Shaping Our Community

ENGINEERING

R-560-2014

Contract #317-2014

Contract Documents and Specifications

Project Name: 2014 Construction Unit Price Contract

LFUCG Bid No.: 107-2014

Prepared by: Division of Engineering, Department of Public Works
Lexington-Fayette Urban County Government
101 E. Vine Street, Lexington, KY 40507

ASL Excavating Inc.
Executed Contract Document 1 of 3

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2014 Construction Unit Price Contract

PART 1

ADVERTISEMENT FOR BIDS

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ADVERTISEMENT FOR BIDS

1. INVITATION

Sealed proposals for the following work will be received by the Lexington-Fayette Urban County Government (LFUCG) until **2:00 p.m., local time, 08/25/2014**, 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.

Bidders attention is directed to Part II, *Information for Bidders*, Section 7: Addenda and Interpretations. **The deadline for questions stated therein is firm.**

2. DESCRIPTION OF WORK

Consisting of the construction and/or furnishing of items as listed in the Bid Schedule beginning on page P-7, Part III, Form of Proposal, of this document, for various small projects such as roadway construction, repair, sidewalks, storm water or sanitary sewer improvements in Lexington-Fayette County, Kentucky at work sites to be determined plus incidentals necessary to complete the work.

3. OBTAINING PLANS, SPECIFICATIONS, AND BID DOCUMENTS

Specifications 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, 4th Floor
Lexington, Kentucky 40507
(859) 258-3410

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

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 documents.

4. METHOD OF RECEIVING BIDS

Bids will be received from Prime Contracting firms on a **Line Item Unit Price Basis**. The Bidder is not required to bid on every item listed on Bid Schedule. Bids shall be submitted in the manner and subject to the conditions as set forth and described in the Information for Bidders, Form of Proposal 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

All qualified responsible bidders will be included in the overall award. Individual projects utilizing the prices of this contract will generally be offered to the lowest bidder able to provide all work elements of the project. It is anticipated that a Project Contract will be awarded to the lowest, qualified responsible bidder for the total Project area, according to the alternative(s) selected by the OWNER.

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. SUBMISSION OF BIDS

CONTRACTORS shall submit their bids to the Lexington-Fayette Urban County Government, Division of 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, 08/25/2014**. Sealed proposals shall be clearly marked on the outside of the container as follows: Company Name and Address, Bid Invitation Number **107-2014**, and **2014 Construction Unit Price Contract** to be opened at 2:00 p.m. local time 08/11/2014. 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.

8. 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.

9. 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

10. NOTICE CONCERNING DBE GOAL

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 EEO Office and the Director of the Division of 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:

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

END OF SECTION

PART II

INFORMATION FOR BIDDERS

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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. All blank spaces for the bid prices must be filled in, either in ink or typewritten with either an amount or the phrase "No bid". 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. Alternately, the bidder may choose to delete his bid for the item or items previously proposed to be done by the subcontractor.

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, if requested by the bid forms, in the order in which they are listed in the Bid Form but OWNER may accept or decline them in any order or combination. The contract, if awarded, will be awarded to the lowest, 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 and in good standing with the requirements and provisions of the Office of the Secretary of State, Commonwealth of Kentucky.

C. Good standing with Public Works Act - any CONTRACTOR and/or subcontractors in violation of any wage or work act provisions (KRS 337.510 to KRS 337.550) are prohibited by Statutory Act (KRS 337.990) from bidding on or working on any and all public works contracts, either in their name or in the name of any other company, firm or other entity in which he might be interested. No bid from a prime contractor in violation of the Act can be considered, nor will any subcontractor in violation of the Act be approved and/or accepted. The responsibility for the qualifications of the subcontractor is solely that of the prime contractor.

D. Optional OWNER Requirements - 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.

5. TIME OF COMPLETION AND LIQUIDATED DAMAGES

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 $250 per day as liquidated damages, or the sum as specified by the Section 108, KDOH Standard Specifications, current edition, for each consecutive calendar day thereafter as hereinafter provided in the General Conditions.

6. EXAMINATION OF CONTRACT DOCUMENTS

It is the responsibility of each Bidder before submitting a Bid, to (a) examine the Contract Documents thoroughly, (b) consider Federal, State and Local laws and regulations that may affect cost, progress, performance or furnishing of the work, (c) study and carefully correlate Bidder's observations with the Contract Documents, and (d) notify Engineer of all conflicts, errors or discrepancies in the Contract Documents.

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.

7. ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the Contract Documents will be made to any bidder orally. Every request for such interpretation or questions concerning this bid should be submitted in writing either on the Economic Engine website or by email to Theresa Maynard, Buyer Senior at theresam@lexingtonky.gov, who in turn will have an addendum issued if needed under signature of the Engineer for the Lexington-Fayette Urban County Government, and to be given consideration must be received must be received by the deadline for questions of August 14, 2014 at 2:00 pm local time. 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 emailed from the Economic Engine website and distributed by Lynn Imaging to all prospective bidders who have previously downloaded the Notification of Construction Project from Economic Engine or received the specification book from Lynn Imaging. 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.

8. SECURITY FOR FAITHFUL PERFORMANCE

A. A Performance Bond will be required before beginning work for the total cost of the work if the total cost of the work is greater than $50,000. Any additional work will also require additional Performance Bonds in the amount of 100% of work issued at that time. Prior to issuance of a specific Project Purchase Order, 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.

The CONTRACTOR is allowed to recapture the cost of these bonds by including in the Bid Schedule a percentage of the Total Project Cost.

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).**

D. CONTRACTOR shall also be required to provide current Insurance Certificates, simultaneously with Performance Bonds, which meet the requirement of these specifications before beginning work that is issued to the CONTRACTOR. This applies to all projects as they occur.

9. 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.

10. 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.

11. 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.

12. 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.

13. PREVAILING WAGE LAW AND MINIMUM HOURLY RATES

Federal or state wage rates and regulations, if required for this Project, will be negotiated at the time of awarding the project.

14. AFFIRMATIVE ACTION PLAN

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

1. Affirmative Action Plan for his/her firm – see Part III

2. Current Work Force Analysis Form – see Part III

3. Good Faith Effort Documentation – see Part III

4. List of Disadvantaged Business Enterprise Subcontractors and the Dollar Value of each Subcontract – see Part III

Bidders who frequently bid on Urban County Government projects may file a copy of their firm's Affirmative Action Plan with the Urban County Government. If an Affirmative Action Plan is filed with the Urban-County Government, additional submissions will not be required unless said plan is revised.

A Work Force Analysis Form shall be submitted for each Project. Failure to submit 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

15. CONTRACT TIME

Unit Price Contract (UPC) is anticipated to be in effect for one year with the option of renewing it for another year. For individual projects undertaken under this UPC, the time to completion for each project will be agreed upon between the OWNER and the CONTRACTOR and reflected in the Notice to Proceed.

16. SUBSTITUTE OR "OR-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 "or-equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or-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.

17. 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. Within 10 days of an award for a Project CONTRACTOR will submit 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.

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

I. Outreach

The Lexington-Fayette Urban County Government (LFUCG) maintains a mailing list of DBE contractors and organizations. When a LFUCG construction project is advertised for bidding, notices are sent to the entire mailing list. The 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 DBE contractor mailing list, please contact:

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

II. Subcontractors

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

For a list of eligible DBE subcontractors please contact:

Marilyn Clark
Division of Central Purchasing

Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507

III. Questions

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

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

19. MBE/WBE PARTICIPATION GOALS

A. GENERAL

1) The LFUCG request all potential contractors to make a concerted effort to include Minority-Owned (MBE) and Woman-Owned (WBE) Business Enterprises 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 Minority-Owned and Woman-Owned Businesses on this contract.
3) **It is therefore a request of each Bidder to include in its bid, the same goal (10%) or for MBE/WBE 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 Minority-Owned or Woman-Owned subcontractors and suppliers for work done or materials purchased for this contract. (See Subcontractor Monthly Payment Report)
2) Replacement of a Minority-Owned or Woman-Owned 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 MBE/WBE Firm; this is subject to approval by the LFUCG. (See LFUCG MBE/WBE Substitution Form)
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 MBE/WBE 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 Minority-Owned Business Enterprise (MBE) 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.

2) A Woman-Owned Business Enterprise (WBE) is defined as a business which is certified as being at least 51% owned and operated by one or more Non-Minority Females.

D. OBLIGATION OF BIDDER

1) **The bidder shall make a Good Faith Effort to achieve the Participation Goal for MBE/WBE 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) The Form of Proposal includes a section entitled "MBE/WBE Participation Form". The applicable information must be completed and submitted as outlined below.

4) **Failure to submit this information as requested will be cause for rejection of bid.**

E. DOCUMENTATION REQUIRED

1) Bidders reaching the Goal are required to submit only the "MBE/WBE Participation Form." The form must be fully completed including names and telephone number of participating MBE/WBE firm(s); type of work to be performed; estimated value of the contract and value expressed as a percentage of the total Lump Sum Bid Price. The form must be signed and dated, and is to be submitted with the bid.

2) Bidders not reaching the Goal must submit the "MBE/WBE Participation Form", the "MBE Quote Summary Form" and a written statement

documenting their Good Faith Effort to do so (If bid includes no MBE/WBE participation, bidder shall enter "None" on the subcontractor / supplier form). In addition, the bidder may submit the following as proof of Good Faith Efforts to meet the Participation Goal:

a) Advertisement by the bidder of MBE/WBE Contracting opportunities associated with this bid in at least two (2) of the following:

   1. A periodical in general circulation throughout the region
   2. A Minority-Focused periodical in general circulation throughout the region
   3. A Trade periodical aimed at the MBE/WBE community in general circulation throughout the region
   4. Bidder shall include copies of dated advertisement with his submittal

b) Evidence of written notice of contracting opportunities to at least five (5) MBE/WBE firms serving the construction industry at least seven (7) days prior to the bid opening date.

c) Copies of quotations submitted by MBE/WBE firms which were not used due to uncompetitive pricing or other factors and/or copies of responses from firms that were contacted indicating that they would not be submitting a bid.

d) Documentation of Bidder's utilization of the agencies identified to help locate potential MBE/WBE firms for inclusion on the contract including responses from agencies.

e) Failure to submit any of the documentation requested in this section will be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement. "Record of MBE/WBE Solicitation" and other required documentation of Good Faith Efforts are to be submitted with the bid, if participation Goal is not met.

MINORITY BUSINESS ENTERPRISE PROGRAM

Marilyn Clark
Minority Business Enterprise Liaison
Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street
Lexington, KY 40507
mclark@lexingtonky.gov
859-258-3323

OUR MISSION: The mission of the Minority Business Enterprise Program is to facilitate the full participation of minority and women owned businesses in the procurement process and to promote economic inclusion as a business imperative essential to the long term economic viability of Lexington-Fayette Urban County Government.

To that end the city council adopted and implemented resolution 167-91—Disadvantaged Business Enterprise (DBE) 10% Goal Plan in July of 1991. The resolution states in part (a full copy is available in Central Purchasing):

> *"A Resolution supporting adoption of the administrative plan for a ten percent (10%) Minimum goal for disadvantaged business enterprise participation in Lexington-Fayette Urban County Government construction and professional services contracts; Providing that as part of their bids on LFUCG construction contracts, general Contractors shall make a good faith effort to award at least ten percent (10%) of All subcontracts to disadvantaged business enterprises; providing that divisions of LFUCG shall make a good faith effort to award at least ten percent of their Professional services and other contracts to disadvantaged business enterprises..."*

A Disadvantaged Business Enterprise is defined as a business at least 51% owned, operated and managed by a U.S. Citizen of the following groups:

- African-American
- Hispanic-American
- Asian/Pacific Islander
- Native American/Native Alaskan
- Non-Minority Female

We are very happy that you have decided to bid for a contract, request for proposal, submitted a quote or are interested in learning more about how to do business with Lexington-Fayette Urban County Government. We have compiled the list below to help you locate certified minority vendors.

LFUCG—Economic Engine Listings
Marilyn Clark
mclark@lexingtonky.gov
859-258-3323

Commerce Lexington—
Tyrone Tyra, Minority Business Development
ttyra@commercelexington.com
859-226-1625

Tri-State Minority Supplier Diversity Council
Sonya Brown
sbrown@tsmsdc.com
502-625-0137

Small Business Development Council
Dee Dee Harbut /UK SBDC
dharbut@uky.edu

Shawn Rogers, UK SBDC
Shawn.rogers@uky.edu

Shiree Mack
smack@uky.edu

Community Ventures Corporation
James Coles
jcoles@cvcky.org
859-231-0054

Kentucky Department of Transportation
Shella Jarvis
Shella.Jarvis@ky.gov
502-564-3601

KPAP
Debbie McKnight
Debbie.McKnight@ky.gov
800-838-3266 or 502-564-4252

Bobbie Carlton
Bobbie.Carlton@ky.gov

Ohio River Valley Women's Business Council
Rea Waldon
rwaldon@gcul.org
513-487-6534

Kentucky Small Business Connect
Tom Back
800-626-2250 or 502-564-2064
https://secure.kentucky.gov//sbc

National Minority Supplier Development Council, Inc. (NMSDC)
www.nmsdc.org

20. REQUIRED SUBMITTALS

The following must be submitted with your bid at **minimum** or your bid will be considered non-responsive and rejected:

- Part III-
  - Form of Proposal
  - Legal Status of Bidder
  - Bidder's Affidavit (must be signed and notarized)
  - Bid Schedule (w/original signature)
  - Bid Schedule (electronic submittal in .xls format on a CD or flashdrive)
  - Statement of Bidder's Qualifications
  - List of proposed subcontractors (excluding percentages)
  - LFUCG MBE/WBE Participation Form (filled out as completely as possible)
  - MBE/WBE Quote Summary Form (filled out as completely as possible)
  - LFUCG Statement of Good Faith Efforts
  - Authentication of Bid and Statement of Non-Collusion/Non-Conflict
  - Statement of Experience
  - EEO Agreement
  - EEO Affirmative Action Policy
  - Workforce Analysis Form
  - Evidence of Insurability Form or Certificate of Insurance
  - Debarred Firms Form
  - Debarment Certification
  - Printed Version of Excel Spreadsheet with Unit Prices

Note: Applicable to Unit Price Contract (UPC) bidding, the following forms, (some of which will be partially completed and submitted with the original bid), will be required in full when a specific project is Awarded:

- Part III –
  - List of Proposed Subcontractors, (including percentages)
  - LFUCG MBE/WBE Participation Form
  - LFUCG MBE/WBE Substitution Form (if MBE/WBE is not listed on the original Participation Form)
  - MBE/WBE Quote Summary Form
  - LFUCG MBE/WBE Subcontractor Monthly Payment Report
  - LFUCG Statement of Good Faith Efforts

PART III

FORM OF PROPOSAL

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PART III

Invitation to Bid No. 107-2014

2014 Construction Unit Price Contract

1. FORM OF PROPOSAL

Place: Lexington, Kentucky

Date: August 25, 2014

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

This Proposal Submitted by ASL EXCAVATING INC.
P.O. Box 321
Flemingsburg, KY 41041
606-849-4511
(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 **2014 Construction Unit Price Contract** having examined the Specifications and Contract Documents, having intent to examine each site for proposed Work hereby proposes to furnish all labor, materials, and supplies, and to construct the Project(s) 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 agreed-to Purchase Order accepted under this Contract and to complete the Project(s) within the time provided by the Purchase Order..

The Bidder hereby acknowledges receipt of the following addenda:

Addendum No. 1 Date 8/6/14

Addendum No. ____ Date _____

Addendum No. ____ Date _____

Addendum No. ____ Date _____

Addendum No. ____ Date _____

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 ASL Excavating Inc

Date 8/25/14

* 1. A corporation duly organized and doing business under the laws of the State of Kentucky, for whom Gary Shannon, 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. **BIDDER'S AFFIDAVIT**

Comes the Affiant, Gary Shannon, and after being first duly sworn, states under penalty of perjury as follows:

1. His/her name is Gary Shannon and he/she is the individual submitting the bid or is the authorized representative of A & L Excavating Inc, 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 the campaign finance laws of the Commonwealth of Kentucky within the past five (5) years and the award of a contract to the Bidder will not violate any provision of the campaign finance laws of the Commonwealth.
6. 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."
7. 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.

