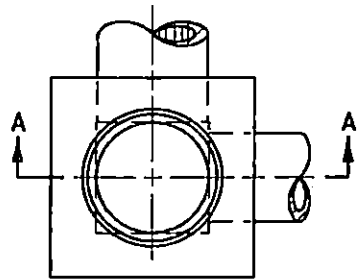


KENTUCKY
DEPARTMENT OF HIGHWAYS

DROP BOX
INLET TYPE II

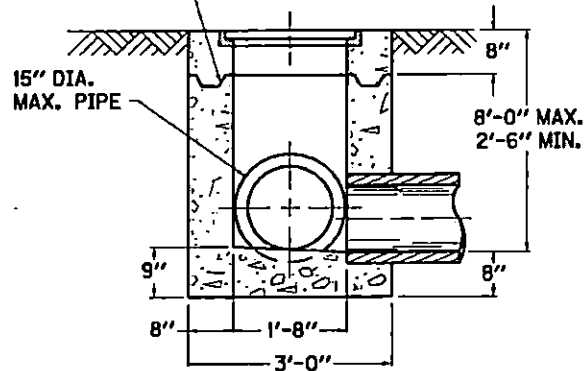
STANDARD DRAWING NO. RDB-011-07

SUBMITTED: *John B. Anderson* 12-1-99
DIRECTOR, DIVISION OF DESIGN DATE
 APPROVED: *[Signature]* 12-1-99
STATISTICAL ENGINEER DATE

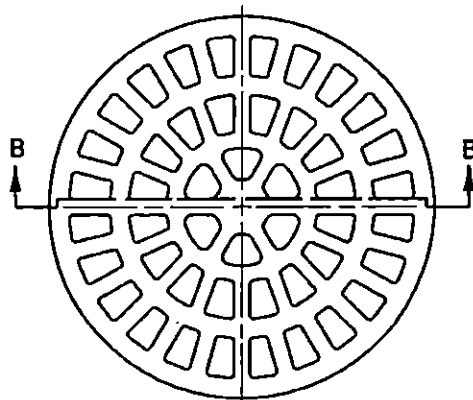


PLAN VIEW

CONSTRUCTION JOINT REQUIRED OR
8" LID MAY BE PRECAST WITHOUT
CONSTRUCTION JOINT.



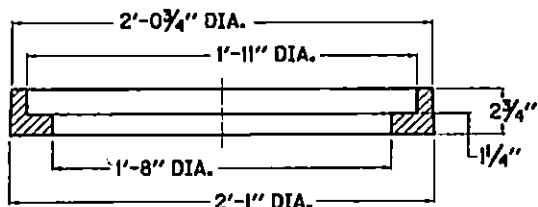
SECTION A-A



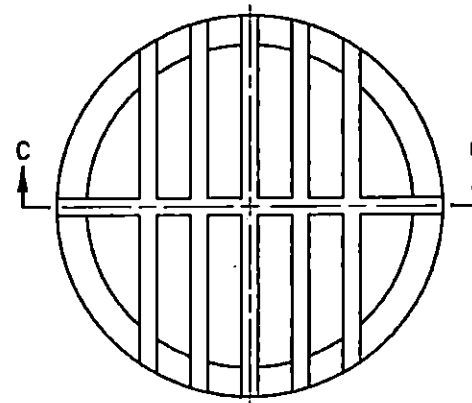
PLAN VIEW



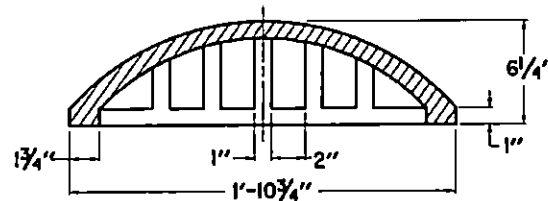
SECTION B-B TYPE 14
(RADIAL)



SECTIONAL DETAIL OF FRAME



PLAN VIEW



SECTION C-C TYPE 15
(BEEHIVE)

NOTES

1. TYPE 14 RADIAL GRATE HAS APPROXIMATELY 140 SQ. INCH OF TOTAL OPENING AREA.
2. APPROX. WEIGHT OF TYPE 14 ---- 95 LBS.
APPROX. WEIGHT OF TYPE 15 ---- 120 LBS.
APPROX. WEIGHT OF FRAME ---- 95 LBS.

BID ITEM SHALL BE:
DROP BOX INLET TYPE 14
OR
DROP BOX INLET TYPE 15

LIMITATIONS:
TYPE 14 -- FLUSH GRATE AND IS TRAVERSABLE.
TYPE 15 -- NON-TRAVERSABLE WITH MAXIMUM RESISTANCE TO CLOGGING.

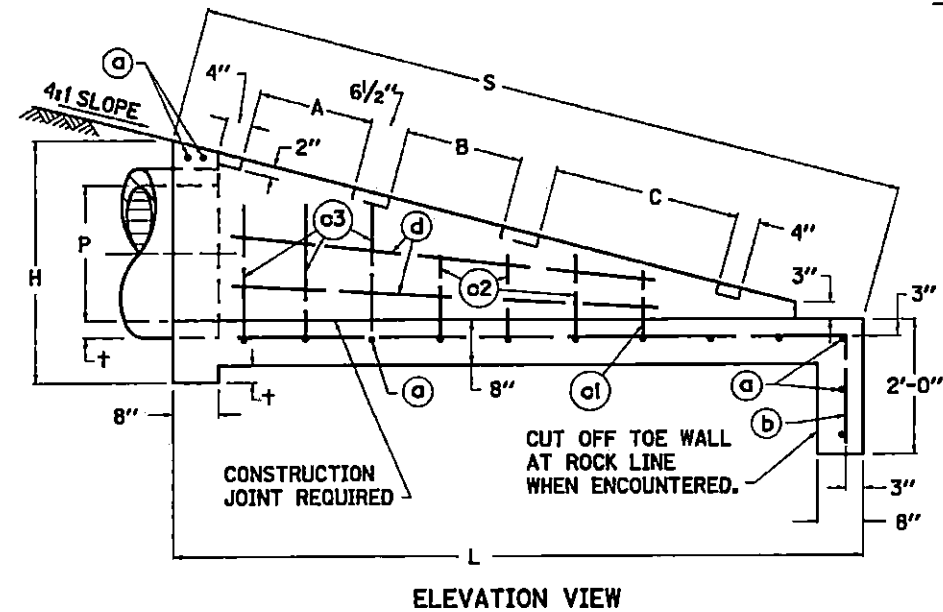
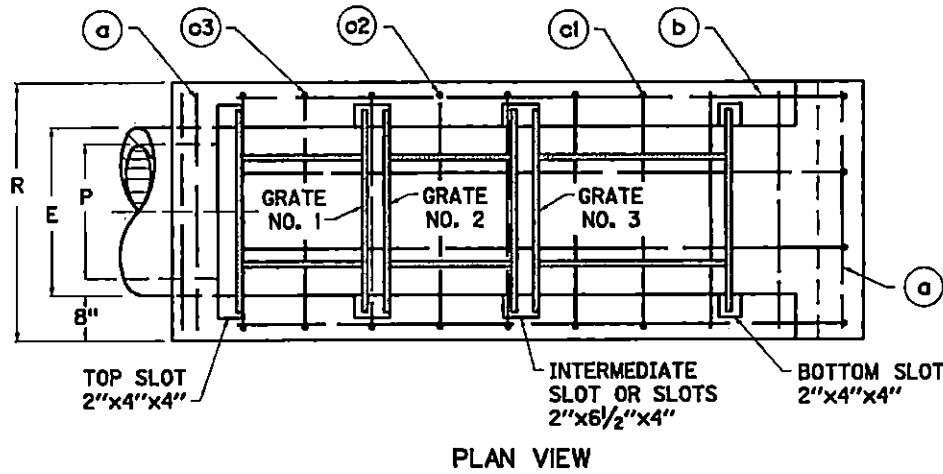
PRIMARY USE:
(YARD SUMP)