Further, Affiant sayeth naught.

✓ Gary Shannon
(Affiant)

STATE OF Kentucky

COUNTY OF Fleming

The foregoing instrument was subscribed, sworn to and acknowledged before me by Gary Shannon on this the 22nd day of August, 2014.

My Commission expires: 6/28/17

Georgia A. Cropper
NOTARY PUBLIC, STATE AT LARGE

OFFICIAL SEAL
GEORGIA A. CROPPER
NOTARY PUBLIC - KENTUCKY
STATE-AT-LARGE
My Comm. Expires 6/28/17

4. BID SCHEDULE – SCHEDULE OF VALUES

The Bidder agrees to perform all the Work described in the Specifications and shown on future Plans for the following proposed 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.

In addition to completing the following schedule of values, Bidders shall enter their unit prices on the attached Excel spreadsheet (Available through the LFUCG Economic Engine Marketplace), titled ***2014 Construction Unit Price Contract Bid Schedule.xls***, and submit it with their bid on a CD or flash drive. Any discrepancies between entries in the table below and the electronic spreadsheet will defer to the unit price as written in the schedule below.

The Bidder is not required to bid on every item listed in the bid schedule. In instances where the Bidder chooses not to bid on a specific item, the Bidder shall enter the phrase "no bid" in the unit price column for that respective item. However, Bidders are cautioned that failure to submit a unit bid price on an item will disqualify the Bidder from any project requiring that item, even if they have submitted unit bid prices for all other work items pertaining to that particular project.

IN ADDITION TO COMPLETING THE LINE ITEM UNIT PRICES BELOW, BIDDERS MUST COMPLETE THE EXCEL SPREADSHEET AVAILABE ON THE LFUCG ECONOMIC ENGINE MARKETPLACE WEBSITE AND RETURN IT WITH THEIR SUBMITTAL ON A CD OR FLASH DRIVE.

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
1.	Excavation for Fourteen Dollars fifty Cents per CY	$ 14.50
2.	Embankment for Sixteen Dollars zero Cents per CY	$ 16.00
3.	Rock Excavation (Mechanical) for Thirty-seven Dollars twenty-five Cents per CY	$ 37.25

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
4.	Remove Portland Cement Concrete Pavement for Twenty - eight Dollars fifty Cents per SY	$ 28.50
5.	Remove Curb and Gutter for Eight Dollars zero Cents per LF	$ 8.00
6.	Remove Sidewalk, Entrance Pavement for Ten Dollars thirty Cents per SY	$ 10.30
7.	Remove Bituminous Concrete Pavement for Seven Dollars zero Cents per SY	$ 7.00
8.	Remove Pipes less than 24" – up to 8' deep for Twelve Dollars zero Cents per LF	$ 12.00
9.	Remove Pipes 30"- 48" – up to 8' deep for Eighteen Dollars zero Cents per LF	$ 18.00
10.	Remove Fence for Three Dollars zero Cents per LF	$ 3.00
11.	Remove Headwalls and Inlet Structures for Seven hundred Dollars zero Cents per EA	$ 700 00
12.	Remove Tree (5" to 12" Diameter) for Two hundred fifty Dollars zero Cents per EA	$ 250 00

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
13.	Remove Tree (>12" to 23" Diameter) for Five hundred ninety-five Dollars Zero Cents per EA	$ 595.00
14.	Remove Tree (>24" to 36" Diameter) for One thousand three hundred Dollars Zero Cents per EA	$ 1300.00
15.	Remove Tree (>36" Diameter and up) for Two thousand five hundred Dollars Zero Cents per EA	$ 2500.00
16.	Dense Graded Aggregate Base for Twenty-two Dollars Zero Cents per TN	$ 22.00
17.	No. 2 Stone for Twenty-three Dollars Zero Cents per TN	$ 23.00
18.	No. 9 Stone for Twenty-four Dollars Zero Cents per TN	$ 24.00
19.	No. 57 Stone for Twenty-one Dollars Zero Cents per TN	$ 21.00
20.	Steel Reinforcement for Concrete for One Dollars twenty Cents per LB	$ 1.20
21.	Unfinished Concrete less than 10 cubic yards for One hundred forty Dollars Zero Cents per CY	$ 140.00

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
22.	Unfinished Concrete more than 10 cubic yards for One hundred thirty-five Dollars zero Cents per CY	$ 135.00
23.	Formed Class A Concrete less than 10 cubic yards for Eight hundred Dollars zero Cents per CY	$ 800.00
24.	Formed Class A Concrete more than 10 cubic yards for Five hundred ninety Dollars zero Cents per CY	$ 590.00
25.	4 1/2" Concrete Sidewalk for Thirty-eight Dollars zero Cents per SY	$ 38.00
26.	6" Concrete Sidewalk for Forty-five Dollars zero Cents per SY	$ 45.00
27.	6" Concrete Entrance Pavement for Sixty one Dollars zero Cents per SY	$ 61.00
28.	Sidewalk Ramp for One hundred two Dollars zero Cents per SY	$ 102.00
29.	Header Curb for Thirty Dollars zero Cents per LF	$ 30.00
30.	Curb and Gutter, Type 1 for Twenty-one Dollars fifty Cents per LF	$ 21.50

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
31.	Curb and Gutter, Type 4 for Twenty-five Dollars Zero Cents per LF	$ 25.00
32.	Bituminous Pavement Milling & Texturing for Thirty Dollars Eighty-five Cents per TN	$ 30.85
33.	Bituminous Base for Sixty Dollars Thirty-five Cents per TN	$ 60.35
34.	Class I Bituminous Surface less than 50 tons for Seventy-three Dollars Sixty-five Cents per TN	$ 73.65
35.	Class I Bituminous Surface greater than 50 tons for Sixty-six Dollars fifteen Cents per TN	$ 66.15
36.	Bituminous Material for Tack for Six hundred Dollars Zero Cents per TN	$ 600.00
37.	LFUCG Type "A" Surface Inlet for Four thousand Dollars zero Cents per EA	$ 4000.00
38.	LFUCG Type "B" Surface Inlet for Three thousand eight hundred Dollars zero Cents per EA	$ 3800.00
39.	LFUCG Curb Box Inlet Type "A" for Four thousand two hundred Dollars zero Cents per EA	$ 4200.00

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
40.	LFUCG Curb Box Inlet Type "B" for Three thousand nine hundred seventy five — Dollars zero Cents per EA	$ 3975 00
41.	LFUCG Curb Box Inlet Type "C" for Three thousand seven hundred — Dollars zero Cents per EA	$ 3700 00
42.	LFUCG Curb Box Inlet Type "D" for Two thousand eight hundred fifty — Dollars zero Cents per EA	$ 2850 00
43.	KDOH Curb Box Inlet Type "B" for Three thousand NINE hundred — Dollars zero Cents per EA	$ 3900 00
44.	KDOH Drop Box Inlet Type "13" for Two thousand seven hundred fifty — Dollars zero Cents per EA	$ 2750 00
45.	KDOH Drop Box Inlet Type "16" for Three thousand — Dollars zero Cents per EA	$ 3000 00
46.	Lexington Storm Sewer Manholes (4' Dia.) (0-8' No Rock) for Three thousand — Dollars zero Cents per EA	$ 3000 00
47.	Lexington Storm Sewer Manhole (5' Dia.) (0-8' No Rock) for five thousand — Dollars zero Cents per EA	$ 5000 00
48.	Lexington Storm Sewer Manhole (6' Dia.) (0-8' No Rock) for Six thousand — Dollars zero Cents per EA	$ 6000 00

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
49.	Pipe Tie-in into Manhole or Curb Box Inlet for Eight hundred ——— Dollars zero ——— Cents per EA	$ 800 00
50.	15" RCP Storm Sewer (0-8' No Rock) for Fifty - six ——— Dollars zero ——— Cents per LF	$ 56.00
51.	18" RCP Storm Sewer (0-8' No Rock) for Sixty - six ——— Dollars zero ——— Cents per LF	$ 66.00
52.	24" RCP Storm Sewer (0-8' No Rock) for Seventy - one ——— Dollars zero ——— Cents per LF	$ 71.00
53.	30" RCP Storm Sewer (0-8' No Rock) for Eighty - seven ——— Dollars zero ——— Cents per LF	$ 87.00
54.	36" RCP Storm Sewer (0-8' No Rock) for One hundred twenty ——— Dollars zero ——— Cents per LF	$ 120 00
55.	42" RCP Storm Sewer (0-8' No Rock) for One hundred thirty ——— Dollars zero ——— Cents per LF	$ 130.00
56.	48" RCP Storm Sewer (0-8' No Rock) for One hundred eighty ——— Dollars zero ——— Cents per LF	$ 180.00
57.	15" HDPE Storm Sewer (0-8' No Rock) for Fifty ——— Dollars zero ——— Cents per LF	$ 50 00

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
58.	18" HDPE Storm Sewer (0-8' No Rock) for Fifty-four Dollars fifty Cents per LF	$ 54.50
59.	24" HDPE Storm Sewer (0-8' No Rock) for Sixty Dollars zero Cents per LF	$ 60.00
60.	30" HDPE Storm Sewer (0-8' No Rock) for Eighty-two Dollars zero Cents per LF	$ 82.00
61.	36" HDPE Storm Sewer (0-8' No Rock) for One hundred five Dollars zero Cents per LF	$ 105.00
62.	15" PP Storm Sewer (0-8' No Rock) for Fifty-two Dollars zero Cents per LF	$ 52.00
63.	18" PP Storm Sewer (0-8' No Rock) for Fifty-six Dollars fifty Cents per LF	$ 56.50
64.	24" PP Storm Sewer (0-8' No Rock) for Sixty-two Dollars fifty Cents per LF	$ 62.50
65.	30" PP Storm Sewer (0-8' No Rock) for Eighty-five Dollars zero Cents per LF	$ 85 00
66.	36" PP Storm Sewer (0-8' No Rock) for One hundred eight Dollars zero Cents per LF	$ 108 00

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
67.	15" Elliptical RCP Storm Sewer (0-8' No Rock) for Sixty - two Dollars zero Cents per LF	$ 62.00
68.	18" Elliptical RCP Storm Sewer (0-8' No Rock) for Seventy - two Dollars zero Cents per LF	$ 72.00
69.	24" Elliptical RCP Storm Sewer (0-8' No Rock) for Seventy - eight Dollars Zero Cents per LF	$ 78.00
70.	30" Elliptical RCP Storm Sewer (0-8' No Rock) for Ninety - three Dollars zero Cents per LF	$ 93.00
71.	36" Elliptical RCP Storm Sewer (0-8' No Rock) for One hundred thirty - six Dollars zero ~~Cents~~ per LF	$ 136.00
72.	42" Elliptical RCP Storm Sewer (0-8' No Rock) for One hundred forty - five Dollars zero Cents per LF	$ 145.00
73.	48" Elliptical RCP Storm Sewer (0-8' No Rock) for Two hundred one Dollars zero ~~Cents~~ per LF	$ 201.00
74.	Internal Inspection of Sewer Pipe: CCTV for No bid Dollars Cents per LF	$ No bid
75.	15" Straight Headwall (Standard or Raised) for One thousand three hundred Dollars zero Cents per EA	$ 1300.00

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
76.	18" Straight Headwall (Standard or Raised) for One thousand four hundred ——— Dollars zero ——— Cents per EA	$ 1400.00
77.	24" Straight Headwall (Standard or Raised) for One thousand six hundred seventy-five Dollars zero Cents per EA	$ 1675.00
78.	15" Pipe Culvert Headwall for One thousand two hundred ——— Dollars zero Cents per EA	$ 1200.00
79.	18" Pipe Culvert Headwall for One thousand three hundred ——— Dollars zero Cents per EA	$ 1300.00
80.	24" Pipe Culvert Headwall for One thousand four hundred fifty ——— Dollars zero Cents per EA	$ 1450.00
81.	30" Pipe Culvert Headwall for One thousand nine hundred ——— Dollars zero Cents per EA	$ 1900.00
82.	36" Pipe Culvert Headwall for Two thousand four hundred ——— Dollars zero Cents per EA	$ 2400.00
83.	42" Pipe Culvert Headwall for Two thousand seven hundred fifty ——— Dollars NO Cents per EA	$ 2750.00
84.	48" Pipe Culvert Headwall for Three thousand six hundred ——— Dollars zero Cents per EA	$ 3600.00

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
85.	18" Sloped and Flared Box Inlet-Outlet for Two thousand two hundred fifty Dollars zero Cents per EA	2250.00
86.	24" Sloped and Flared Box Inlet-Outlet for Two thousand eight hundred Dollars zero Cents per EA	2800.00
87.	30" Sloped and Flared Box Inlet-Outlet for Four thousand one hundred Dollars zero Cents per EA	4100.00
88.	36" Sloped and Flared Box Inlet-Outlet for Five thousand eight hundred Dollars zero Cents per EA	5800.00
89.	15" Impact Stilling Basin for One thousand five hundred Dollars zero Cents per EA	$ 1500.00
90.	18" Impact Stilling Basin for One thousand six hundred Dollars zero Cents per EA	$ 1600.00
91.	24" Impact Stilling Basin for Two thousand Dollars zero Cents per EA	$ 2000.00
92.	30" Impact Stilling Basin for Two thousand seven hundred Dollars zero Cents per EA	$ 2700.00
93.	36" Impact Stilling Basin for Three thousand three hundred fifty Dollars zero Cents per EA	$ 3350.00

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
94.	48" Impact Stilling Basin for Four thousand two hundred Dollars zero Cents per EA	$4200.00
95.	Bottom Paved Ditch for Eighty-eight Dollars zero Cents per SY	$ 88.00
96.	Aggregate Channel Lining for Slope Protection for Twenty-seven Dollars zero Cents per TN	$ 27.00
97.	Seeding and Protection for One Dollars Twenty Cents per SY	$ 1.20
98.	Sodding for Five Dollars fifty ~~Cents per SY~~	$ 5.50
99.	Gabion Mattress Channel Lining for One hundred forty-five Dollars zero Cents per CY	$ 145.00
100.	4" HDPE Perforated Pipe for seven Dollars zero ~~Cents~~ per LF	$ 7.00
101.	6" HDPE Perforated Pipe for Nine Dollars zero Cents per LF	$ 9.00
102.	4" PVC Pipe for Twenty Dollars zero Cents per LF	$ 20.00

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
103.	6" PVC Pipe for Twenty-three Dollars zero Cents per LF	$ 23 00
104.	8" PVC Sanitary Sewer (0-8' No Rock) for Thirty Dollars zero Cents per LF	$ 30 00
105.	10" PVC Sanitary Sewer (0-8' No Rock) for Thirty-six Dollars zero Cents per LF	$ 36 00
106.	12" PVC Sanitary Sewer (0-8' No Rock) for Forty-six Dollars zero Cents per LF	$ 46 00
107.	15" PVC Sanitary Sewer (0-8' No Rock) for Fifty-four Dollars zero Cents per LF	$ 54 00
108.	18" PVC Sanitary Sewer (0-8' No Rock) for Sixty-eight Dollars zero Cents per LF	$ 68 00
109.	8" Ductile Iron Sewer Pipe (0-8' No Rock) for Sixty-eight Dollars zero Cents per LF	$ 68 00
110.	10" Ductile Iron Sewer Pipe (0-8' No Rock) for Seventy-four Dollars zero Cents per LF	$ 74 00
111.	12" Ductile Iron Sewer Pipe (0-8' No Rock) for Seventy-eight Dollars zero Cents per LF	$ 78 00