KENTUCKY
DEPARTMENT OF HIGHWAYS

DROP BOX INLET
TYPE 14 AND 15

STANDARD DRAWING NO. RDB-020-04

SUBMITTED: *John B. ...* 12-1-99 DATE
APPROVED: *[Signature]* 12-1-99 DATE



DIMENSIONS									NO. OF GRATES REQ'D.	
P	H	L	S	R	E	A	B	C	2'	3'
15"	3'-0"	8'-2"	8'-5 1/2"	3'-3"	1'-11"	1'-8 1/2"	2'-8 3/4"	----	1	1
18"	3'-0"	8'-2"	8'-5 1/2"	3'-3"	1'-11"		2'-8 3/4"	----	1	1
24"	3'-7"	10'-1 1/2"	10'-5 5/8"	3'-10"	2'-6"	1'-8 1/2"	2'-8 3/4"	----	2	1

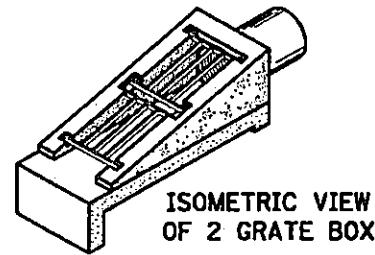
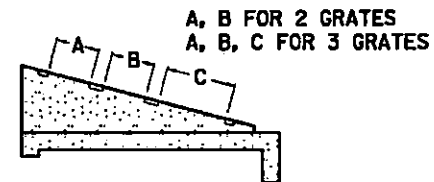
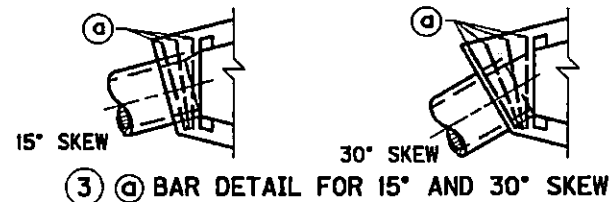
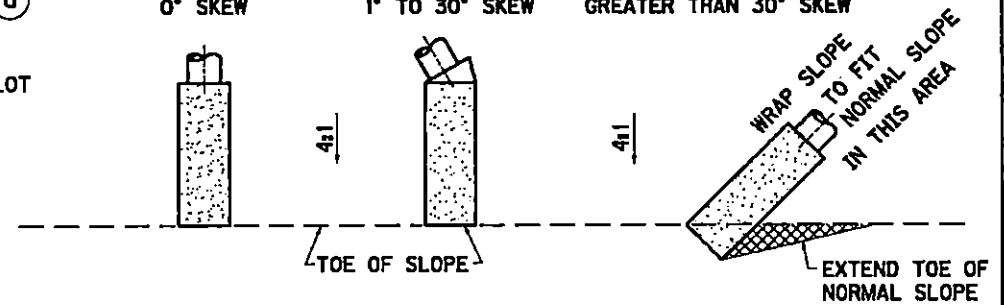
NOTES

1. THE BID ITEM SHALL BE: "(*) SLOPED BOX OUTLET TYPE 1"
* SIZE OF PIPE
2. THE MINIMUM REQUIREMENT FOR REINFORCING STEEL SHALL BE GRADE 40. FIELD BENDING WILL BE PERMITTED.
3. ONE ADDITIONAL (o) BAR WILL BE REQUIRED FOR EACH 15° SKEW.
4. + IS THE CONCRETE PIPE WALL THICKNESS OR METAL PIPE CORRUGATION DEPTH.
5. SEE CURRENT STD. DWG. RDB-101 FOR REINFORCING STEEL AND GRATE DETAILS.

CONDITION NO. 1
0° SKEW

CONDITION NO. 2
1° TO 30° SKEW

CONDITION NO. 3
GREATER THAN 30° SKEW



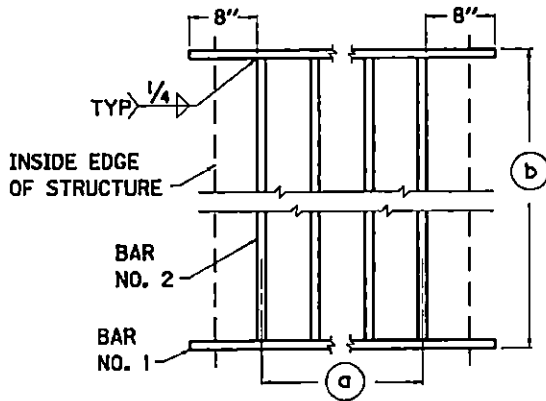
USE WITH CUR. STD. DWG.
RDB-101

KENTUCKY
DEPARTMENT OF HIGHWAYS

SLOPED BOX
OUTLET TYPE 1

STANDARD DRAWING NO. RDB-100-04

SUBMITTED: *J. B. ...* 12-1-99
APPROVED: *[Signature]* 12-1-99
DATE



TYPICAL GRATE

~ NOTES ~

- ALL COMPONENTS ARE 1" X 2" STRUCTURAL STEEL BARS.
- Ⓐ EQUALLY SPACE BARS NO. 2.
- Ⓑ LENGTH OF GRATE SHALL BE EITHER 2'-0" OR 3'-0".
- ① ADDITIONAL a BARS: 1 REQUIRED FOR 15° SKEW, 2 REQUIRED FOR 30° SKEW.

1" X 2" STRUCTURAL STEEL BARS

BOX SIZE	GRATE		BAR NO. 1		BAR NO. 2		LBS STRUCTURAL STEEL	
	NO.	LG.	LENGTH	NO. BARS	LENGTH	EACH GRATE	TOTAL	
15" - 18"	1	2'-0"	2'-5"	3	1'-10"	70	161	
	2	3'-0"			2'-10"	91		
24"	1	2'-0"	3'-0"	4	1'-10"	91	300	
	2				2'-10"	118		
	3	3'-0"						

NO. 4 REINFORCEMENT BARS

PIPE SIZE	① BAR a		BAR b		BAR c1		BAR c2		BAR c3		BAR d		TOTAL STEEL	CLASS A CONC.
	NO.	LG.	NO.	LG.	NO.	LG.	NO.	LG.	NO.	LG.	NO.	LG.	LBS.	
15"	12	2'-5"	4	8'-6"	0	0	6	1'-0"	4	1'-6"	4	4'-3"	62	1.2
18"														
24"	14	3'-0"	4	10'-6"	2	1'-0"	6	1'-3"	6	2'-0"	4	6'-3"	87	1.83

FOR BOX DETAIL SEE CUR. STD. DWG. RDB-100

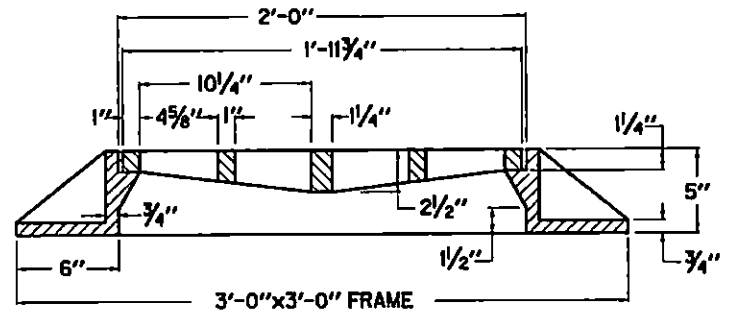
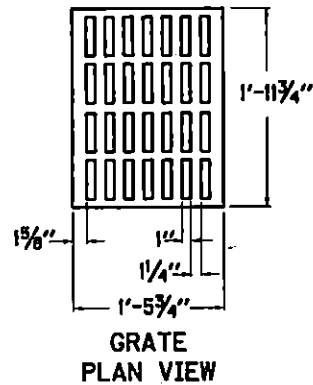
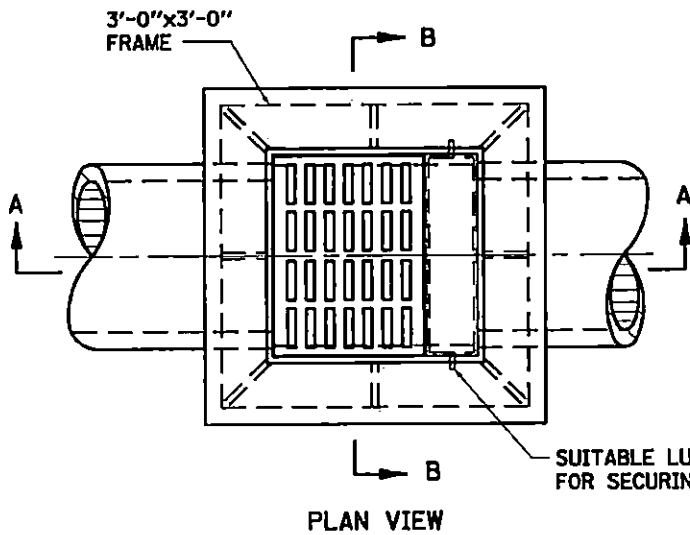
KENTUCKY
DEPARTMENT OF HIGHWAYS

**GRATES FOR SLOPED BOX
OUTLET TYPE 1**

STANDARD DRAWING NO. RDB-101-04

SUBMITTED: *John B. Anderson* 12-1-99
DIRECTOR UNIVERSITY OF DESIGN DATE

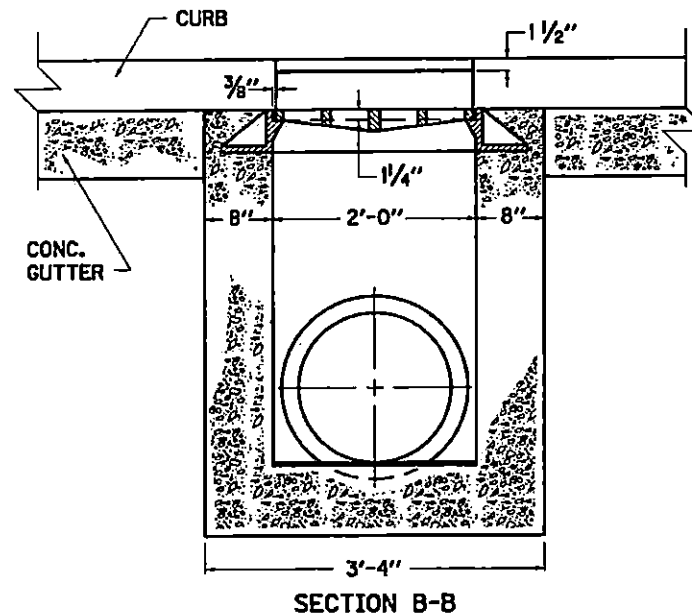
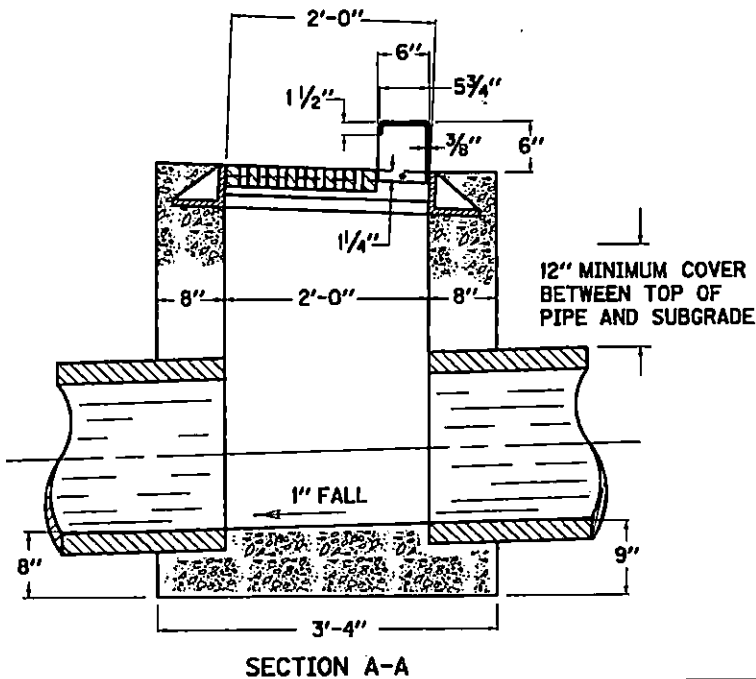
APPROVED: *J.P. [Signature]* 12-1-99
STATE PROJECT ENGINEER DATE



APPROXIMATE QUANTITIES

PIPE SIZE	MIN. HEIGHT	CU. YDS. CONC.
15"	4'-0"	1.15
18"	4'-3"	1.22
CURB FRAME WEIGHT = 61 LBS.		
FRAME WEIGHT = 277 LBS.		
GRATE WEIGHT = 127 LBS.		

NO DEDUCTIONS HAVE BEEN MADE FOR PIPE.



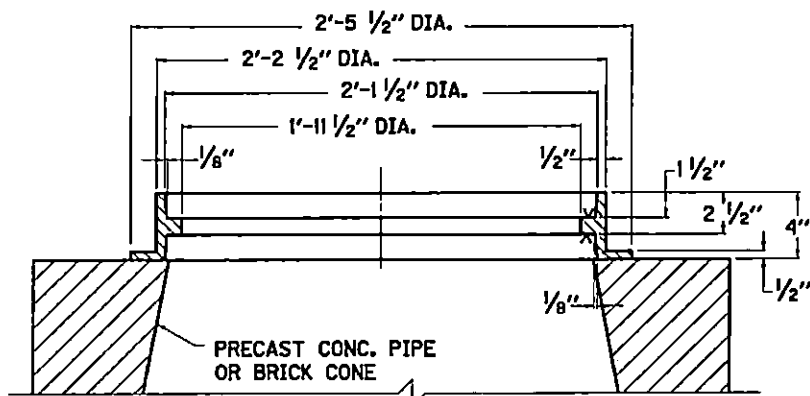
KENTUCKY
DEPARTMENT OF HIGHWAYS

STANDARD CURB
BOX INLET
TYPE F

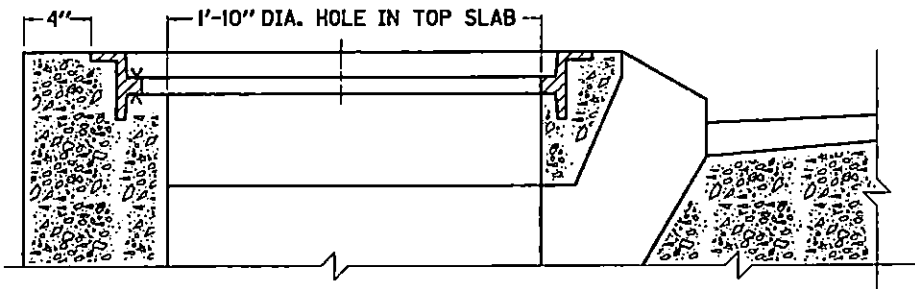
STANDARD DRAWING NO. RDB-320-05

SUBMITTED *John B. ...* 12-1-99
DIRECTOR DIVISION OF DESIGN DATE

APPROVED *[Signature]* 12-1-99
STATE HIGHWAY DESIGNER DATE



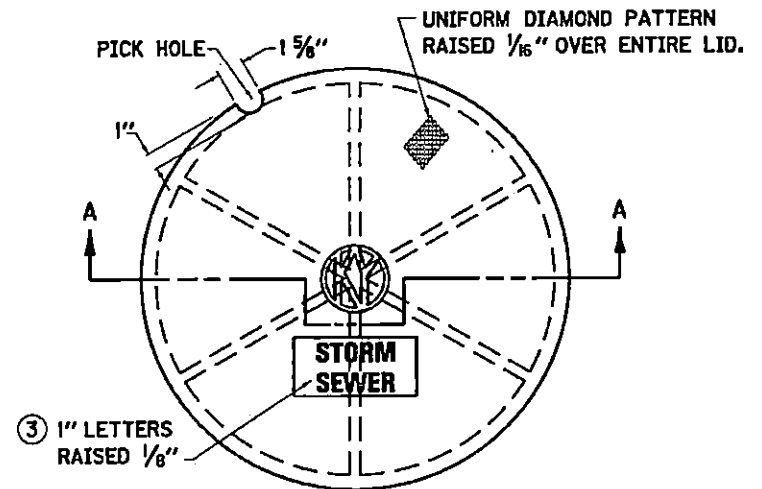
SECTION OF FRAME
WHEN USED WITH MANHOLES