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
112.	14" Ductile Iron Pipe (0-8' No Rock) for One hundred ten — Dollars zero Cents per LF	$ 110 00
113.	Sanitary Sewer By-Pass Pumping for Two thousand five hundred — Dollars zero Cents per DAY	$ 2500 00
114.	Two Way Sewer Service Cleanout for Seven hundred fifty — Dollars zero Cents per EA	$ 750 00
115.	4" X 8" PVC Sanitary Sewer Tee & up to 6 ft of lateral for Five hundred fifty — Dollars zero Cents per EA	$ 550 00
116.	6" X 8" PVC Sanitary Sewer Tee & up to 6 ft of lateral for Six hundred — Dollars zero Cents per EA	$ 600 00
117.	Lexington Sanitary Sewer Manholes (4' Dia.) (0-8' No Rock) for Three thousand — Dollars zero Cents per EA	$ 3000 00
118.	Lexington Sanitary Sewer Manhole (5' Dia.) (0-8' No Rock) for Four thousand five hundred — Dollars zero Cents per EA	$ 4500 00
119.	Lexington Sanitary Sewer Manhole (6' Dia.) (0-8' No Rock) for Six thousand five hundred — Dollars zero Cents per EA	$ 6500 00
120.	Manhole - Additional Vertical Depth Deeper than 8'0" (4' dia) for One hundred sixty — Dollars zero Cents per VF	$ 160 00

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
121.	Manhole - Additional Vertical Depth Deeper than 8'0" (5' dia) for Two hundred twenty Dollars zero Cents per VF	$ 220 00
122.	Manhole - Additional Vertical Depth Deeper than 8'0" (6' dia) for Two hundred fifty Dollars zero Cents per VF	$ 250 00
123.	Manhole - Additional for Adjustable Frame and Cover for One thousand two hundred fifty Dollars zero Cents per EA	$ 1250 00
124.	Woven Wire Fence 4' Height for Eight Dollars zero Cents per LF	$ 8 00
125.	Chain Link Fence 4' Height for Nineteen Dollars fifty Cents per LF	$ 19.50
126.	Privacy Fence (installation) for Thirty - six Dollars zero Cents per LF	$ 36 00
127.	Backhoe (Small) with Operator for Eighty - eight Dollars zero Cents per HR	$ 88 00
128.	Dump Truck (single axle) with Driver for Seventy - seven Dollars fifty Cents per HR	$ 77 50
129.	Dump Truck (tri-axle) with Driver for Ninety Dollars zero Cents per HR	$ 90 00

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
130.	Jackhammer with Operator for Seventy - five Dollars zero Cents per HR	$ 75.00
131.	Skid Loader with Operator for Eighty - five Dollars zero Cents per HR	$ 85.00
132.	Check Dam for Thirty - two Dollars zero Cents per TN	$ 32.00
133.	Sediment Trap for Thirty - two Dollars zero Cents per CY	$ 32.00
134.	Sediment Pond for Thirty - six Dollars zero Cents per CY	$ 36.00
135.	Silt Fence for Two Dollars Sixty Cents per LF	$ 2.60
136.	Storm Drain Inlet Protection for One hundred sixty Dollars zero Cents per EA	$ 160.00
137.	Filter Strip for Seven Dollars zero Cents per SY	$ 7.00
138.	Stream Crossing for Three thousand five hundred Dollars zero Cents per EA	$ 3500.00

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
139.	Pump-Around Flow Diversion for Two Thousand five hundred — Dollars zero — Cents per DAY	$ 2500 00
140.	Construction Dewatering for Seventy — Dollars zero — Cents per DAY	$ 70 00
141.	Geotextile Construction (Type I) for One — Dollars Eighty — Cents per SY	$ 1.80
142.	Geotextile Construction (Type II) for One — Dollars Eighty - Six — Cents per SY	$ 1.86
143.	Geotextile Construction (Type III) for One — Dollars Ninety — Cents per SY	$ 1.90
144.	Geotextile Construction (Type IV) for One — Dollars Ninety - two — Cents per SY	$ 1.92
145.	Edge Key for G.S. Six — Dollars fifty — Cents per LF	$ 6.50 G.S.
146.	Pipe Plugging for Pipes less than or equal to 24" for Seven hundred fifty — Dollars zero — Cents per EA	$ 750 00
147.	Pipe Plugging for Pipes 30"- 48" for Nine hundred — Dollars zero — Cents per EA	$ 900 00

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
148.	Flowable Fill for One hundred thirty two Dollars zero Cents per CY	$ 132 00
149.	Fiber Reinforced PCC Pavement for No bid Dollars Cents per CY	$ No bid
150.	Single Block Masonry Retaining Wall for No bid Dollars Cents per SF	$ No bid
151.	Erosion Control Blanket: Degradable Erosion Control Mat for One Dollars twenty Cents per SY	$ 1.20
152.	Erosion Control Blanket: Turf Reinforcement Mat for five Dollars seventy - five Cents per SY	$ 5.75
153.	Project Sign for Seven hundred fifty Dollars zero Cents per EA	$ 750 00
154.	Steel W Beam Guardrail and End Treatments for No bid Dollars Cents per LF	$ No bid
155.	Articulating Concrete Block for No bid Dollars Cents per SY	$ No bid
156.	Reinforced Concrete Pipe Crack Repairs & Manhole Rehabilitation for No bid Dollars Cents per LF	$ No bid

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
157.	Sawcutting for Three Dollars zero Cents per LF	$ 3 00
158.	Precast Reinforced Concrete Box Culvert (3' X 2') for No bid Dollars Cents per LF	$ No bid
159.	Precast Reinforced Concrete Box Culvert (3' X 3') for No bid Dollars Cents per LF	$ No bid
160.	Precast Reinforced Concrete Box Culvert (4' X 2') for Four hundred thirty five Dollars NO Cents per LF	$ 435 00
161.	Precast Reinforced Concrete Box Culvert (4' X 3') for five hundred fifteen Dollars zero Cents per LF	$ 515 00
162.	Detectable Warning Surface Tile-Overlay for Seventy-five Dollars Zero ~~Cents per~~ SF	$ 75 00
163.	Detectable Warning Surface Tile-Imbedded Installation for Sixty Dollars zero Cents per SF	$ 60 00
164.	Bulb-out: Gutter Cover for No bid Dollars Cents per LF	$ No bid
165.	Bulb-out: Asphalt Repair for No bid Dollars Cents per SF	$ No bid

Item No.	Item Description With Unit of Measurement and Unit Bid Price Written In Words	Unit Price
166.	Grader with Operator for One hundred seventy Dollars zero Cents per HR	$ 170 00
167.	Roller with Compactor for Ninety-four Dollars zero Cents per HR	$ 94 00
168.	Topsoil Placement for Twenty-six Dollars zero Cents per CY	$ 26 00

~~0.5~~ 2.5%	Payment and Performance Bond Cost for Projects over $50,000. ~~Three~~ ~~6.5~~ ~~Three and~~ ~~one-half~~ Two and one/half percent Per cent of Total Project Cost* * See Special Conditions, Section 6, Payment for Cost of P&P Bonds…	~~6.5~~ 2.5 %
	Unspecified, Incidental Materials at Cost Plus 15% Overhead and Profit (To be submitted as Contract progresses and as needed) Check if interested	______
	Unspecified, Incidental Labor at Direct Wages Plus Certified Overhead Plus 15% Profit (To be submitted as Contract progresses and as needed) Check if interested	______
	Minimum Project Total For Which Contractor will consider the project. (See Special Conditions, Section 3, Contractors Performance)	$ 5000 –

Mobilization, Traffic Control, Construction Staking and E&S Permitting will be paid on a sliding percentage scale for increments of the final price for Work, per the table below.

(For example, if the final total of Bid Item Prices for the work is $24,000, Mobilization would be ($10,000 X 15%) plus ($10,000 X 10%) plus ($4,000 X 5%) = $2,700)

No additional compensation will be paid beyond a contract price of $100,000. For example, the mobilization cost for a $100,000 price of work will be identical to that for a $110,000 price of work.

Applicability of Traffic Control, Construction Staking and E&S Permitting will be agreed upon individually for each Purchase Order.

Table of Incremental Costs for Mobilization and Additional Services

Increment Price for Work	(a) Mobilization Cost %	(b) Traffic Control Cost %	(c) Construction Staking Cost %	(d) SWPP Etc. Cost %
$0 - 10,000	15.0	7.5	7.5	5.0
$10,000 - 20,000	10.0	4.5	4.5	0.5
$20,000 - 30,000	5.0	3.0	3.0	0.5
$30,000 - 50,000	5.0	2.5	2.5	0.5
$50,000 - 75,000	5.0	2.5	2.5	0.5
$75,000 - 100,000	4.0	2.0	2.0	0.5

Submitted by:

A S L EXCAVATING INC.
P.O. Box 321
Flemingsburg, KY 41041
606-849-4511
Firm

Address

City, State & Zip

Bid must be signed:
(original signature)

/Gary Shannon President
Signature of Authorized Company Representative – Title

Gary Shannon
Representative's Name (Typed or Printed)

606-849-4511 606-849-3264
Area Code – Phone – Extension *Fax #*

aslexcavating@windstream.net
E-Mail Address

OFFICIAL ADDRESS:

A S L EXCAVATING INC.
P.O. Box 321
Flemingsburg, KY 41041
606-849-4511

_____ (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: A&L Excavating Inc.
2. Permanent Place of Business: 1692 Mockingbird Hill, Flemingsburg KY
3. When Organized: July 1996
4. Where Incorporated: Kentucky
5. Construction Plant and Equipment Available for this Project:

See attached listing

(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:

Great American Insurance Company (Surety)

Signed: Susan A. Yeazell (Representative of Surety)

Susan A. Yeazell, Attorney-in-Fact

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

ASL EXCAVATING INC.
r EQUIPMENT LIST

1	CAT D7H DOZER	S/N 79Z01939
2	Daewoo 255 Excavator	S/N 1440
3	CAT 973 TRACK LOADER - 1984	S/N 86G00174
4	Cat D8R Dozer	S/N 6YZ00637
5	CASE 1150D DOZER	S/N 22222
6	Cat 315 Excavator	S/N CJC00188
7	CAT IT28B INTEGRATED TOOL CARRIER	S/N 1HF01844
8	CAT D5H DOZER - 1986	S/N 3MD495
9	CASE 580SL BACKHOE	S/N JJG0266688
10	1984 Cat Scraper 621B	S/N 45P03604
11	1984 MACK TRACTOR VIN 1M2V121Y8EM001413	
12	2002 TALBERT LOWBOY TRAILER	S/N 4310
13	BLUEGRASS UTILITY TRAILER 7000 GVW	S/N 0099000000102570
14	1982 MACK DUMP TRUCK-TANDEM	VIN 1M2120C4CA050860
15	IR SD77DX Vib Roller	S/N 17717
16	1985 FORD GREASE TRUCK	VIN 1FDNR70U1FVA52008
17	1985 AUTOCAR TANDEM DUMP TRUCK	VIN WBUCCJ4FU097310
18	Terex 140 Excavator	S/N LLU1928
19	CAT 621B SCRAPER	S/N 45P3408
20	CAT 627 SCRAPER	S/N 54K826
21	CAT 627 SCRAPER	S/N 68M665
22	CAT 621 SCRAPER	S/N 23H2164
23	CAT 621 SCRAPER - 1968	S/N 23H1069
24	CAT 621 SCRAPER - 1970	S/N 23H3307
25	IR SD105 Vib Roller	S/N SD105DX
26	DAEWOO SL330-III EXCAVATOR-1999	S/N 0440
27	KOMATSU PC150LC6 EXCAVATOR	S/N K30760
28	CAT 613 SCRAPER	S/N 38W07670
29	PULL BEHIND ROLLER	
30	CAT 621B SCRAPER	S/N 45P3375
31	2005 Kenworth Tractor	VIN 1XKWDB0X75J117085
32	Takeuchi Skidsteer TL230	S/N 223000306
33	Case 1150H Dozer	S/N CAL 001132
34	2006 Mechanic's truck F650	VIN 3FRWF65Q16V295114
35	1991 Mack CH12 Single axle Dump truck	MW002808
36	1984 Cat Scraper 621B	S/N 45P03637

NAME	LOCATION	CONTRACT SUM
Previous LFUCG Contracts		$ 6000 +
KYTC projects	state wide	96,000 +
various projects	state wide, for	East Ky Power 15,000 +

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

NAME	LOCATION	CONTRACT SUM
Fleming 14-4110	Ky 57, Flemingsburg Ky	430,946.37
Meade 14-1213	Ky 933 & Berryman Rd Connector	345,250.56
Woodford 13-1222	KY 169 Pinckard Pike	1,244,874.16

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

NAME	POSITION DESCRIPTION	NO. OF YEARS WITH BIDDER
Henry Cropper	Supervisor	16 yrs.
Larry Leadingham	Supervisor	18 yrs.

11. DBE Participation on current bonded projects under contract:

SUBCONTRACTORS (LIST)	PROJECT (SPECIFIC TYPE)	DBE	% of WORK
N H Stone	Fleming 14-4110	✓	12.95

(USE ADDITIONAL SHEETS IF NECESSARY)

6. **LIST OF PROPOSED SUBCONTRACTORS**

See note in Part II.20, Information for Bidders regarding UPC bidding.

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.

BRANCH OF WORK - LIST EACH MAJOR ITEM Such as: Grading, bituminous paving, concrete, seeding and protection, construction staking, etc.	**SUBCONTRACTOR**	**DBE Yes/No**	**% of Work**
1. Asphalt	Name: ATS Construction Address: 3009 Atkinson Ave Suite 400 Lexington, KY 40509	No	
2. Staking	Name: Allen Engineering Inc Address: 2509 Lenlake Court Lexington, KY 40513	Yes	
3. Seeding & guardrail	Name: JAG Inc Address: 657 Bayswater Way Lexington KY	yes	
4. Waterline & sewer relocation	Name: Thompson Brothers Address: 3691 Ringos Mill Rd Hillsboro KY 41093	No	
5.	Name: Address:		

(Attach additional sheet(s) if necessary.)

7. **LFUCG MBE/WBE PARTICIPATION FORM**
See note in Part II.20, Information for Bidders regarding UPC bidding.

Bid/RFP/Quote Reference # 107 - 2014

The MBE/WBE subcontractors listed have agreed to participate on this Bid/RFP/Quote. If any substitution is made or the total value of the work is changed prior to or after the job is in progress, it is understood that those substitutions must be submitted to Central Purchasing for approval immediately.

MBE/WBE Company, Name, Address, Phone, Email	Work to be Performed	Total Dollar Value of the Work	% Value of Total Contract
1. JAG Inc 657 Bayswater Way Lexington KY 40503 859-523-7307	Seeding guardrail	Various As needed	As needed
2. Allen Engineering Inc 2509 Lenlake Court Lexington KY 40513 859-229-7362	staking misc concrete	As needed	As needed
3.			
4.			

The undersigned company representative submits the above list of MBE/WBE firms to be used in accomplishing the work contained in this Bid/RFP/Quote. Any misrepresentation may result in the termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

ASL Excavating Inc
Company

Gary Shannon
Company Representative

8/22/14
Date

President
Title

8. **LFUCG MBE/WBE SUBSTITUTION FORM**

See note in Part II.20, Information for Bidders regarding UPC bidding.

Bid/RFP/Quote Reference # 107-2014 None at this time

The substituted MBE/WBE subcontractors listed below have agreed to participate on this Bid/RFP/Quote. These substitutions were made prior to or after the job was in progress. These substitutions were made for reasons stated below and are now being submitted to Central Purchasing for approval. By the authorized signature of a representative of our company, we understand that this information will be entered into our file for this project.

SUBSTITUTED MBE/WBE Company Name, Address, Phone, Email	MBE/WBE Formally Contracted/ Name, Address, Phone, Email	Work to Be Performed	Reason for the Substitution	Total Dollar Value of the Work	% Value of Total Contract
1.					
2.					
3.					
4.					

The undersigned acknowledges that any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

A & L Excavating Inc.
Company

/Gary Shannon
Company Representative

8/22/14
Date

President
Title

9. **MBE/WBE QUOTE SUMMARY FORM**
See note in Part II.20, Information for Bidders regarding UPC bidding.

Bid/RFP/Quote Reference # 107-2014

The undersigned acknowledges that the minority subcontractors listed on this form did submit a quote to participate on this project.