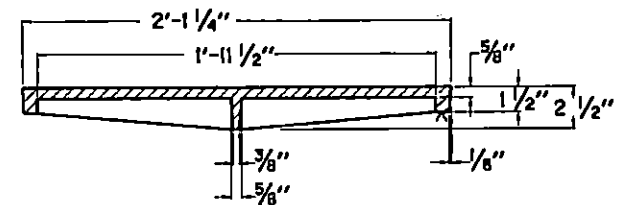
SECTION OF FRAME WHEN
USED WITH CURB BOX INLET

NOTES

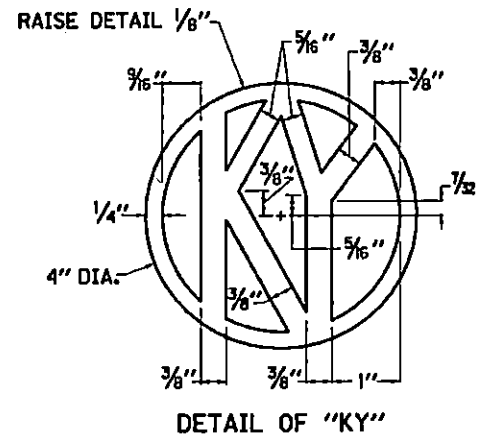
1. THE FRAME IS REVERSIBLE AND IS TO BE USED ON MANHOLES IN NON-VEHICULAR TRAFFIC AREAS, AND ON BOX INLETS AS SPECIFIED.
2. APPLICATIONS SHOWN ARE FOR ILLUSTRATION PURPOSES ONLY.
- ③ VARIATION IN LID LETTERING (SEE PIPE SUMMARY) DENOTES SEWER TYPES:
(A) STORM SEWER
(B) SANITARY SEWER
(C) SANITARY AND STORM SEWER
4. THE "KY" SYMBOL SHALL APPEAR ON ALL LIDS.



PLAN VIEW



SECTION A-A



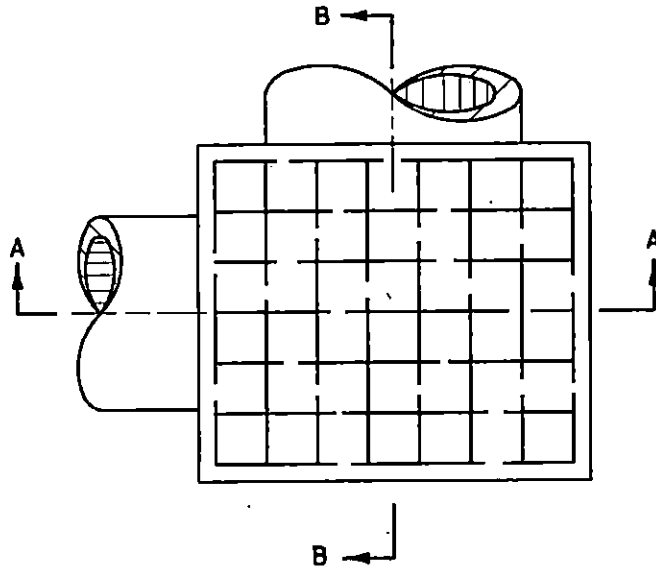
DETAIL OF "KY"

APPROX. WEIGHT	
FRAME	90 LBS.
LID	116 LBS.

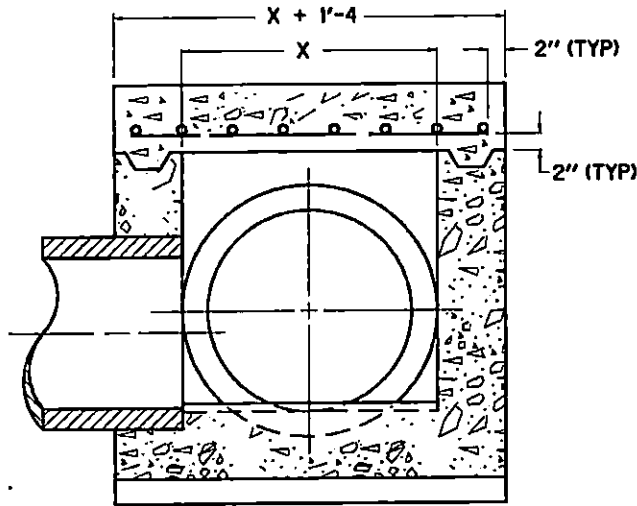
KENTUCKY DEPARTMENT OF HIGHWAYS	
FRAME AND LID TYPE I	
STANDARD DRAWING NO. RDM-100-02	
SUBMITTED BY <i>J. B. ...</i>	12-1-99
APPROVED BY <i>J. B. ...</i>	12-1-99
DIRECTOR, DIVISION OF DESIGN	DATE
STATE ENGINEER	DATE

NOTES

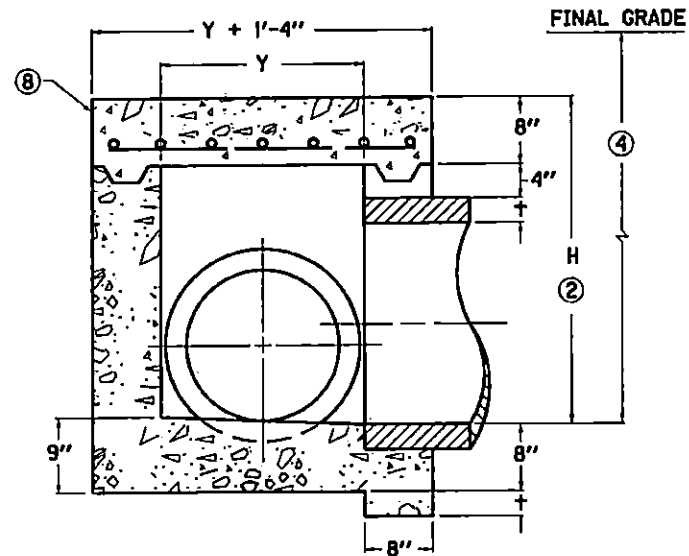
1. THE CONTRACT UNIT PRICE EACH SHALL INCLUDE PAYMENT IN FULL FOR ALL MATERIALS, EXCAVATION, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.
- ② $H = D + t + 1'-0"$ FOR THE LARGEST PIPE INVOLVED.
3. STEEL REINFORCEMENT SHALL BE NO. 4 BARS PLACED 6" O.C.
- ④ THE MAXIMUM DEPTH OF BOX FROM FINAL GRADE TO FLOW LINE OF PIPE SHALL BE 8'-0". ANY BOXES DEEPER THAN 8'-0" SHALL BE SPECIFICALLY DESIGNED.
5. SEE CURRENT STD. DWG. RDX-002 FOR DIMENSIONS AND QUANTITIES.
6. FOR THIS APPLICATION THE "X" DIMENSION IS ASSUMED TO BE EQUAL TO OR GREATER THAN THE "Y" DIMENSION.
7. THE BOX SIZE NUMBER TO BE SHOWN ON THE PLANS SHALL BE DETERMINED BY THE LARGEST PIPE IN THE "X" OR "Y" DIMENSION.
- ⑧ TO ELIMINATE FORM REMOVAL, THE TOP SHALL BE PRECAST.



PLAN VIEW



SECTION A-A



SECTION B-B

USE WITH
CURRENT STD. DWG. RDX-002
KENTUCKY
DEPARTMENT OF HIGHWAYS

JUNCTION BOX

STANDARD DRAWING NO. RDX-001-05

SUBMITTED *J. B. [Signature]* 12-1-99 DATE
APPROVED *[Signature]* 12-1-99 DATE

DIMENSIONS AND ESTIMATE OF QUANTITIES

INLET SIZE NO.	X	Y	PIPE MAX. DIA.	① H	CONCRETE		REINF. STEEL LBS.
					CUBIC YARDS	② Q	
1			12"	2'-2"	0.99		
2	2'-0"	2'-0"	15"	2'-5"	1.06		28
3			18"	2'-9"	1.13		
4			21"	3'-0"	1.35		32
5	2'-6"	2'-6"	24"	3'-3"	1.44	0.3	37
6			27"	3'-6"	1.51		32
7			30"	3'-10"	1.68		37
8	3'-0"	2'-0"	33"	4'-1"	1.86		42
9			36"	4'-4"	2.04	0.4	48
10			39"	4'-7"	2.13	0.3	41
11			42"	4'-11"	2.34	0.4	47
12	3'-6"	3'-0"	45"	5'-0"	2.54	0.4	54
13			48"	5'-5"	2.76	0.5	60
14			51"	6'-0"	2.99	0.5	66
15	4'-0"	2'-0"	54"	6'-6"	3.22	0.6	73
16			57"	7'-0"	3.41	0.6	80
17			60"	7'-6"	3.69	0.7	88
18	4'-6"	2'-6"	63"	8'-0"	3.97	0.7	96
19			66"	8'-6"	4.26	0.8	104
20			69"	9'-0"	4.54	0.8	113
21			72"	9'-6"	4.83	0.9	122
22	5'-0"	3'-0"	75"	10'-0"	5.13	0.9	131
23			78"	10'-6"	5.44	1.0	140
24			81"	11'-0"	5.75	1.0	150
25	5'-6"	3'-6"	84"	11'-6"	6.06	1.1	160
26			87"	12'-0"	6.39	1.1	170
27			90"	12'-6"	6.73	1.2	180
28	6'-0"	3'-0"	93"	13'-0"	7.07	1.2	190
29			96"	13'-6"	7.42	1.3	200
30			99"	14'-0"	7.78	1.3	210
31			102"	14'-6"	8.15	1.4	220
32	6'-6"	3'-6"	105"	15'-0"	8.53	1.4	230
33			108"	15'-6"	8.92	1.5	240
34			111"	16'-0"	9.33	1.5	250
35			114"	16'-6"	9.75	1.6	260
36	7'-0"	4'-0"	117"	17'-0"	10.18	1.6	270
37			120"	17'-6"	10.63	1.7	280
38			123"	18'-0"	11.09	1.7	290
39			126"	18'-6"	11.57	1.8	300
40	7'-6"	4'-6"	129"	19'-0"	12.07	1.8	310
41			132"	19'-6"	12.58	1.9	320
42			135"	20'-0"	13.11	1.9	330
43			138"	20'-6"	13.65	2.0	340
44	8'-0"	5'-0"	141"	21'-0"	14.21	2.0	350
45			144"	21'-6"	14.78	2.1	360
46			147"	22'-0"	15.37	2.1	370
47			150"	22'-6"	15.97	2.2	380
48	8'-6"	5'-6"	153"	23'-0"	16.59	2.2	390

INLET SIZE NO.	X	Y	PIPE MAX. DIA.	① H	CONCRETE		REINF. STEEL LBS.
					CUBIC YARDS	② Q	
49			60"	6'-6"	5.40		102
50			60"	6'-6"	5.74		111
51	6'-0"	5'-0"	60"	6'-6"	6.08	0.6	121
52			60"	6'-6"	6.42		131
53			60"	6'-6"	6.75	0.7	140
54			60"	6'-6"	7.07	0.8	150
55			60"	6'-6"	7.42	0.8	160
56			60"	6'-6"	7.78	0.9	170
57			60"	6'-6"	8.15	0.9	180
58	7'-0"	4'-0"	66"	7'-1"	8.53	1.0	190
59			66"	7'-1"	8.92	1.0	200
60			66"	7'-1"	9.33	1.1	210
61			66"	7'-1"	9.75	1.1	220
62			66"	7'-1"	10.18	1.2	230
63			66"	7'-1"	10.63	1.2	240
64			66"	7'-1"	11.09	1.3	250
65			66"	7'-1"	11.57	1.3	260
66			66"	7'-1"	12.07	1.4	270
67			66"	7'-1"	12.58	1.4	280
68	7'-6"	4'-6"	72"	7'-7"	13.11	1.5	290
69			72"	7'-7"	13.65	1.5	300
70			72"	7'-7"	14.21	1.6	310
71			72"	7'-7"	14.78	1.6	320
72			72"	7'-7"	15.37	1.7	330
73			72"	7'-7"	15.97	1.7	340
74			72"	7'-7"	16.59	1.8	350

NOTES

- ① BASED ON H AS EQUAL TO D+++'-0".
- ② Q = CUBIC YARDS OF CONCRETE PER FOOT INCREASE OR DECREASE WHEN H VARIES FROM D+++'-0".
3. NO DEDUCTIONS HAVE BEEN MADE FOR PIPE, SEE REFERENCE CHART FOR QUANTITIES TO DEDUCT.
4. THE DIMENSIONS AND QUANTITIES HAVE BEEN CALCULATED FOR ROUND CONCRETE PIPE. WHEN NON-CIRCULAR PIPE IS USED THE BOX SIZE SHALL BE DETERMINED BY CONTROLLING DIMENSIONS OF THE PIPE.

REFERENCE CHART

DIA. OF PIPE	JUNCTION BOX		CONCRETE TO DEDUCT FOR EACH PIPE CUBIC YARDS
	PIPE ON "X" SIDE OF BOX	PIPE ON "Y" SIDE OF BOX	
0			---
12"	2'-0"	2'-0"	
15"-18"			0.1
21"-24"	2'-6"	2'-6"	
27"	3'-0"	3'-0"	0.2
30"-33"	3'-6"	3'-6"	
36"	4'-0"	4'-0"	0.3
42"	4'-6"	4'-6"	0.4
48"	5'-0"	5'-0"	0.5
54"	5'-6"	5'-6"	0.6
60"	6'-0"	6'-0"	0.7
66"	7'-0"	7'-0"	0.8
72"	7'-6"	7'-6"	1.0