Company Name	Contact Person
ASL Excavating Inc	Gary Shannon
Address/Phone/Email	**Bid Package / Bid Date**
PO Box 321 Flemingsburg KY 41041 606.849.4511 aslexcavating@windstream.net	107-2014 8/25/14

MBE/WBE Company Address	Contact Person	Contact Information (work phone, Email, cell)	Date Contacted	Services to be performed	Method of Communication (email, phone meeting, ad, event etc)	Total dollars $$ Do Not Leave Blank (Attach Documentation)	MBE * AA HA AS NA Female
Allen Engineering	Lilli Allen	859-229-7862	8/21/14	staking	phone	As needed	Female
JAG Inc	Gina Ruth	859-229-523-7307	8/21/14	seeding fencing	phone	As needed	Female

(MBE designation / AA=African American / HA= Hispanic American/AS = Asian American/Pacific Islander/ NA= Native American)

The undersigned acknowledges that all information is accurate. Any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

ASL Excavating Inc
Company

Gary Shannon
Company Representative

8/22/14
Date

President
Title

10. LFUCG MBE/WBE SUBCONTRACTOR MONTHLY PAYMENT REPORT

See note in Part II.20, Information for Bidders regarding UPC bidding.

The LFUCG has a 10% goal plan adopted by city council to increase the participation of minority and women owned businesses in the procurement process. In order to measure that goal LFUCG will track spending with MBE/WBE vendors on a monthly basis. By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentation may result in termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims. Please submit this form monthly to the Division of Central Purchasing/ 200 East Main Street / Room 338 / Lexington, KY 40507.

Bid/RFP/Quote # 107-2014

Total Contract Amount Awarded to Prime Contractor for this Project As Needed

Project Name/ Contract # LFUCG Unit Price Contract	Work Period/ From: To:
Company Name: A S L Excavating Inc	Address: P O Box 321 Flemingsburg KY 41041
Federal Tax ID: 61-1306961	Contact Person: Gary Shannon

Subcontractor Vendor ID (name, address, phone, email	Description of Work	Total Subcontract Amount	% of Total Contract Awarded to Prime for this Project	Total Amount Paid for this Period	Purchase Order number for subcontractor work (please attach PO)	Scheduled Project Start Date	Scheduled Project End Date

By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentations may result in the termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims.

A S L Excavating Inc
Company

Gary Shannon
Company Representative

8/22/14
Date

President
Title

13. **STATEMENT OF EXPERIENCE**

NAME OF INDIVIDUAL: Gary Shannon

POSITION/TITLE: President / Estimator

STATEMENT OF EXPERIENCE: Started ASL in 1996 - serves as president & estimator since conception. Previous field experience with Shannon & Hurd Construction for 20+ years.

NAME OF INDIVIDUAL: Steve Allen

POSITION/TITLE: Vice President / Field Supervisor

STATEMENT OF EXPERIENCE: Owner/Operator of Allen's Dozer Service since early 1980's. He has been field supervisor/dozer operator for ASL since 1996

NAME OF INDIVIDUAL: Larry Leadingham

POSITION/TITLE: Corporate Secretary / Field Supervisor

STATEMENT OF EXPERIENCE: He has 20+ years experience in highway construction. He has been with ASL since 1998 serving as field supervisor

NAME OF INDIVIDUAL: Henry Cropper

POSITION/TITLE: Superintendent

STATEMENT OF EXPERIENCE: He has been with ASL since 1998 as a field supervisor. He has over 30 yrs. experience in grade and drain.

NAME OF INDIVIDUAL: Georgia Cropper

POSITION/TITLE: Office Manager

STATEMENT OF EXPERIENCE: She has taken care of office since conception of company since 1996. in A/P / A/R / Job costing, Payroll, Accounting, etc.

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.)

11. LFUCG STATEMENT OF GOOD FAITH EFFORTS

See note in Part II.20, Information for Bidders regarding UPC bidding.

Bid/RFP/Quote # 107-2014

By the signature below of an authorized company representative, we certify that we have utilized the following methods to obtain the maximum practicable participation by minority and women owned business enterprises on the project. Please indicate which methods you used by placing an X in the appropriate place.

____ Attended LFUCG Central Purchasing Economic Inclusion Outreach Event

____ Sponsored Economic Inclusion event to provide networking opportunities

____ Requested a list of MBE/WBE subcontractors or suppliers from LFUCG Economic Engine

____ Advertised for MBE/WBE subcontractors or suppliers in local or regional newspapers

____ Showed evidence of written notice of contracting and/or supplier opportunities to MBE/WBE firms at least seven days prior to the bid opening date

____ Provided copies of quotations submitted by MBE/WBE firms which were not used and/or responses from firms indicating they would not be submitting a quote

____ Provided plans, specifications, and requirements to interested MBE/WBE subcontractors

__✓__ Other

Please list any other methods utilized that aren't covered above.

solicited unit prices over phone

The undersigned acknowledges that all information is accurate. Any misrepresentations may result termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

ASL Excavating Inc
Company

✓ Gary Shannon
Company Representative

8/22/14
Date

President
Title

12. **AUTHENTICATION OF BID AND STATEMENT OF NON-COLLUSION, NON-CONFLICT OF INTEREST**

I hereby swear (or affirm) under the penalty for false swearing:

1. That I am the Bidder (if the Bidder is an individual), a partner of the Bidder (if the Bidder is a partnership), or an officer or employee of the bidding corporation having authority to sign on its behalf (if the Bidder is a corporation);

2. That the attached bid has been arrived at by the Bidder independently, and has been submitted without collusion with, and without any agreement, understanding or planned common course of action, with any other contractor, vendor of materials, supplies, equipment or services described in the Invitation to Bid, designed to limit independent bidding or competition;

3. That the contents of the bid or bids have not been communicated by the Bidder or its employees or agents to any person not an employee or agent of the Bidder or its surety on any bond furnished, with the bid or bids, and will not be communicated to any such person, prior to the official opening of the bid or bids;

4. That the Bidder is legally entitled to enter into the contracts with the Lexington-Fayette Urban County Government, and is not in violation of any prohibited conflict of interest;

5. (Applicable to corporation only) That as a foreign corporation, we are registered with the Secretary of State, Commonwealth of Kentucky, and authorized to do business in the State _____ or, that as a domestic corporation, we are in good standing with the Secretary of State, Commonwealth of Kentucky ✓. Check the statement applicable.

6. In submitting the above, it is expressly agreed that, upon proper acceptance by the Lexington-Fayette Urban County Government of any or all items bid above, a contract shall thereby be created with respect to the items accepted.

7. That I have fully informed myself regarding the accuracy of the statements made in this statement.

8. That I certify that Subcontractors have not and will not be awarded to any firm(s) that have been debarred from noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 As Amended, Executive Order 11246 As Amended or any other Federal Law.

A S L Excavating Inc
Company

✓ Gary Shannon
Company Representative

8/27/14
Date

President
Title

14. 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.

√ Gary Shanno — ASL Excavating Inc.

Signature — 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.

15. EQUAL EMPLOYMENT OPPORTUNITY AFFIRMATIVE ACTION POLICY

It is the policy of ASL Excavating Inc 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.

16. WORKFORCE ANALYSIS FORM

Name of Organization: A S L Excavating Inc Date: 8 / 22 / 14

Categories	Total	White		Black		Other		Total	
		M	F	M	F	M	F	M	F
Administrators									
Professionals									
Superintendents	1	1						1	
Supervisors	3	3						3	
Foremen									
Technicians									
Protective Service									
Para-Professionals									
Office/Clerical	1		1						1
Skilled Craft	14	14						14	
Service/Maintenance									
Total:	19	18	1					18	1

Prepared By: Georgia Cropper

17. EVIDENCE OF INSURABILITY

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

Names Insured: ASL Excavating Inc

Address: PO Box 321 Flemingsburg KY 41041

Employee ID:

Phone: 606-849-4511

Project to be insured: LFUCG Unit Price Contract

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	A.M. Best's Rating
SC-3, Section 2, Part 4.1 – see provisions	CGL	$1.000,000 per occ. And $2,000,000 aggregate	$1,000,000 ea occ. $2,000,000 agg*	Secura	000483	A
SC-3, Section 2. Part 4.1 – see provisions	AUTO	$2,000,000/per occ.	$1,000,000 ea acc. *	Secura	000483	A
SC-3, Section 2. Part 4.1 – see provisions	WC	Statutory w /endorsement as noted	$1,000,000 EL	Ky Employers Mutual	011781	A-
	* UMBRELLA		$5,000,000	Secura	000483	A

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.

Assured Peace Lukens
Agency or Brokerage

2416 Sir Barton Way Ste. 300
Street Address

Lexington Ky. 40509
City State Zip

859-543-1716
Telephone Number

DAVID KENDRICK
Name of Authorized Representative

VICE PRESIDENT
Title

David Kendrick
Authorized Signature

8/21/14
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.

19. DEBARMENT CERTIFICATION

All contractors/subcontractors shall complete the following certification and submit it with the bid proposal.

The contractor/subcontractor certifies in accordance with Executive Order 12549 (Debarment and Suspension 2/18/86) that to the best of its knowledge and belief, that it and its principals:

1) Are not presently debarred, suspended, proposed for debarment, declared negligible, or voluntarily excluded from covered transactions or contract by any Federal department or agency for noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 as amended, Executive Order 11246 as amended or any other Federal law;

   a) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

   b) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(a) of this certification; and

   c) Have not within a three year period preceding this bid has one or more public (Federal, State or local) transactions or contracts terminated for cause or default.

2) Where the contractor is unable to certify to any of the statements in this certification, such prospective contractors shall attach an explanation to this certification form.

Firm Name: A S L Excavating Inc

Project: 2014 Construction Unit Price Contract

Printed Name and Title of Authorized Representative: Gary Shannon, President

Signature: ✓Gary Shannon

Date: 8/22/14

END OF SECTION

Lexington-Fayette Urban County Government
DEPARTMENT OF FINANCE & ADMINISTRATION

Jim Gray
Mayor

William O'Mara
Commissioner

ADDENDUM #1

Bid Number: **#107-2014**

Date: August 6, 2014

Subject: Construction Unit Price Contract

Please address inquiries to:
Theresa Maynard (859) 258-3320

TO ALL PROSPECTIVE BIDDERS:

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

Revising bid due date on Economic Engine only; the correct date is Monday, August 25th, as on the bid documents and on the Lynn Imaging website.

Todd Slatin, Director
Division of Central Purchasing

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

COMPANY: A S L EXCAVATING INC.
P.O. Box 321
Flemingsburg, KY 41041
606-849-4511

ADDRESS: _____

SIGNATURE OF PROPOSER: ✓ Gary Shannon

PART IV

GENERAL CONDITIONS

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DETAILED TABLE OF CONTENTS OF GENERAL CONDITIONS

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- 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 unit prices for a contract with the OWNER, for the Work elements described in the proposed Contract Documents.

1.6 Bonds
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 with 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 Inspector

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

1.20 Laws and Regulations

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

1.21 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.

1.22 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.

1.23 OWNER

The Lexington-Fayette Urban County Government.

1.24 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.

1.25 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.

1.26 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 two 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 LFUCG's 10% minimum DBE goals.

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 any 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 ENGINEERS 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 or 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. Monthly progress payments shall be ninety (90) percent of the sum obtained by applying the respective bid unit prices to the approved estimated quantities of work completed by the Contractor during the preceding month. The remaining ten (10) percent will be held by the Owner, as retainage. Reductions to the percent of retainage will occur in accordance with the state statues. At such time as the Engineer deems appropriate - based on the quality of work performed, progress of cleanup, and other pertinent factors - the rate of retainage, or the total amount retained, may be reduced below the statutory requirement; although, any further reduction in retainage is made solely at the Engineer's discretion. All remaining retainage held will be included in the final payment to the Contractor.

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.

13.9 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 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 declamatory judgment action in Fayette Circuit Court, to be presently engaging in an unlawful practice, as hereinafter defined. Such declamatory 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

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1. BLASTING

Blasting shall not be allowed under this Contract.

2. CONTRACTORS' PERFORMANCE

If the CONTRACTOR refuses to perform on any two (2) consecutive projects or on any three (3) total projects, the CONTRACTOR may be removed from the list of CONTRACTORS considered for unit price contracts. Furthermore, the CONTRACTOR may be subsequently jeopardizing awarding of projects in the future.

3. ASBESTOS CONCRETE PIPE PROVISIONS

The CONTRACTOR shall take precautions when working near existing asbestos concrete water mains. Work near these facilities shall be coordinated with Kentucky American Water Company and any disturbance of asbestos concrete material shall be in accordance with federal, state and local requirements.

4. 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.

5. KY DIVISION OF WATER/EPA PERMITS

Contractor shall prepare and file the Notice of Intent, the Notice of Termination, and prepare and maintain the BMP (Best Management Practices) and SWPP (Storm Water Pollution Prevention) Plans. Payment shall be as described in the Technical Specifications, and per the *Table of Incremental Costs for Mobilization and Additional Services*, provided in Part III, *Form of Proposal*, of this Contract Document (immediately following the Bid Schedule).

6. PAYMENT FOR COST OF PERFORMANCE AND PAYMENT BONDS ON CAPITAL PROJECTS

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.

7. REQUIRED RISK MANAGEMENT PROVISIONS

7.1 GENERAL

The CONTRACTOR understands and agrees that the Risk Management Provisions of this Contract define the responsibilities of the CONTRACTOR to the OWNER.

As used in these Risk Management Provisions, the terms "CONTRACTOR" and "OWNER" shall be defined as follows:

a. CONTRACTOR means the contractor and its employees, agents, servants, owners, principals, licensees, assigns and subcontractors of any tier.

b. OWNER means the Lexington-Fayette Urban County Government and its elected and appointed officials, employees, agents, Boards, consultants, assigns, volunteers and successors in interest.

7.2 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.

7.3 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.

7.4 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:

Coverage	**Limits**
General Liability (Insurance Services Office Form CG 00 01)	$1 million per occurrence, $2 million aggregate or $2 million combined single limit
Commercial Automobile Liability (Insurance Services Office Form CA 0001)	combined single, $1 million per occurrence
Worker's Compensation	Statutory
Employer's Liability	$500,000.00

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 and a Products Liability endorsement unless it is deemed not to apply by LFUCG.

d. The General Liability Policy shall include a Pollution Liability endorsement unless it is deemed not to apply by LFUCG.

e. The General Liability Policy shall include an XCU endorsement unless it is deemed not to apply by LFUCG.

f. 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.

g. 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.

7.5 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.

PART VI

CONTRACT AGREEMENT

INDEX

PART VI

CONTRACT AGREEMENT

THIS AGREEMENT, made on the 9th day of October, 2014, by and between **Lexington-Fayette Urban County Government**, acting herein called "OWNER" and **ASL Excavating Inc.**, doing business as a corporation located in the City of **Flemingsburg**, County of **Fleming**, and State of **Kentucky**, hereinafter called "CONTRACTOR."

WITNESSETH: That the CONTRACTOR and the OWNER in consideration of **Contract Unit Prices** quoted in the proposal by the CONTRACTOR, dated **August 25, 2014**, 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 therefor as prepared by the ENGINEER for the Work Sites and Work subsequently identified by the OWNER and accepted by the CONTRACTOR.

2. TIME OF COMPLETION

The time period estimated and authorized by the OWNER for completion of the Work by the CONTRACTOR shall be that time period specified by an individual Purchase Order and Contract Agreement for each individual Work Site, adjusted as provided by the General Conditions. Commencement of the work and time to completion shall be as stated in the Contract Agreement.

Contract Agreement to be completed for each individual Project:

For the **To be Determined** Project 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 **To Be Determined (TBD)** calendar days. The time shall begin ten (10) days after the date specified in the Notice to Proceed with the Work. Failure to complete project within this time frame will obligate the OWNER to execute Liquated Damages as described in Section 8 of this Agreement.

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. 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. 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.

6. ACCEPTANCE AND FINAL PAYMENT

Final payment shall be due within sixty (60) 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.

7. THE CONTRACT DOCUMENTS

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

8. LIQUIDATED DAMAGES

It is mutually agreed by and between the parties hereto that time is of the essence when constructing projects under 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 TWO HUNDRED FIFTY DOLLARS ($250.00) per calendar day of such delay, or the sum as specified by the Section 108, KDOH Standard Specifications, current edition. 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 relet the Work involved.