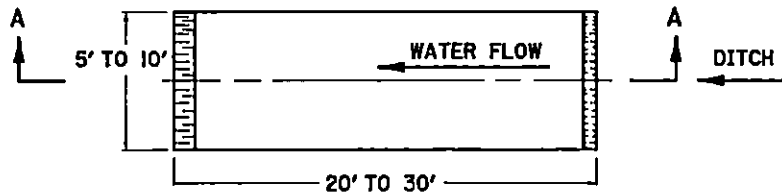
USE WITH
CURRENT STD. DWG. RDX-001
KENTUCKY
DEPARTMENT OF HIGHWAYS

**JUNCTION BOX
(DIMENSIONS & QUANTITIES)**

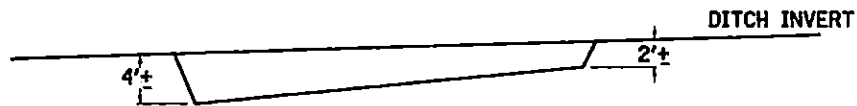
STANDARD DRAWING NO. RDX-002-03

SUBMITTED: *J. B. [Signature]* 12-1-99
APPROVED: *[Signature]* 12-1-99
DATE

ALTERNATE NO. 1



PLAN VIEW



SECTION A-A

~NOTES~

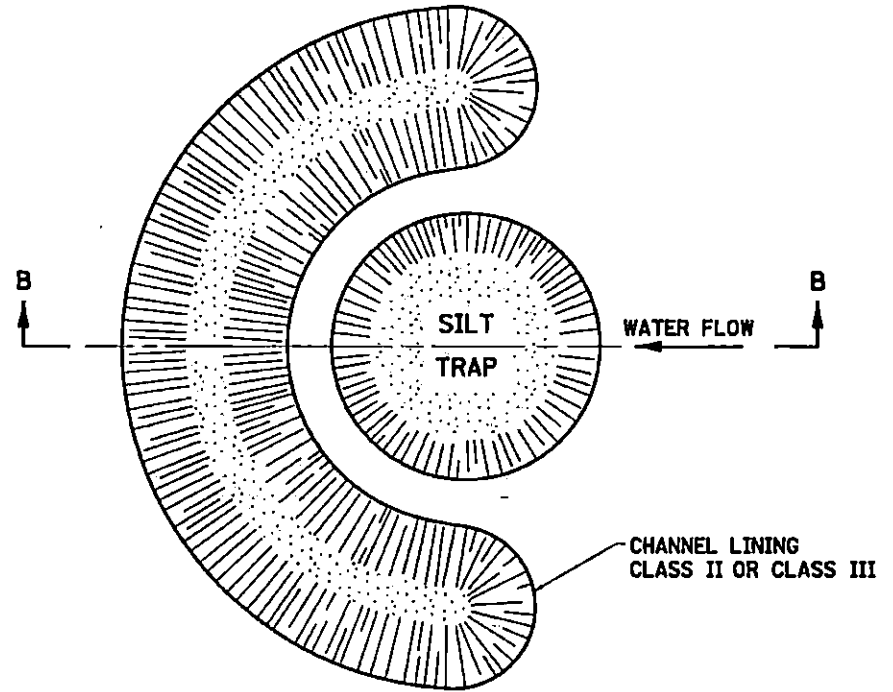
BID ITEM AND UNIT TO BID:	CODE	PAY ITEM	PAY UNIT
SILT TRAP TYPE A	2703	EACH	
CLEAN SILT TRAP TYPE A	2706	EACH	

THE SIZE, SHAPE AND LOCATION OF TRAP MAY BE ADJUSTED FROM THAT SHOWN IN THE PLANS, AS DIRECTED BY THE ENGINEER.

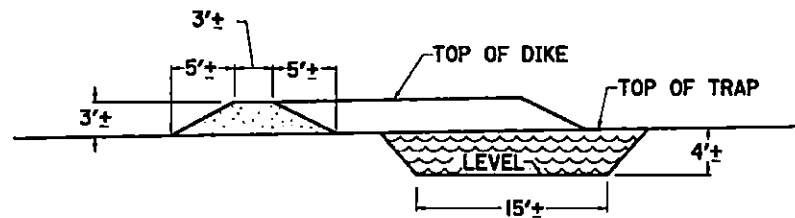
THE SILT TRAP SHALL BE CONSTRUCTED AS DIRECTED BY THE ENGINEER TO MEET VOLUME REQUIREMENTS INDICATED ON THE PLANS.

MATERIAL REMOVED IN THE PROCESS OF CONSTRUCTING SILT TRAP TYPE A SHALL BE WASTED ON SITE AT NO ADDITIONAL COST.

ALTERNATE NO. 2



PLAN VIEW



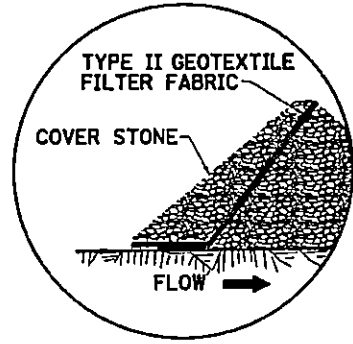
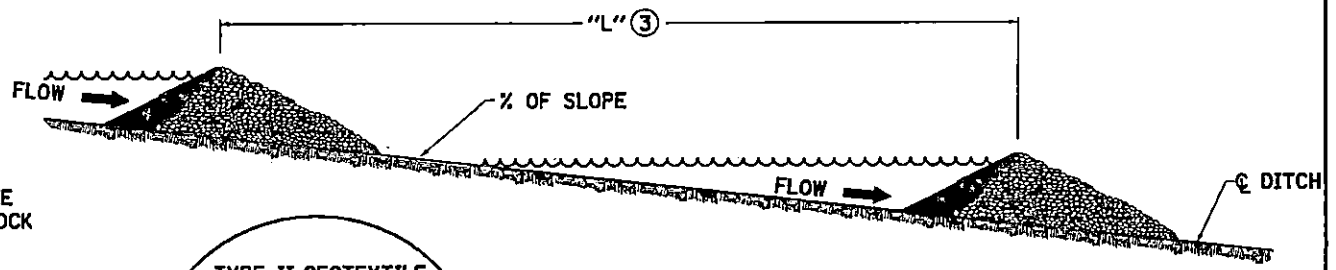
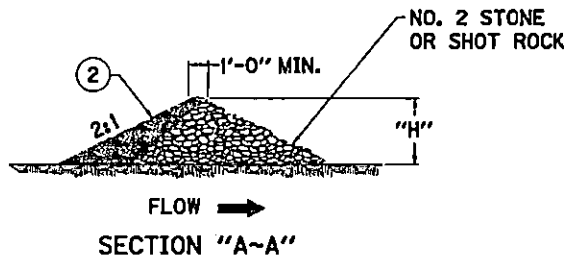
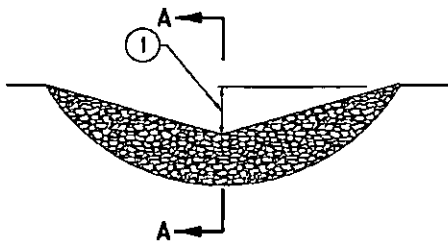
SECTION B-B

KENTUCKY
DEPARTMENT OF HIGHWAYS

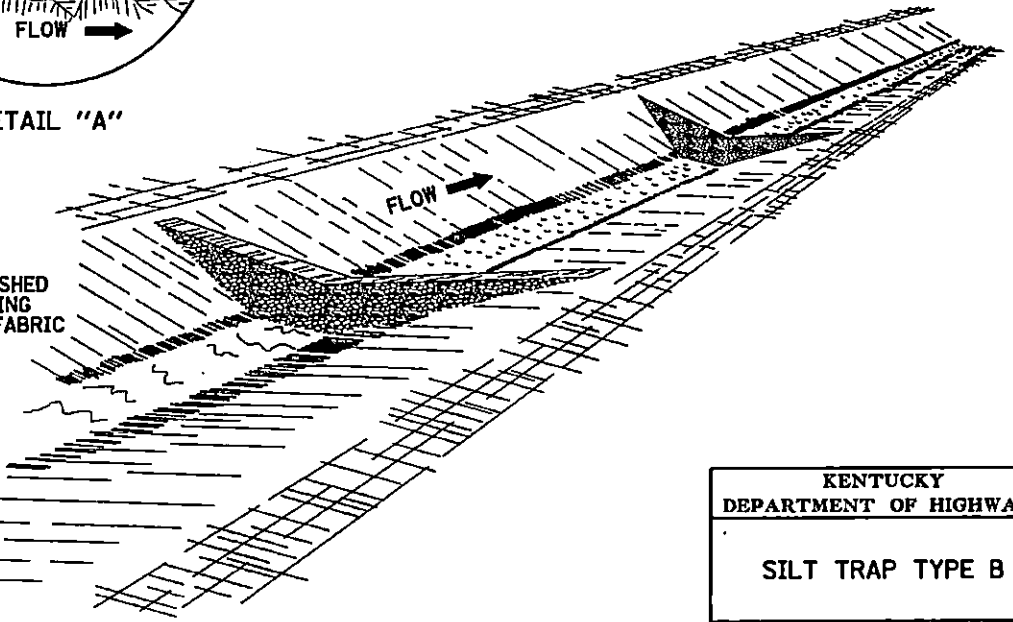
SILT TRAP
TYPE A

STANDARD DRAWING NO. RDX-220-04

SUBMITTED: *[Signature]* 11-21-07
DIRECTOR DIVISION OF DESIGN DATE
APPROVED: *[Signature]* 11-21-07
STATE HIGHWAY ENGINEER DATE