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 SPECIFICATIONS AND DRAWINGS (CONTRACT DOCUMENTS):

CONTRACT DOCUMENTS AND SPECIFICATIONS

SECTION NO.	TITLE	PAGES
I	Advertisement for Bids	AB 1 thru 4
II	Information for Bidders	IB 1 thru 14
III	Form of Proposal	P 1 thru 48
IV	General Conditions	GC 1 thru 50
V	Special Conditions	SC 1 thru 8
VI	Contract Agreement	CA 1 thru 5
VII	Performance and Payment Bonds*	PB 1 thru 7
VIII	Technical Specifications	TS 1 thru 126
IX	Addenda	AD 1 thru 1

Appendix A	(68) LFUCG Standard Drawings
Appendix B	(12) LFUCG Erosion and Sediment Control Standard Drawings
Appendix C	(34) KDOH Standard Drawings

* Standard Performance and Payment Bond forms are included in this Contract Book. Bonds will be obtained on a per-project basis as required by the contract documents.

PLAN DRAWINGS

Plan Drawings will be provided at the option of the Owner for specific Work Sites.

11. AGREEMENT OF PARTIES

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: Jim Gray

Jim Gray

(Witness)

MAYOR
(Title)

(Seal)

ASL Excavating, Inc.
(Contractor)

(Secretary)*

BY: Gary Shannon

(Witness)

President
(Title)

1692 Mockingbird Hill, Flemingsburg, KY 41041
(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.

ASLEXCA-01 AWHATTENBARGER

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 10/27/2014

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 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 rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Lexington/ Assured Neace Lukens Insurance Agency Inc
2416 Sir Barton Way, Suite 300
Lexington, KY 40509

CONTACT NAME: Ashley Whattenbarger
PHONE (A/C, No, Ext): (859) 543-1716 FAX (A/C, No): (859) 543-1987
E-MAIL ADDRESS: ashley.whattenbarger@neacelukens.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Secura Insurance A Mutual Company	22543
INSURER B : Kentucky Employers Mutual Insurance	10320
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
ASL Excavating, Inc.
P.O. Box 321
Flemingsburg, KY 41041

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	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE [X] OCCUR X Blanket Addl Insd GEN'L AGGREGATE LIMIT APPLIES PER: POLICY [X] PRO-JECT [ ] LOC OTHER:	X		20CP003184503	10/15/2014	10/15/2015	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG EMPLOYEE BENEFI	$ 1,000,000 $ 100,000 $ 10,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $ 2,000,000
A	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS HIRED AUTOS NON-OWNED AUTOS			20A003184504	10/15/2014	10/15/2015	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
A	X UMBRELLA LIAB [X] OCCUR EXCESS LIAB CLAIMS-MADE DED [X] RETENTION $ 10,000			20CU003184505	10/15/2014	10/15/2015	EACH OCCURRENCE AGGREGATE	$ 5,000,000 $ 5,000,000
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N [ ] (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		377809	10/15/2014	10/15/2015	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000
A	Equipment Floater Directors & Officers			20CP003184503 82108881	10/15/2014 10/15/2014	10/15/2015 10/15/2015	Leased & Rented	500,000 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Lexington Fayette Urban County Government is listed as Additional Insured with respect to General Liability on a primary and non-contributory basis for operations and completed operations.
XCU coverage is not excluded from the General Liability policy.
Pollution coverage:
Policy #: 20-CP-003184503
Effective: 10/15/14 to 10/15/15
$100,000 Each Pollution Event Limit
SEE ATTACHED ACORD 101

CERTIFICATE HOLDER
Lexington Fayette Urban County Government
Division of Inspection
Contractors Registration
200 E Main St Ste 925
Lexington, KY 40507

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
David Keck

AGENCY CUSTOMER ID: ASLEXCA-01 AWHATTENBARGER

LOC #: 0

ADDITIONAL REMARKS SCHEDULE

AGENCY		NAMED INSURED
Lexington/ Assured Neace Lukens Insurance Agency Inc		ASL Excavating, Inc. P.O. Box 321 Flemingsburg, KY 41041
POLICY NUMBER		
SEE PAGE 1		
CARRIER	NAIC CODE	EFFECTIVE DATE: SEE PAGE 1
SEE PAGE 1	SEE P 1	

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,

FORM NUMBER: ACORD 25 FORM TITLE: Certificate of Liability Insurance

Description of Operations/Locations/Vehicles:
$100,000 Aggregate Limit
$2,500 deductible each Pollution Event

PART VIII

TECHNICAL SPECIFICATIONS

TABLE OF CONTENTS

TECHNICAL SPECIFICATIONS

SECTION A - 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 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 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.

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 incidental 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

From time to time during the progress of the Work, the ENGINEER may require that testing be performed to determine the materials provided meet the specified requirements. The Lexington-Fayette Urban County Government will select a testing laboratory to perform the testing services. The cost of such services 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

Work on these Projects shall generally be restricted to daylight hours, but may be further 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. and 3:00 p.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 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.

A.18 DIVERSION OF STORM WATER

Appropriate measures must be taken to sandbag the necessary manholes and to divert drainage around the area under construction, including the use of pumps if necessary. The CONTRACTOR is responsible for developing a plan to divert storm drainage around the construction area with the approval from the ENGINEER. Materials, labor, and all incidentals necessary to accomplish this diversion of storm drainage will be considered incidental to the contract unless noted otherwise in Section 41 of these Specifications.

A.19 SEWER SERVICE MAINTENANCE

This Work shall consist of maintaining existing sanitary sewer service to residents in the area during construction. Sewage is to be maintained by whatever means necessary, with the exception of unavoidable short-term disconnections during sewer replacement. No surcharge of manholes causing a sewer back-up into a property will be allowed.

With the exception of approved sewer by-pass pumping as noted in Section 35 of these Specifications, no separate payment will be made for Sewer Service Maintenance. Sewer Service Maintenance shall include all materials, equipment and labor necessary to maintain sewer service to residents during construction.

A.20 EROSION AND SEDIMENT CONTROL

This work as described in Section 5.17 of the General Conditions shall involve preparation of a Stormwater Pollution Prevention Plan,(SWPP) a Notice of Intent (NOI-SWCA), a Notice of Termination (NOT), and a Land Disturbance Permit (LDP). Preparation of these documents shall be the responsibility of the Contractor.

Payment for preparation of the SWPP, the NOI and NOT will only be paid when the Work specifically requires a these documents. Payment will be in accordance with the *Table of Incremental Costs for Mobilization and Additional Services*, provided in Part III, *Form of Proposal*, of this Contract Document (immediately following the Bid Schedule).

Payment for the LDP will be incidental to the cost of other work performed under the UPC contract. Other related permits, such as a Stream Encroachment Permit, Water Quality Certification, and/or USACE permits, shall be obtained by the LFUCG as needed.

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 and traffic signs subject to the approval of the Lexington-Fayette Urban County Government Traffic Engineer prior to the beginning of Work. All bus routes shall remain in operation during scheduled bus operating hours. Loading zone space shall be made available as necessary during normal business hours. At least one lane of traffic shall be maintained on all cross streets.

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.

B.4 APPLICABLE KENTUCKY DEPARTMENT OF HIGHWAYS (KDOH) STANDARD SPECIFICATIONS

To the extent that it does not conflict with the content of the Plans, Contract Documents, and Specifications, Subsection 112 of KDOH Standard Specifications, current edition, is incorporated into this Technical Specification.

B.5 MEASUREMENT AND PAYMENT

Additional payment for the maintenance of traffic will only be paid when measures such as lane blockages, detours, or flagging of traffic are required to accomplish Work. Payment will be in accordance with the *Table of Incremental Costs for Mobilization and Additional Services*, provided in Part III, *Form of Proposal*, of this Contract Document (immediately following the Bid Schedule).

TECHNICAL SPECIFICATIONS

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 repaired or replaced in an acceptable manner. All ditches in the area of the Work shall be drained and areas affected by the Work 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. Retainage will be withheld until ENGINEER approves final cleanup.

TECHNICAL SPECIFICATIONS

SECTION 1 - CONSTRUCTION STAKING

1.1 SCOPE

The CONTRACTOR shall furnish and be responsible for all staking (including initial staking), necessary to control and complete the Work per the specifications and in accordance with the lines and grades shown on the plans,

The CONTRACTOR shall establish a survey baseline, or if one has been previously established, the CONTRACTOR may elect to field-verify and adopt the existing baseline. Should, prior to beginning Work on the project, all or part 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 offset 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 Licensed Professional 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.

1.2 PAYMENT

Additional payment for Construction Staking will only be paid when the Work specifically requires a precise layout by a surveyor. Payment will be in accordance with the *Table of Incremental Costs for Mobilization and Additional Services*, provided in Part III, *Form of Proposal*, of this Contract Document (immediately following the Bid Schedule).

TECHNICAL SPECIFICATIONS

SECTION 2 - CLEARING AND GRUBBING

2.1 SCOPE

This item includes the clearing and grubbing of any small trees, stumps, brush, bushes, cement concrete and/or stone masonry, steps, walls, and structures within the construction limits not otherwise removed by the excavation and grading operations or included in the summary 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 laws and local ordinances regarding disposal and/or burning of such materials. Trees, shrubbery, fences, retaining walls, and other such items not specifically noted on the plans to be removed or saved in place, or not shown on the plans, but suspected of being within the project construction limits shall not be disturbed until so directed by the ENGINEER. 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 street 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 shall be utilized or disposed of in the general area from which it came in a manner directed 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 re-use same on his private property, the CONTRACTOR shall carefully remove and store on this property owner's property for his 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.

Separate sections of these technical specifications make provisions for excavation and for designated removal of individual trees; curb and gutter; sidewalks; entrance pavements; and bituminous concrete, and portland cement pavements. Where appropriate, separate items for these features will be included in the Purchase Order for the Work Site.

2.2 MEASUREMENT AND PAYMENT

Designated tree removal shall be paid for on a per tree basis as indicated by Section 7. Clearing and Grubbing shall be incidental to each Work Site unless otherwise stated in the Purchase Order.

TECHNICAL SPECIFICATIONS

SECTION 3 - EARTHWORK

3.1 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.

3.2 MATERIALS

All material removal shall be classified unless otherwise noted on Plans or written project description. This includes removal of all pavements, curbs, gutters, pipes, concrete and bituminous driveway entrances, and concrete sidewalks. It is anticipated that the majority of material to be removed will consist of a mixture of unconsolidated soil and rock, which generally will be classified as Common Excavation.

Common Excavation includes a variety of material that can be effectively excavated with various bucket, blade, and ripper equipment ranging from light for some materials to heavy for other materials.

Rock Excavation is effective excavation of rock. Rock generally is material intact in a geological formation which, for effective excavation must first be broken with explosives or alternately, with drills, jack hammers, heavy hoe rams, rock trenchers, heavy single-tooth rippers or other high impact equipment. Contractor shall refer to Section 5, *Rock Excavation (Mechanical).*

It is anticipated that most rock encountered in the Unit Price Contract setting will be sound, relatively hard limestone. Removing limestone that is highly weathered and broken in place to a degree that it can be effectively excavated with normal earth digging equipment (e.g., excavator, backhoe, etc.) will not be classified as Rock Excavation.

The determination of classification of excavation, except where all excavation is unclassified, will be made by the ENGINEER, as provided by Section 8 of the General Conditions, after careful consideration of facts.

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 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 for additional payment if the materials are not in accord with the classification shown.

For embankments, 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 4 inches in any dimension will be allowed in the top 12 inches beneath the finished elevation.

3.3 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. Once the surfaces have been shaped to the proper template and compacted to the satisfaction of the ENGINEER and in accordance with the current edition of the Kentucky Department of Highways Standard Specifications, they 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 of removal to points of 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 of 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. CONTRACTOR is to obtain grading permit, if applicable for disposal site.

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.

3.4 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 (separate pay item as per Section 7) below the base coarse 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.

3.5 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.

3.6 CONSTRUCTION TOLERANCES

The CONTRACTOR shall make every reasonable effort to construct the project uniformly. Tolerances, which will be allowed, before changes in the quantities to be paid will be made or before reworking of the constructed item is required, shall comply with the KDOH Standard Specifications, Section 204, 207 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.

3.7 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, and 211 of KDOH Standard Specifications, current edition, are incorporated into this Technical Specification.

3.8 MEASUREMENT AND PAYMENT FOR EXCAVATION

Payment for Excavation shall be for the quantity indicated by the plans and/or Purchase Order unless the ENGINEER authorizes changes in Excavation. Approved changes will be measured using approved lines and grades.

The accepted quantities thus measured will be paid for at the Contract Unit Price per cubic yard for Excavation and shall be full compensation for all labor, equipment, and incidentals necessary to complete the Work, in place, ready for use.

3.9 EMBANKMENT

The Work shall consist of forming embankments with materials from sources indicated on the Plans or from other approved sources in accordance with these Specifications, to conform to the lines, grades, and cross-sections specified. The Work shall be performed in accordance with Kentucky Department of Highways Standard Specifications for Road and Bridge Constructions, Current Edition, Section 206.

3.10 MEASUREMENT AND PAYMENT FOR EMBANKMENT

Payment for Embankment shall be for the quantity indicated by the plans and/or Purchase Order unless the ENGINEER authorizes changes in Embankment. Approved changes will be measured using approved lines and grades.

The accepted quantities thus measured will be paid for at the Contract Unit Price per cubic yard for Embankment and shall be full compensation for all labor, equipment, and incidentals necessary to complete the Work, in place, ready for use.

TECHNICAL SPECIFICATIONS

SECTION 4 – THIS SECTION RESERVED

TECHNICAL SPECIFICATIONS

SECTION 5 - ROCK EXCAVATION (MECHANICAL)

5.1 SCOPE

Work under this Section shall be accomplished by accepted methods of either drilling, jack hammering, hoe ramming, rock trenching, single-tooth ripping, or using other high-impact equipment to remove rock in areas where blasting is not acceptable as determined by the ENGINEER. Any property damage caused by operations under this section is the responsibility of the CONTRACTOR. All Work under this Section is to be completed as defined in the Kentucky Department of Highways Standard Specifications.

5.2 BASIS OF PAYMENT

Accepted quantities for Rock Excavation (Mechanical) will be made at the Contract Unit Price as quoted (which shall be full compensation for all Work required under this Section) and paid per cubic yard of Rock Excavation (Mechanical) satisfactorily completed. Classification of excavation will be as described in Section 3. Work under this Section shall include all labor, materials, equipment, removal and disposal of loose rock, and incidentals necessary to complete the Work.

TECHNICAL SPECIFICATIONS

SECTION 6 – REMOVE CONCRETE AND MISC ITEMS

(REMOVE PORTLAND CEMENT CONCRETE PAVEMENT, SIDEWALKS, ENTRANCE PAVEMENT, BITUMINOUS CONCRETE PAVEMENT, CURB AND GUTTER, PIPE, FENCE, OR HEADWALLS AND INLET STRUCTURES)

6.1 SCOPE

Work will consist of the removal of Portland Cement Concrete Pavement, Sidewalks, Entrance Pavement, Bituminous Concrete Pavement, Curb and Gutter, Pipe, Fence and Headwall and Inlet Structures (dimensions as specified in the Purchase Order). Work for this Section shall conform to the Kentucky Department of Highways Standard Specifications, Section 203, current edition, and shall include all labor, materials (including base and DGA), equipment, excavation, disposal (hauling and tipping fees), saw-cutting and incidentals necessary to complete Work. Removal areas will terminate at fully sawed joint faces. All materials shall be disposed of off site at an approved location and in an acceptable manner.

6.2 BASIS OF PAYMENT FOR THE REMOVAL OF PORTLAND CEMENT CONCRETE PAVEMENT, SIDEWALK, ENTRANCE PAVEMENT, AND BITUMINOUS CONCRETE PAVEMENT

Accepted quantities for Removal of Portland Cement Concrete Sidewalk, Entrance Pavement, and Bituminous Concrete Pavement will be paid for at the Contract Unit Price as quoted for each item (which shall be full compensation for all Work under this Section) and paid per square yard of the specified item satisfactorily removed. All labor, materials (including base and DGA), excavation, disposal and equipment shall be incidental to the removal of Portland Cement Concrete Pavement, Sidewalk, Entrance Pavement, and Bituminous Concrete Pavement.