DETAIL "A"

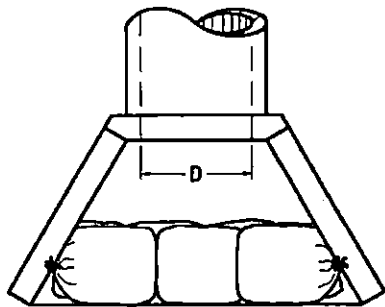


~NOTES~

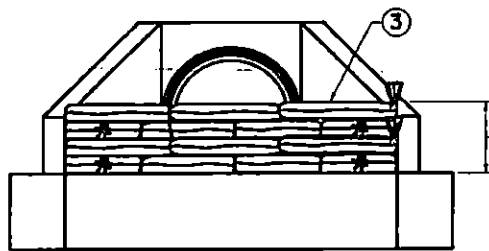
BID ITEM AND UNIT TO BID:		
CODE	PAY ITEM	PAY UNIT
2704	SILT TRAP TYPE B	EACH
2707	CLEAN SILT TRAP TYPE B	EACH

- ① MIDDLE OF SILT TRAP SHALL BE A MINIMUM OF 1'-0" LOWER THAN SIDES SO FLOW WILL NOT BYPASS TRAP OR ERODE BANKS.
- ② UPSTREAM FACE OF SILT TRAP SHALL BE A FOUR INCH MIN. LAYER OF CRUSHED AGGREGATE HAVING 100% PASSING A 3" SIEVE AND NO MORE THAN 5% PASSING A NO. 8 SIEVE (SEE SECTION "A-A"). LINE UPSTREAM FACE WITH FILTER FABRIC UP TO BOTTOM OF THE V AND COVER FABRIC WITH STONE TO HOLD IN PLACE (SEE DETAIL "A").
- ③ "L" = $\frac{"H"}{\text{SLOPE OF DITCH}}$
- ④ SPACE SILT TRAPS AT LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
5. SILT TRAP TYPE B SHALL BE USED ON ALL SLOPES GREATER THAN 2%.
6. SILT TRAP TYPE B MAY BE USED ON ALL SLOPES LESS THAN 2%.

KENTUCKY DEPARTMENT OF HIGHWAYS		
SILT TRAP TYPE B		
STANDARD DRAWING NO. RDX-225		
SUBMITTED	<i>D. K. H.</i>	11-21-07
DIRECTOR OFFICE OF DESIGN		DATE
APPROVED	<i>Robert M. Nichols</i>	11-21-07
STATE ENGINEER, KENTUCKY		DATE



PLAN VIEW



FRONT ELEVATION

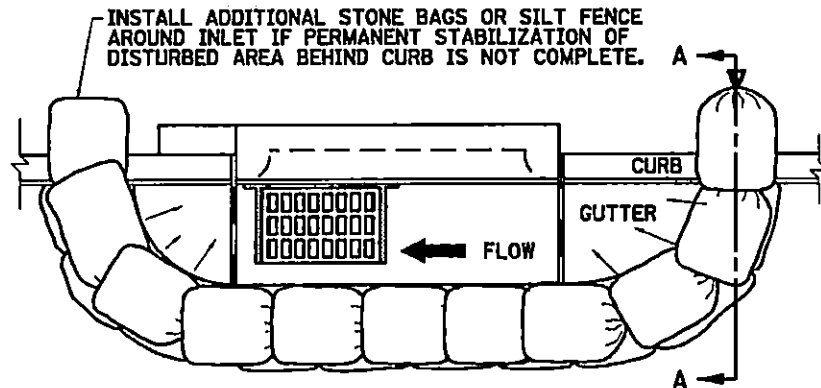
HEIGHT OF BAGS = D/2 ②

~NOTES~

SILT TRAP TYPE C SHALL INCLUDE GEOTEXTILE FABRIC BAGS, NO. 57 STONE, LABOR AND ALL INCIDENTALS NECESSARY FOR ONE COMPLETE INSTALLATION. BID ITEM AND UNIT TO BID:

CODE	PAY ITEM	PAY UNIT
2705	SILT TRAP TYPE C	EACH
2708	CLEAN SILT TRAP TYPE C	EACH

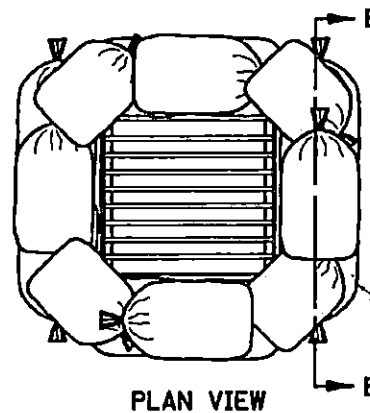
- ① INLET PROTECTION IS SUITABLE FOR USE IN BOTH PAVED AND UNPAVED AREAS.
- ② THE HEIGHT REQUIREMENT IS WAIVED IN CASES WHERE IT WILL CREATE AN UNACCEPTABLE PONDING SITUATION ON THE PAVEMENT OR ON AN ADJACENT PROPERTY.
- ③ INTERWEAVE BAG ENDS TO FILL GAPS BETWEEN BAGS.
4. CONSTRUCT 18" X 30" BAGS OF NON-WOVEN TYPE II GEOTEXTILE FABRIC CONFORMING TO SECTION B43 OF THE STANDARD SPECIFICATIONS. DOUBLE STITCH BAG SEAMS WITH 1 LB. POLYESTER THREAD. ATTACH ONE (1) TIE STRING TO EACH BAG. BAG OPENING SHALL BE ON 18" SIDE.
5. FILL BAGS WITH NO. 57 STONE BETWEEN 1/2 TO 2/3 FULL (50 LB TO 60 LB).
6. SILT TRAP TYPE C SHALL NOT BE USED IN BLUE LINE STREAMS.



PLAN VIEW

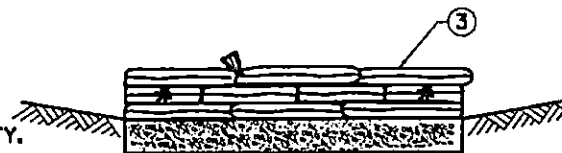
12" MIN. HEIGHT ②

SECTION A~A



PLAN VIEW

SURROUND INLET WITH TWO COURSES OF BAGS (MINIMUM).