6.3 BASIS OF PAYMENT FOR THE REMOVAL OF CURB AND GUTTER

Accepted quantities for Removal of Curb and Gutter and Pipe 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 linear foot satisfactorily removed. All labor, materials, excavation, disposal and equipment shall be incidental to the removal of Curb and Gutter and Pipe.

6.4 BASIS OF PAYMENT FOR THE REMOVAL OF PIPE

Accepted quantities for Removal of Pipe up to eight (8) feet deep 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 linear foot satisfactorily removed. All labor, materials, excavation, disposal and equipment shall be incidental to the removal of Pipe. Pipe deeper than eight (8) feet deep payment will also include Excavation as a pay item.

6.5 BASIS OF PAYMENT FOR THE REMOVAL OF FENCE

Accepted quantities for Removal of Fence (chain link, woven wire fence, wood, iron, etc.) 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 linear foot satisfactorily removed. All labor, materials, excavation, disposal and equipment shall be incidental to the removal of fence.

6.6 BASIS OF PAYMENT FOR THE REMOVAL OF HEADWALL AND INLET STRUCTURES

Accepted quantities for Removal of Headwalls and Inlet Structures 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 removed. All labor, materials, excavation, disposal and equipment shall be incidental to the removal of Headwall and Inlet structures.

TECHNICAL SPECIFICATIONS

SECTION 7 - REMOVAL OF TREES AND STUMPS

7.1 SCOPE

Tree removal consists of removing trees marked for removal. Work for this Section shall include all labor, materials, equipment, and incidentals necessary to complete the Work.

Grinding and removal of stumps and roots is required unless substituted for grubbing with approval of the ENGINEER. When grinding is utilized, wood residue will be totally removed and replaced with approved, compacted topsoil. All stumps shall be ground to a depth that severs the roots from the main root mass or to a minimum depth of ten inches from finished or original grade (whichever is deeper). All holes resulting from the removal of stumps shall be backfilled by the end of the daily work period.

7.2 MEASUREMENT

Tree measurements shall be based on the diameter breast high (DBH). DBH is measured outside bark, 4.5 feet above ground on the uphill side of the tree. If there is some irregularity about the tree, such as a protruding knot or ring of knots, swelling, forking or other deformity, DBH must be taken at another point. Generally, the point of measurement is moved higher on the tree trunk, to a point where the deformity is no longer affecting the measurement.

7.3 BASIS OF PAYMENT

Accepted quantities for the Removal of Trees and Stumps will be paid for at the Contract Unit Price as quoted for various sizes (which shall be full compensation for all Work required under this Section) and paid per each item, as specified on the Purchase Order, which is satisfactorily removed. No separate payment will be made for trees less than 5 inches in diameter. All labor, materials, disposal (hauling and tipping fees) and equipment shall be incidental to Tree Removal.

TECHNICAL SPECIFICATIONS

SECTION 8 - DENSE GRADED AGGREGATE

8.1 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 109, 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, and LFUCG Standard Drawings. 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 representative.

(4) Initial testing will be provided by the OWNER; any necessary re-testing 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 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.

8.2 PAYMENT

Accepted quantities for Dense Graded Aggregate 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 Dense Graded Aggregate satisfactorily placed. Payment shall be based on weight tickets for Dense Graded Aggregate delivered and accepted for the work. All labor, materials (other than the Dense Graded Aggregate), delivery, equipment, and excavation shall be incidental to the placement of Dense Graded Aggregate.

TECHNICAL SPECIFICATIONS

SECTION 9 - CRUSHED STONE

9.1 SCOPE

All Work for this Section shall consist of furnishing and placing commercially available Crushed Stone aggregate in sizes and locations as determined by the ENGINEER and shall include all labor, materials, equipment, excavation, compaction, and incidentals necessary to complete the Work in place, ready for use and constructed in conformance with KDOH Standard Specifications.

No. 2's meeting the requirements of KDOH Section 805 should be used for locations as determined by the Engineer and shall include all labor, materials, equipment, excavation, and incidentals necessary to complete the Work in place, ready for use and constructed in conformance with KDOH Standard Specifications. No. 2 Stone meeting the requirements of KDOH Section 805 can be used for stabilizing sub-grade and pavement base etc.

Where soft, undesirable soil material is encountered at or below desired sub-grade elevation, undesirable material will be removed and/or bridged to develop a sufficient platform to support compaction of DGA. The depth and extent of this work shall be determined based on conditions observed and performance of compaction equipment on the sub-grade. Work shall be directed by the Engineer.

Stone will be dumped or pushed into place and walked in until support is developed for heavy equipment. The ultimate test will be the ability to provide an adequate compaction platform for the DGA base.

No. 9's and No. 57's meeting the requirements of KDOH Section 805 should be used for stabilizing subgrade and pavement base, trench backfill, in areas of undercut, as backfill in areas of pavement restoration, or pipe bedding not incidental to pipe as a pay item.

9.2 PAYMENT

Accepted quantities for No. 2's will be paid for at the respective Contract Unit Price as quoted (which shall be full compensation for all Work required under this Section) and paid per ton of stone. No direct measurement shall be made. Payment shall be based on weight tickets for stone delivered and accepted for the work. All labor, materials (other than No. 2 Stone), equipment, proof testing, excavation and disposal of excavated material shall be incidental to the placement of No. 2 Stone.

Accepted quantities for No. 9's and No. 57's will be paid for at the respective Contract Unit Price as quoted (which shall be full compensation for all Work required under this Section) and paid per ton of Crushed Stone satisfactorily placed. Payment shall be based on weight tickets for stone delivered and accepted for work. All labor, materials (other than the Crushed Stone), equipment, and excavation shall be incidental to the placement of Crushed Stone.

TECHNICAL SPECIFICATIONS

SECTION 10 - STEEL REINFORCEMENT FOR CONCRETE

10.1 SCOPE

Work for this Section shall conform to the Kentucky Department of Highways Standard Specifications, Section 602, current edition and shall include all labor, materials, equipment, and incidentals necessary to complete Work.

10.2 BASIS OF PAYMENT

Accepted quantities of Steel Reinforcement for Concrete will be paid for at the Contract Unit Price (which shall be full compensation for all Work under this Section) and paid per pound of reinforcing steel satisfactorily furnished and placed. All labor, materials (other than the steel reinforcement), and equipment shall be incidental to the placement of Steel Reinforcement for Concrete.

TECHNICAL SPECIFICATIONS

SECTION 11 - FORMED CLASS A CONCRETE AND UNFINISHED CONCRETE

11.1 SCOPE

Formed Class A Concrete and Unfinished Concrete for encasement, capping trenches, fill for cavities or voids and mass footings shall conform to the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, Section 601, Current Edition, and shall include all labor, materials, equipment and incidentals necessary to complete the Work.

Dimensions of Formed Class A Concrete or Unfinished Concrete are to be as specified by the Purchase Order.

11.2 BASIS OF PAYMENT

Accepted quantities for Formed Class A or Unfinished Concrete 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 cubic yard of specified concrete satisfactorily placed and accepted. All labor, materials, and equipment shall be incidental to the placement of Class A Concrete and Unfinished Concrete.

Formed A Concrete and Unfinished Concrete is bid in two (2) categories. Less than 10 cubic yards and greater than 10 cubic yards.

TECHNICAL SPECIFICATIONS

SECTION 12 - CONCRETE SIDEWALK (4½" AND 6")

12.1 SCOPE

This Work consists of the construction of sidewalks (dimensions as specified by the Purchase Order) on a thoroughly compacted subgrade 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 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.

Sidewalk within the neat lines of an entrance shall be considered part of the entrance with regard to construction requirements and also measurement and payment. The entire entrance from inside curb edge through the transition to original driveway shall be completed in continuous pour unless approved otherwise by the ENGINEER.

Subgrade shall be thoroughly compacted. Soft or unsuitable subgrade shall be excavated and replaced with compacted No. 57 stone. At the discretion of the Engineer, Contractor shall place a 4" thick subbase of No. 57 stone on top of compacted subgrade and shall strike and mechanically compact the stone to produce a uniform flat surface.

Expansion joints shall be placed at 32-foot intervals. Expansion joint material shall be of approved quality and of one-half (½) 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.

Concrete shall be sufficiently vibrated to assure removal of air voids. Concrete sidewalks shall be struck off by use of a screed, and they shall be floated and brushed. 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 three-fourths (3/4) inch in depth, at four foot intervals, or as indicated on the Plans.

When it is necessary to replace portions of existing concrete sidewalks and entrance pavements, such existing features 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.

All concrete used shall be Class A concrete on which Type 2 (white pigmented) curing compound is used (clear curing compound will be required in Historic Districts). 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 4 ½ inch and 6 inch Concrete Sidewalk shall be paid for at their respective Contract Unit Prices as quoted (which shall be full compensation for all Work required under this Section) and paid per square yard of specified Concrete Sidewalk satisfactorily placed. All labor, materials, equipment, subgrade compaction, excavation and backfill shall be incidental to the placement of 4 ½ inch and 6 inch Concrete Sidewalks.

Accepted quantities for No. 57's will be paid for at the respective Contract Unit Price as quoted (which shall be full compensation for all Work required under this Section) and paid per ton of Crushed Stone satisfactorily placed, leveled and compacted. Payment shall be based on weight tickets for stone delivered and accepted for work. All labor, materials (other than the Crushed Stone), equipment, and excavation shall be incidental to the placement of Crushed Stone.

TECHNICAL SPECIFICATIONS

SECTION 13 - CONCRETE ENTRANCE PAVEMENT

13.1 SCOPE

This Work consists of constructing Concrete Entrances at the locations shown on the Plans, according to Lexington-Fayette Urban County Government Standard Drawings numbers 307, and 307-1 current edition. Work in this section shall also conform to Sections 206, 207, 601, 801, 802, 803, 804, 805, and 823 of the KDOH Standard Specifications, current edition.

Any placing of concrete must be immediately preceded by inspection and approval of the ENGINEER.

Sidewalk within the neat lines of an entrance shall be considered part of the entrance with regard to construction requirements and also measurement and payment. The entire entrance from inside curb edge through the transition to original driveway shall be completed in continuous pour unless approved otherwise by the ENGINEER.

Subgrade shall be thoroughly compacted. Soft or unsuitable subgrade shall be excavated and replaced with compacted No. 57 stone. At the discretion of the Engineer, Contractor shall place a 4" thick subbase of No. 57 stone on top of compacted subgrade and shall strike and mechanically compact the stone to produce a uniform flat surface.

Work for this section shall include all labor, materials, equipment, excavation, and incidentals necessary to complete the Work.

13.2 PAYMENT

Accepted quantities for 6 inch Concrete Entrance Pavement 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 Concrete Entrance Pavement satisfactorily placed. Measurement for entrance pavement will extend to back edge of curb. All labor, materials, equipment, subgrade compaction, excavation and backfill shall be incidental to the placement of Concrete Entrances.

Accepted quantities for No. 57's will be paid for at the respective Contract Unit Price as quoted (which shall be full compensation for all Work required under this Section) and paid per ton of Crushed Stone satisfactorily placed, leveled and compacted. Payment shall be based on weight tickets for stone delivered and accepted for work. All labor, materials (other than the Crushed Stone), equipment, and excavation shall be incidental to the placement of Crushed Stone.

TECHNICAL SPECIFICATIONS

SECTION 14 - SIDEWALK RAMPS

14.1 SCOPE

This Work consists of the construction of Sidewalk Ramps on a thoroughly compacted subgrade in accordance with the Plans, Contract Documents and Specifications, and Lexington-Fayette Urban County Government (LFUCG) Standard Drawings numbers 304-306 current edition. Work in this section shall also conform to Sections 206, 207, 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.

Expansion joint material shall be of approved quality and of one-half (½) 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.

Concrete shall be sufficiently vibrated to assure removal of air voids. Concrete shall be struck off by use of a screed, floated and brushed. 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 three-fourths (3/4) inch in depth, at four foot intervals. All concrete used shall be Class A concrete on which Type 2 (white pigmented) curing compound is used. Any pouring of concrete must be immediately preceded by inspection and approval of ENGINEER.

When it is necessary to replace portions of existing concrete sidewalks and entrance pavements, such existing features 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 or caused by breaks.

Work for this section shall include all labor, materials, equipment, excavation, and incidentals necessary to complete the Work.

LFUCG will provide the tactile warning tile for fresh concrete placement and the CONTRACTOR will install per unit price for Detectable Warning Tile Installed. Per Section 55 of these Specifications.

14.2 PAYMENT

Accepted quantities for Sidewalk Ramps 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 square yard satisfactorily placed. All labor, materials, equipment, subgrade compaction, excavation and backfill shall be incidental to the placement of Sidewalk Ramps.

TECHNICAL SPECIFICATIONS

SECTION 15 – HEADER CURB AND CURB AND GUTTER

15.1 SCOPE

This Work consists of the construction of Header Curb and/or 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, number 301, current edition. Work in this section shall also conform to Sections 206, 207, 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 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.

15.2 PAYMENT

Accepted quantities for Header Curb and/or Curb and Gutter Type 1 or Type 4 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 linear foot, satisfactorily placed. Header Curb and/or Curb and Gutter, Type 1 or Type 4, will be paid at the Unit Price across all entrances. All labor, materials, equipment, subgrade compaction, excavation and backfill shall be incidental to the placement of concrete Header Curb and/or Curb and Gutter, Type 1 or Type 4.

TECHNICAL SPECIFICATIONS

SECTION 16 - BITUMINOUS PAVEMENT MILLING AND TEXTURING

16.1 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.

16.2 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, hauling and disposal shall be incidental to the Milling and Texturing of Bituminous Pavement.

Unless otherwise agreed upon, tonnage shall be based on the measured volume [(SY) of the milled surface times the depth (in)] times 110 lbs/S.Y./in of depth. (Density is per Exhibit 1000-02 of the *Kentucky Highway Design Manual*, Jan 2006)

TECHNICAL SPECIFICATIONS

SECTION 17 - BITUMINOUS BASE

17.1 SCOPE

This Work consists of the construction of a 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 the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, Sections 401, 402 and 403 of the Current Edition and associated cross references, but only to the extent that these KDOH sections do not conflict with the content of these Plans, Contract Documents and Specifications, and LFUCG Standard Drawings.

17.2 BASIS OF PAYMENT

Accepted quantities for Bituminous Base 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 Base satisfactorily placed. No direct measurement shall be made. Payment shall be based on weight tickets for bituminous base delivered and accepted for work. All labor, miscellaneous materials, equipment, and compaction shall be incidental to the placement of Bituminous Base.

TECHNICAL SPECIFICATIONS

SECTION 18 - CLASS I BITUMINOUS SURFACE

18.1 SCOPE

This Work consists of the construction of a 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 Sections 207, 601, 602, 801, 802, 803, 804, 805, 806, 807, 811, 812, 813, 823, 828, and 844 of the KDOH Standard Specifications, current edition and associated cross references, but only to the extent that these KDOH sections do not conflict with the content of these Plans, Contract Documents and Specifications, and LFUCG Standard Drawings.

Generally, the new bituminous surface shall be KDOH Class 1 0.38D PG64-22. All areas to be paved shall be cleaned before paving operations commence. Any small areas to be repaired and paved shall be sawcut a minimum of two (2") inches deep (unless otherwise specified by the ENGINEER) and to a width as specified by the ENGINEER.1 before placement of the new adjacent bituminous pavement.

A bituminous tack coat shall be applied to all old or trafficked pavement, sawcut edges, any concrete base course, and to other bituminous or concrete pavements or surfaces, horizontal or vertical, where any new bituminous pavement material will be placed. A joint sealant, Flexmaster Pourable Crack Sealant 1109 or approved equal will be used at all joints between any new pavement and any existing pavements.

The minimum depth of the new bituminous surface course for street paving shall be (1½") inches and for driveway overlays two (2") inches.

18.2 PAYMENT

Accepted quantities of Bituminous Concrete Surface will be paid for at the Contract Unit Price per Ton as quoted in the Bid Schedule and shall be full compensation for all Work required under this section. No direct measurement shall be made. Payment will be based on weight tickets for Bituminous Concrete Surface delivered and accepted for the Work. Any water used to ensure that the pavement surface is draining is incidental to Bituminous Concrete Surface. All labor, materials, equipment, excavation, joint sealant, placement and compaction of the bituminous mix, incidentals and any other items necessary to complete the Work of this Section shall be incidental to the placement of the Bituminous Concrete Surface.