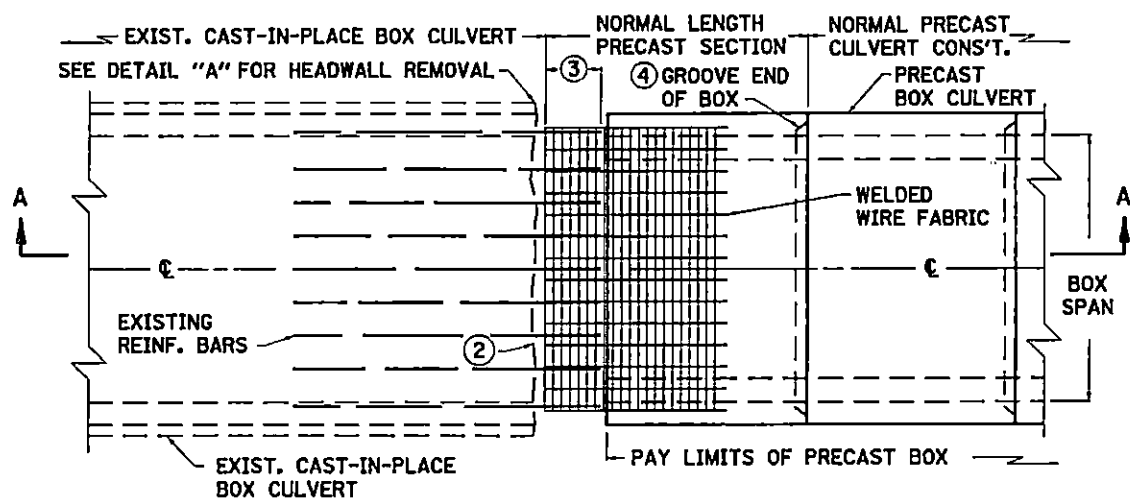


SECTION B~B

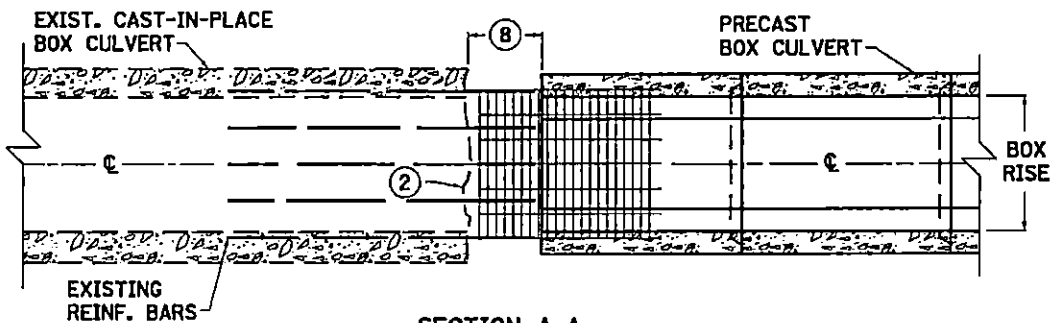
KENTUCKY
DEPARTMENT OF HIGHWAYS

SILT TRAP TYPE C

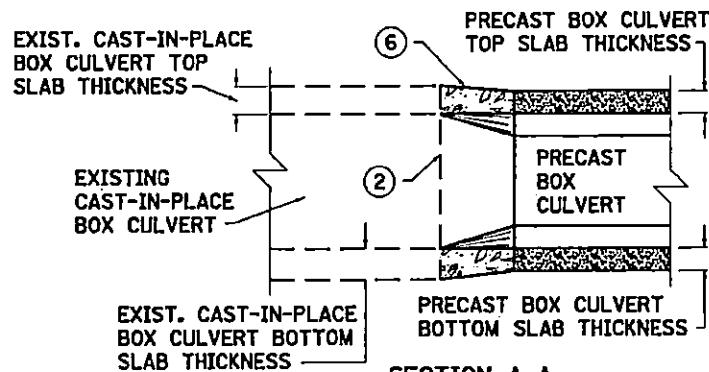
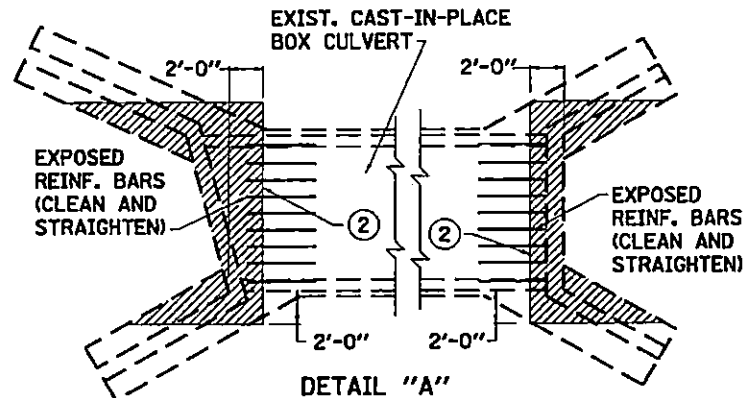
STANDARD DRAWING NO. RDX-230
 SUBMITTED: *[Signature]* 11-21-07
 DIRECTOR, DIVISION OF DESIGN DATE
 APPROVED: *[Signature]* 11-21-07
 STATE HIGHWAY ENGINEER DATE



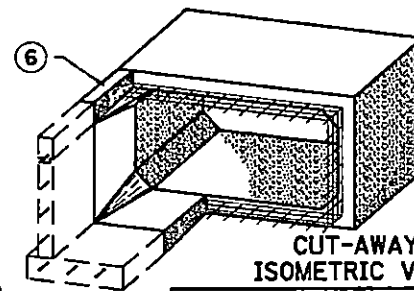
PLAN VIEW



SECTION A-A
(SHOWING STEEL LAP)



SECTION A-A
(SHOWING CAST-IN-PLACE SECTION)



NOTES

1. CONCRETE TO BE REMOVED BEFORE ATTACHING CULVERT EXTENSION.
2. BEFORE REMOVING ANY EXISTING CONCRETE, SAW AROUND THE PERIMETER OF REMOVAL AREA ON THE INTERIOR AND EXTERIOR OF THE CULVERT BARREL A DEPTH OF 1".
3. EXPOSED LONGITUDINAL STEEL IN EXISTING CULVERT LAPPED 1'-8" MIN. WITH EXPOSED MESH IN PRE-CAST BOX CULVERT. EXPOSED STEEL SHALL NOT BE KINKED OR BENT BY REMOVAL OPERATIONS. ANY STEEL THAT IS DAMAGED SHALL BE REPAIRED.
4. REINFORCING MESH IN THE PRE-CAST BOX CULVERT SHALL BE EXPOSED ON THE TONGUE END OF THE BOX. CONTRARY TO CURRENT SPECIFICATIONS THE GROOVE END OF THE BOX MAY BE LAID UPSTREAM OR DOWNSTREAM AS NECESSARY TO COMPLETE THE INSTALLATION.
5. EXISTING REMOVED CONCRETE SHALL BE PAID PER CU. YD. "REMOVING CONCRETE MASONRY".
6. CLASS D MODIFIED CONCRETE (MAX. SLUMP OF 3 1/2") IN THE SPLICE SHALL BE PAID PER CU. YD. OF "CONCRETE-CLASS D MODIFIED".
7. EXPOSED LONGITUDINAL STEEL IN EXISTING CULVERT AND EXPOSED MESH IN PRE-CAST BOX CULVERT SHALL BE INCIDENTAL TO THE UNIT PRICE BID FOR "CONCRETE-CLASS D MODIFIED".
8. THE PRE-CAST BOX CULVERT EXTENSION SHALL BE PAID PER LINEAR FOOT OF "PRECAST CONC. BOX SECT. (SIZE 1)", WHICH SHALL NOT INCLUDE THE SPLICE.

KENTUCKY
DEPARTMENT OF HIGHWAYS

PRECAST BOX
CULVERT EXTENSION

STANDARD DRAWING NO. RDX-300-03

SUBMITTED *John B. Anderson* 12-1-99
DIRECTOR DIVISION OF DESIGN DATE
APPROVED *J. M. [Signature]* 12-1-99
STATE HIGHWAY DESIGNER DATE