Payment for application of tack coat will be paid per Section 19 of these Specifications.

TECHNICAL SPECIFICATIONS

SECTION 19 – BITUMINOUS MATERIAL FOR TACK

19.1 SCOPE

This Work shall consist of the use of bituminous material for tack in accordance with the Plans, Contract Documents and Specifications. Work in this section shall also conform to the Kentucky Department of Highways (KDOH) Standard Specifications, Section 406, of the current edition and associated cross references, but only to the extent that these KDOH sections do not conflict with the content of these Plans, Contract Documents and Specifications, and LFUCG Standard Drawings.

Application of bituminous tack coat will be applied to old material surfaces, curb contact, cold base surfaces and as otherwise directed by the Engineer.

If tack coat will be subject to traffic, a sand blotter shall be used in accordance with KDOH Standard Specifications for Road and Bridge Construction, Section 406 current edition.

19.2 BASIS OF PAYMENT

Payment for the accepted quantity will be made at the unit bid price per ton, which payment shall be full compensation for all Work required by this section. Payment will be based on weight tickets for Bituminous Material for Tack delivered and accepted for the Work.

TECHNICAL SPECIFICATIONS

SECTION 20 - SURFACE INLET

20.1 SCOPE

Work for this Section shall include all labor, excavation, materials, equipment, and incidentals necessary to construct Type "A", and "B" surface inlets as specified in the Purchase Order in accordance with the Lexington-Fayette Urban County Government Standard Drawings numbers 120 and 121 and shall conform to Kentucky Department of Highway Standard Specifications, Section 601, 602 and 710.

20.2 BASIS OF PAYMENT

Accepted quantities for Surface 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 Surface Inlet satisfactorily placed. All labor, materials, equipment, and excavation shall be incidental to the placement of Surface Inlets.

TECHNICAL SPECIFICATIONS

SECTION 21 – CURB AND DROP BOX INLET

21.1 SCOPE

Work for this Section shall include all labor, excavation, materials, equipment, and incidentals to construct LFUCG Type "A", "B", "C", and "D" Curb Box Inlets, KDOH type "B" Curb Box Inlet, and/or Type "13" and "16" Drop Box Inlets as specified in the Purchase Order in accordance with the Lexington-Fayette Urban County Government Standard Drawings Numbers 122-125, KDOH Standard Drawings RDB 013-06 through RDB 019-03 (7 dwgs total) and RDB 030-03 through RDB 035-03 (6 dwgs total), RDB 280-05 through RDB 282-03 (3 dwgs total), and shall conform to Kentucky Department of Highway Standard Specifications, Section 601, 602 and 710.

21.2 BASIS OF PAYMENT

Accepted quantities for Curb Box and/or Drop 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 Curb Box and/or Drop Box Inlet satisfactorily placed. All labor, materials, equipment, and excavation shall be incidental to the placement of Curb Box and/or Drop Box Inlets.

TECHNICAL SPECIFICATIONS

SECTION 22 - MANHOLE CONSTRUCTION

22.1 SCOPE

Work for this Section shall consist of manhole construction for manholes less than eight feet zero inches (8'0") deep. Manholes greater than eight feet zero inches (8'0") deep shall be paid for as eight feet zero inches (8'0") manholes plus the additional vertical depth at the Contract Unit Price quoted.

At the option of the CONTRACTOR, manholes shall be constructed of precast concrete manhole rings. Manholes shall be constructed to conform to Lexington-Fayette Urban County Government Standard Drawings 100-105 (storm) and 210-217, 220 and 222 (sanitary), unless otherwise noted or directed by the ENGINEER. Bases for manholes shall be poured in place using Class "A" concrete and shall have a minimum thickness of eight inches (8"). Field poured bases (doghouse manholes) shall only be allowed with prior approval of LFUCG. If no special instructions are given on the plans and precast manholes are used, the 6" overhang in the base section shown on the drawings shall not be required.

Dimensions for the placement of Manholes be as specified by the Purchase Order.

22.2 MATERIALS

22.2.1 Precast Concrete Rings: Precast concrete rings for manholes shall conform to ASTM Standard Specifications C-76, Class II, Wall B, with a minimum concrete strength of 4,000 psi, except that rings for manholes over twelve (12) feet deep shall be Class III. Rings shall be of the tongue and groove type. New or replacement manholes shall be sized such that a 6" ring is installed to permit future height adjustment in either direction . Brick leveling courses shall not be used under any circumstances.

22.2.2 Precast Concrete Cones: Precast concrete cones shall be of the size and shape shown on the plans and shall conform to the ASTM Standard Specification C-76 for the reinforced concrete sewer pipe, Class II and as specified above for Precast Concrete Rings.

22.2.3. Sealant for Concrete Rings: Conseal or its equal shall be used as sealant. If mortar is used, it shall be composed of one part Portland Cement and two parts sand, to which a small amount of hydrated lime putty, not to exceed ten (10) pounds per bag of cement, may be added.

22.2.4 Manhole Steps: Manhole steps shall be asphalt coated cast iron or polypropylene plastic coated steel rod or of a type and size approved by the ENGINEER.

21.2.5 Manhole Frames and Covers: The Standard Manhole casting shall consist of 7" cast iron frames and 22-3/4 inch diameter covers weighing not less than 320 pounds for frame and cover, dimensioned as shown on the plans unless otherwise noted. When used

the manhole adjustable frames shall be set at their lowest adjusted level. CONTRACTOR shall not use adjusters to match grade. Manhole covers must set neatly in the rings with contact edges machined for even bearings and tops set neatly in the rings with contact edges machined for even bearings and tops flush with ring edge. They shall have sufficient corrugations to prevent slipperiness and be marked in large letters, "SANITARY" or "STORM SEWER, LEXINGTON, KENTUCKY". The lids shall have two pick holes about 1-1/2 inches wide and 1/2-inch deep with 3/8-inch undercut all around. They shall be equivalent to those manufactured for the Lexington-Fayette Urban County Government by J.R. Hoe and Sons, Middlesboro, Kentucky, and shall be of cast iron conforming to ASTM A-48, Class 35, Gray Iron Castings. The contact surfaces of covers and corresponding rings in the rims shall be machined to provide full perimeter contact.

22.3 CONSTRUCTION METHODS

22.3.1 Width and Depth of Excavation of Structure:

22.3.1.1 Earth Excavation: In excavating for concrete structures, the required width shall be such as to permit forms to be constructed in the proper manner and to permit proper backfilling on completion of the structures. Depth of excavation for base shall be as shown on the Standard Drawings and/or as directed by the ENGINEER to obtain sufficient bearing.

22.3.1.2 Rock Excavation: Rock excavation for structures will be measured between the vertical planes passing eighteen (18) inches beyond the outside of the base and from the surfaces of the rock to the neat lines of the bottoms of the structures or the actual bottom on the rock ledge.

22.3.2 Laying Concrete Rings: Mortar joints shall not be more than 3/8 inch thick horizontally and not less than 3/8 inch wide vertically at the inside face of the manhole.

Precast concrete manhole rings shall be set level and plumb. Joints between sections shall not be less than 3/8 inch thick and the entire joint space between sections shall be completely filled with mastic designed for this purpose or other material approved by ENGINEER.

In sewer manholes, masonry shall be carefully and neatly constructed around the inlet and outlet pipes so that there will be no leakage around the outer surface.

The ENGINEER shall approve materials and techniques used to insure water and/or vacuum tightness.

22.3.3 Manhole Inverts: Manhole inverts shall be formed from Class "A" concrete as shown on the plans. Curved inverts shall be constructed of concrete and shall form a smooth, even, half-pipe section. The inverts shall be constructed when the manhole is being built using prefabricated forms. Changes in direction of flow through the invert shall be made to a true curve with as large a radius as the size of manhole or inlet will

permit. Invert slabs which are situated at depths in excess of 12 feet shall be reinforced per Lexington-Fayette Urban County Government Standard Drawings.

22.3.4. Bases: The excavation shall be kept free of water while the manhole is being constructed. After the foundation has been prepared and has been approved by the ENGINEER, the bottom shall be constructed to the required line and grade. After the bottom has been allowed to set for a period of not less than twenty four (24) hours, the manhole and inlet shall be constructed thereon.

22.3.5. Casting: The cast iron steps shall be included in the wall of the manhole at the proper locations and elevations as the work progresses and shall be securely embedded (per Lexington-Fayette Urban County Government Standard Drawings). The cast iron frame for the manhole cover shall be set at the required elevation and properly anchored. Where manholes are constructed in paved areas, the top surface of the frame and cover shall be tilted to conform to the exact slope, crown and grade of the existing adjacent pavement. Frames shall be in full cement mortar beds or other approved material.

22.3.6 Backfilling: Masonry Work shall be allowed to set for a period of not less than twenty four (24) hours. Outside voids shall be backfilled and compacted in the same manner as provided for backfilling of pipeline trenches. All loose or waste material shall be removed from the interior of the manhole or inlet. The manhole cover or inlet grating then shall be placed and the surface in the vicinity of the Work cleaned off and left in a neat and orderly condition. No back-filling shall be performed until the manhole has been inspected and approved for backfilling by the ENGINEER.

22.3.7 Vacuum Testing for Sanitary Sewer Manholes: All sanitary sewer manholes must pass the application of a vacuum test (ASTM C1244) by the Division of Sanitary Sewers prior to acceptance by the Lexington-Fayette Urban County Government.

22.4 BASIS OF PAYMENT FOR SANITARY AND STORM SEWER MANHOLES

Accepted quantities for Lexington Sanitary and Storm Sewer Manholes will be paid at the Contract Unit Price as quoted for their respective sizes (which shall be full compensation for all Work required under this Section) and paid per specified Sanitary or Storm Sewer Manhole satisfactorily placed. All labor, excavation, materials, and equipment shall be incidental to the construction of manholes from zero (0) to eight (8) feet deep.

22.5 BASIS OF PAYMENT FOR ADJUSTABLE FRAME AND COVER

Accepted quantities for Adjustable Frame and Cover will be paid for at the Contract Unit as quoted (which shall be full compensation for all Work required under this Section) and paid per Adjustable Frame satisfactorily placed. All labor, excavation, materials (other than the Adjustable Frame), and equipment shall be incidental to the installation of Adjustable Frames.

TECHNICAL SPECIFICATIONS

SECTION 23 - MANHOLE - ADDITIONAL VERTICAL DEPTH

23.1 SCOPE

Work for this Section shall include all labor, materials, equipment, additional excavation, and incidentals necessary to construct additional manhole vertical depth beyond eight feet zero inches (8'0") and shall conform to all applicable standards as specified for manhole construction in Section 16 of this Document.

23.2 BASIS OF PAYMENT

Accepted quantities for Additional Vertical Depth 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 vertical foot of Additional Vertical Depth of sanitary or storm sewer manhole satisfactorily placed. All labor, materials, equipment, and excavation shall be incidental to the placement of Additional Vertical Depth for manhole construction.

TECHNICAL SPECIFICATIONS

SECTION 24 - MANHOLE OR CURB BOX INLET TIE-IN

24.1 SCOPE

Work for this Section shall include all labor, excavation, materials, equipment, and incidentals to make connections to existing manholes or curb box inlets where required. The existing manhole and/or curb box inlet shall be drilled and/or sawed in a neat manner to allow for the smoothest connection possible. Once the connection is made, the annulus between the pipe and the structure shall be filled with non-shrink grout and the entire area around the connection shall be filled with cement concrete. No fill shall be placed on the concrete before hardening has occurred.

24.2 BASIS OF PAYMENT

Accepted quantities for Manhole or Curb Box Inlet Tie-Ins will be paid at the Contract Unit Price as quoted (which shall be full compensation for all Work under this Section) and paid per Manhole or Curb Box Inlet Tie-In satisfactorily placed. All labor, materials, equipment, and excavation shall be incidental to the placement of Manhole or Curb Box Inlet Tie-in's.

TECHNICAL SPECIFICATIONS

SECTION 25 - STORM SEWER PIPE

25.1 SCOPE FOR RCP (REINFORCED CONCRETE PIPE) STORM SEWER

Work under this Section shall include all labor, excavation, materials, equipment, bedding, backfilling and legal disposal of unneeded and unsatisfactory material at site obtained by CONTRACTOR in accordance to Lexington-Fayette Urban County Government Standard Drawings 100, 102, 103, 104 and 105, and all incidentals necessary to construct Storm Sewer to the sizes and type indicated from zero (0) to eight (8) feet deep. Where the Standard Drawing requires a concrete cap, it shall be constructed according to KDOH Section 501 for consolidated, unfinished concrete.

All RCP is Class III unless noted otherwise.

25.1.1 LAYING

Pipe shall be laid to the line and grade shown on the drawings. Pipe shall be laid with the bell or groove at the upstream end of each section.

25.1.2 JOINING PIPE

The joint design for concrete pipe shall be bell and spigot or tongue and groove. The bell or tongue shall be of confined gasket or single offset spigot configuration to properly contain and seat the rubber gasket. The joint assemblies shall be accurately formed so that when each pipe section is forced together in the trench the assembled pipe shall form a continuous watertight conduit with smooth and uniform interior surface, and shall provide for slight movement of any piece of the pipeline due to expansion, contraction, settlement or lateral displacement. The gasket shall be the sole element of the joint providing water tightness. The ends of the pipe shall be in planes at right angles to the longitudinal centerline of the pipe, except where bevel-end pipe is required. The ends shall be furnished to regular smooth surfaces.

Rubber gasket joints for tongue and groove or bell and spigot pipe using a confined gasket joint shall consist of an O-ring rubber gasket or other approved gasket configuration and shall conform to the requirements of ASTM 361, ASTM C443, ASTM C1619, or ASTM C1628 for the pipe designated.

Rubber gasket joints for tongue and groove or bell and spigot pipe using a single offset joint shall consist of a non-circular rubber gasket or other approved gasket configuration and shall conform to the requirements of ASTM C76 or ASTM 361 for the pipe designated.

Gaskets may be natural rubber, isoprene or neoprene conforming to ASTM C1619.

25.1.4 INSPECTION

All RCP pipe shall be inspected in accordance with Section 26 Internal Inspection of Sewer Pipe: CCTV as directed by the Engineer.

25.2 BASIS OF PAYMENT FOR RCP STORM SEWER

Accepted quantities for RCP Storm Sewer will be paid for at the Contract Unit Price as quoted for various sizes (which shall be full compensation for all work required under this Section) and paid per linear foot of specified RCP Storm Sewer satisfactorily placed. Any removal of pavement and sidewalk and any rock encountered between zero (0) and eight (8) feet shall be paid for under appropriate Bid Items in addition to the Unit Price for RCP storm sewer. Concrete caps shall be paid under the Bid Item for unfinished concrete. Surface restoration (seeding, sod, pavement, etc.) will be paid separately under the appropriate Bid Items and the pay limits for surface restoration shall be in accordance with the appropriate Standard Drawings. Limits of surface restoration will be those limits as shown on the plans.

All labor, materials, equipment, excavation, bedding, disposal and backfilling shall be incidental to the placement of RCP Storm Sewer.

25.3 SCOPE FOR N-12 (HDPE OR PP) STORM SEWER

Work under this Section shall include all labor, excavation, materials, equipment, bedding and backfilling in accordance to the Plans, Contract Documents and Specifications and all incidentals necessary to place N-12 HDPE (high density polyethylene), or N-12 PP (polypropylene) Storm Sewer to the sizes indicated. The CONTRACTOR shall be certified by the pipe manufacturer to install HPDE and HP pipe and provide proof thereof. All pipe delivered to the site shall be certified through the Plastic Pipe Institute (PPI) Third Party Certification program and shall bear the Third Party Administered seal. Adapter, as manufactured by the pipe manufacturer shall be used to connect HDPE pipe with existing pipe of dissimilar material.

25.3.1 Installation

Pipe is to be installed at the required line and grade as indicated on the plans. Once the trench is excavated on line, the pipe bedding should be placed to proper thickness. The top of the bedding should be adjusted to allow for the difference between the plan invert and pipe profile.

25.3.2 Dewatering

Excessive groundwater hinders proper placement and compaction of bedding and backfill. N-12 pipe will float in standing water, therefore, it is imperative that a dry trench be provided. It may be necessary to provide sumps pumps, underdrains or a diversion ditch to insure a dry trench.

25.3.3 Joints and Joint Assembly

All joints are to be installed as per manufacturer's specifications.

25.3.4 Embedment Material

In accordance with manufacturer's recommendations and LFUCG Standard Drawings embedment materials are those used for bedding, haunching and initial backfill and shall consist of #9, #57 or #78 coarse aggregate. All embedment materials shall be free of frozen soil or ice when placed. Additionally, embedment materials shall be placed and compacted at optimum moisture content. Embedment materials shall be specified with consideration given to design loads and the classification and suitability of native soils.

25.3.5 Foundation

A stable foundation must be provided to insure proper line and grade is maintained. Unsuitable foundations must be stabilized at the Engineer's judgment. Unsuitable or unstable foundations may be undercut and replaced with a suitable bedding material, placed in 6" lifts.

25.3.6 Bedding

A stable and uniform bedding shall be provided for the pipe and any protruding features of its joints and/or fittings. The middle of the bedding equal to 1/3 of the pipe diameter OD should be loosely placed, with the remainder compacted to a minimum of 90% standard proctor density.

25.3.7 Haunching

Proper haunching provides a major portion of the pipe's strength and stability. Care must be exercised to insure placement and compaction of the embedment material in the haunches. For larger diameter pipes (>30"), embedment materials should be worked under the haunches by hand. Hauching materials may be #9 or #78 coarse aggregates and must be placed and compacted in 8 inch maximum lifts, compacted to 90% standard proctor density.

25.3.8 Initial Backfill

Initial backfill materials are required in accordance with LFUCG Standard Drawings.

25.3.9 Final Backfill

The final backfill shall be the same material as the proposed embankment. Generally, the excavated material may be used as final backfill. Placement shall be as specified for the embankment. In lieu of a specification, the final backfill shall be placed in 12 inch maximum lifts and compacted to a minimum 85% standard proctor density to prevent excessive settlement at the surface. Compaction shall be performed at optimum moisture content. Backfill beneath paved area shall be as per LFUCG Standard Drawing 201-1.

25.3.10 Manhole Connections

Consideration should be given to the project performance specified when selecting manhole connections. When connecting to concrete manholes or inlets grouting the pipe to the manhole or inlet using non-shrink grout provides a soil tight installation. A gasket placed in a pipe corrugation at the approximate center of the manhole or inlet wall will act as a water stop. This water-stop should provide a silt tight installation. Watertight installations may require flexible rubber connections such as rubber boots or adapters.

When connecting to manholes, insure backfill is placed under the pipe adjacent to the manhole to prevent differential settlement.

25.3.11 Specifications

The following list is a common material, design and performance specifications for N-12 HPDE (high density polyethylene) corrugated pipe. N-12 pipe shall have a smooth interior, and annular exterior corrugations.

AASHTO M-252, AASHTO M-294, AASHTO MP 7-97, AASHTO Sections 12, 18, 30
ASTM F 405, ASTM F 667, ASTM D 2321, ASTM F 477, ASTM 1417

The following list is a common material, design and performance specifications for N-12 PP (polypropylene) corrugated pipe. N-12 pipe shall have a smooth interior, and annular exterior corrugations.

AASHTO T-341, AASHTO R-16, AASHTO MP-21-11, AASHTO HB Section 30
ASTM C969, ASTM C1103, ASTM D2321, ASTM D3212, ASTM F477, ASTM F1417, ASTM F2487, ASTM 2736

25.3.12 Inspection Requirements

25.3.12.1 Visual Inspection

All pipes shall undergo inspection during and after installation to ensure proper performance. Installation of bedding and backfill materials, as well as their placement and compaction, shall be determined to meet the requirements of this section. During the initial phases of the installation process, inspection shall concentrate on detecting improper practice and poor workmanship. Errors in line and grade, as well as any improper assembly or backfill techniques, shall be corrected prior to placing significant backfill or trench fill. Coupling bands shall be properly indexed with the corrugation and tightened, and bell/spigot joints shall be properly assembled to prevent the infiltration of soil fines. Where gaskets are used, they shall be properly seated to prevent groundwater infiltration and should appear uniformly oriented around the pipe. In areas where cracking or joint separation is found, a remediation or replacement plan shall be submitted for approval. Final internal inspections shall be conducted on all buried thermoplastic pipe installations to evaluate issues that may affect long-term performance. Final inspections shall be conducted no sooner than 30 days after completion of installation and final fill. Shallow cover installations shall be checked to ensure the minimum cover level is provided.

Inspection at the appropriate times during installation will detect and allow correction of line and grade, jointing and shape change problems. The timing and number of inspections required will vary with the significance and depth of the installation. The contractor is advised to provide initial inspections himself to avoid problems later on. Racking or flattening of the pipe's

curvature indicates improper backfill placement methods that must be corrected. Slight peaking of the cross-sectional shape should be taken as indicative of achieving proper compaction requirements. Soil consolidation continues with time after installation of the pipe. While 30 days will not encompass the time frame for complete consolidation of the soil surrounding the pipe, it is intended to give sufficient time to observe some of the effects that this consolidation will have. However, occasionally pavement is placed over the pipe sooner than 30 days. While the 30-day time limit should be maintained, a brief inspection of the pipe prior to paving over it, particularly for the first few joints, may be prudent to ensure that good construction practices are being applied. It is recommended that inspection personnel not enter culverts less than 24 in. in diameter. Internal inspection of culverts in this size range is best conducted using video cameras. Culverts should only be entered by inspection personnel trained in working within confined spaces and using procedures in full compliance with applicable State, Local, and Federal OSHA regulations.

25.3.12.2 Installation Deflection

The pipe shall be evaluated to determine whether the internal diameter of the barrel has been reduced more than 5 percent when measured not less than 30 days following completion of installation. Pipes shall be checked for deflection using a mandrel or any other device approved by the Engineer that can physically verify the dimensions of the pipe and is not limited by poor lighting, water flow, pipe length, or other limiting conditions of the installed environment. Pipes larger than 24 in. may be entered and deflection levels measured directly. In all pipe installations, at least 10 percent of the total number of pipe runs representing at least 10 percent of the total project footage on the project shall be randomly selected by the Engineer and inspected for deflection. Also, as determined by the 100 percent visual inspection, all areas in which deflection can be visually detected shall be inspected for deflection. Where direct measurements are made, a measurement shall be taken once every 10 ft. for the length of the pipe, and a minimum of four measurements per pipe installation is required. If a mandrel is used for the deflection test, it shall be a nine (or greater odd number) arm mandrel, and shall be sized and inspected by the Engineer prior to testing. A properly sized proving ring shall be used to check or test the mandrel for accuracy. The mandrel shall be pulled through the pipe with a force not greater than 1,000 lb. For locations where pipe deflection exceeds 5 percent of the inside diameter, an evaluation shall be conducted by the Contractor and submitted to the Engineer for review and approval considering the severity of the deflection, structural integrity, environmental conditions, and the design service life of the pipe. Pipe remediation or replacement shall be required for locations where the evaluation finds that the deflection could be problematic. For locations where pipe deflection exceeds 7.5 percent of the inside diameter, remediation or replacement of the pipe is required.

Inspection criteria is newly added to the specification as there was minimal guidance in the previous specification. Ten percent of each pipe installation shall be defined as 10 percent of the number of pipe runs, and not less than 10 percent of the total length of installed pipe on the project. The requirement of deflection testing 10 percent of each pipe installation is intended to serve as a minimum and does not limit owners from more stringent requirements. The pipe inside diameters should be provided by the pipe manufacturer for every size and type of pipe delivered. If the pipe inside diameter is not provided, or is not available, pipe inside diameter can be developed by averaging the diameters measured at eight equally spaced locations around a section of unloaded pipe for every given size and manufacturer. There are many appropriate methods suitable for measuring deflection, including video inspection equipment, mandrels, and other direct measurement devices. For pipes tested by a mandrel, the mandrel shall be pulled through the entire pipe. Whichever method is used for deflection measurement, a minimum of 10 percent of the total length of installed pipe shall be tested, in addition to any areas that were identified in the visual inspection as having deflection. Installed pipe deflections that exceed 5 percent of the initial inside diameter may indicate that the installation was substandard. Appropriate remediation, if any, will depend upon the severity of the deflection, the condition of the pipe, and evaluation of the factor of safety using section 12, "Buried Structures and Tunnel Liners," of the AASHTO LRFD B*ridge Design Specifications.* Installed pipe deflections that exceed 7.5 percent of the initial inside diameter will require remediation or replacement of the pipe.

25.3.13 Inspection

All HDPE and PP pipe shall be inspected in accordance with Section 26 Internal Inspection of Sewer Pipe: CCTV as directed by the Engineer.

25.4 BASIS OF PAYMENT

Accepted quantities for HDPE and PP Storm Sewer will be paid for at the Contract Unit Price as quoted for various sizes (which shall be full compensation for all work required under this Section) and paid per linear foot of specified HDPE or PP Storm Sewer satisfactorily placed. Any removal of pavement and sidewalk and any rock encountered between zero (0) and eight (8) feet shall be paid for under appropriate Bid Items in addition to the Unit Price for HDPE or HP Storm Sewer. Concrete caps shall be paid under the Bid Item for unfinished concrete. Surface restoration (seeding, sod, pavement, etc.) and CCTV inspection will be paid separately under the appropriate Bid Items. Pay limits for surface restoration shall be in accordance with the appropriate Standard Drawings. Limits of surface restoration will be those limits as shown on the plans.

All labor, materials (other than the HDPE or PP storm sewer), equipment, excavation, bedding, disposal and backfilling shall be incidental to the placement of HDPE or PP Storm Sewer.

TECHNICAL SPECIFICATIONS

SECTION 26 - INTERNAL INSPECTION OF SEWER PIPE: CCTV

26.1 SCOPE:

A CLOSED CIRCUIT TELEVISION (CCTV) survey is required for all newly installed sewer pipe, whether PVC, DIP, RCP, HDPE and/or any designated existing pipe. The television survey shall be performed by an experienced CCTV Contractor approved by the LFUCG Division of Engineering.

The CCTV inspections should be performed by the approved contractor a minimum of thirty (30) days after any new pipe has been backfilled, unless otherwise approved by the Engineer.

26.2 GENERAL:

All lines designated and/or designed by the Engineer shall be internally inspected. The purpose of the inspection is to locate structural damage that may be present in the collection pipe.

Any structural damage found in the pipe impairing the CCTV inspection, shall be documented and the Engineer should be notified immediately. The Engineer and Owner will evaluate the damage and, if cost-effective, the Engineer will notify the Contractor in writing to proceed with cleaning or additional repairs. These repairs will be made at the unit prices shown on the Contractor's Bid Proposal.

The Owner makes no guarantee that all of the sewers to be entered are clear for the passage of a camera. The methods used for securing passage of the camera are to be at the option of the Contractor, and the costs must be included in the bid price for television inspection. The cost of retrieving the television camera, under all circumstances, when it becomes lodged during inspection, shall be incidental to this portion of the work.

26.3 EQUIPMENT:

The CCTV mainline inspection system television shall be one specifically designed and constructed for such inspection. The inspection system shall be able to perform pan/tilt or pan/rotate operations. Lighting for the camera shall be suitable to allow a clear picture for the entire periphery of the pipe. The system shall be operable in 100 percent humidity conditions. The camera, television monitor and other components of the CCTV system shall be capable of producing a minimum 500-line resolution video picture. Picture quality and definition shall be to the satisfaction of the Engineer and if unsatisfactory, equipment shall be removed and no payment made for unsatisfactory inspection.

26.4 RECOMMENDED METHOD FOR INTERNAL INSPECTION:

After thoroughly cleaning the pipe, the camera shall be moved through the sewers in the downstream direction at a uniform rate not to exceed 30 ft./min., stopping when necessary to insure proper documentation of the sewer's condition. Manual winches, power winches, TV cable and power rewinds or other devices that do not obstruct the camera view or interfere with proper documentation of the sewer conditions may be used to move the camera through the sewer line.

If during the inspection operation, the television camera will not pass through the entire manhole section, the Contractor shall set up his equipment so that the inspection can be performed from the opposite manhole. If the camera again fails to pass through the entire manhole section, the Contractor shall notify the Engineer of the situation.

26.5 INSPECTION LOGS AND CD/DVDS:

All CD/DVDS, and logs shall be labeled with the Contractors Name, Contract number, DVD number (logs must match that number) and with each Contractor the DVD/ logs must start at number 1 and progress upward till the end of this contract.

A log approved by the Engineer shall be provided for all line inspections listing the watershed, line segment ID, line segment location, upstream manhole depth, downstream manhole depth, lateral connection distance and position, pipe diameter, pipe material, defects and defect ratings, also see notes above. Printed and digital records shall be kept by the Contractor and will clearly show the location of each infiltration point observed during inspection. In addition, other points of significance such as locations of service connections, unusual conditions, roots, storm sewer connections, damaged pipe, presence of scale and corrosion and other discernable features will be recorded and a copy of such records in both hard copy and digital format will be supplied to the Engineer. The digital records must be in a Microsoft Database format (.mdb file extension) or other format approved by the Engineer. A key to all observations used shall be included on each log sheet.

The locations of all the defective areas to be repaired will be identified by logging the distance frame at each defect or point of interest measured from the center of the starting manhole to the plane of focus of the camera. The importance of accurate distance measurements is emphasized. Confirmation of measurement for location of defects shall be above ground by means of a meter device. Accuracy of the distance meter shall be checked by use of a walking meter, roll-a-tape or other suitable device, and the accuracy shall be satisfactory to the Engineer. Marking on the cable or the like, which would require interpolation for depth of manhole, will not be allowed.

The purpose of DVD recording shall be to supply a visual and audio record of problem areas of the lines that may be replayed. DVD recording playback shall be at the same speed that it was recorded. DVDs shall be considered property of the Owner and the Contractor shall possess backup copy of all DVDs until completion of the Contract. All CCTV work done must be recorded on DVD's using the software Visual Pipes, or other approved software. The

Contractor shall supply the LFUCG a licensed (if applicable) copy of said software to view these DVD's.

26.6 FINAL ACCEPTANCE:

Acceptance of this portion of work shall be made upon the successful review of the DVD submitted to the LFUCG. If the DVDs are of such poor quality and/or the sewer line needs additional cleaning that the Owner is unable to evaluate the condition of the sewer line or to locate service connections, the Contractor shall be required to re-televise and provide a suitable DVD of the line at no additional cost. If a suitable DVD cannot be provided of such quality that the Owner can review it, no payment shall be made for additional cleaning and/or closed circuit television (CCTV). Also, no payment shall be made for portions of lines not televised or portions where manholes cannot be negotiated with the television camera.

26.7 BASIS OF PAYMENT:

Accepted quantities for Internal Inspection of Storm Sewer Pipe: CCTV will be paid for at the Contract Unit Price as quoted per linear foot (which shall be full compensation for all Work required under this Section) and paid per foot satisfactorily inspected. All labor, cleaning, materials, equipment, and excavation shall be incidental to the Internal Inspection of Storm Sewer Pipe: CCTV.

TECHNICAL SPECIFICATIONS

SECTION 27 - HEADWALLS

27.1 SCOPE

Work for this Section shall conform to Kentucky Department of Highways Standard Specifications for Road and Bridge Construction Section 610 and 710, Current Edition and the Lexington-Fayette Urban County Government Standard Drawings 150, 153, 154-1, 154-2 and 154-3, and shall include all labor, excavation, materials, equipment and necessary incidentals. Drawings for Straight Headwalls 30" and greater will be provided by the ENGINEER.

Dimensions for the placement of Headwalls will be as specified by the Purchase Order.

27.2 BASIS OF PAYMENT

Accepted quantities for Headwalls will be paid for at the Contract Unit Price as quoted for various sizes (which shall be full compensation for all Work required under this Section) and paid per specified Headwall satisfactorily placed. All labor, materials, grates (if required), equipment, and excavation shall be incidental to the placement of Headwalls.

TECHNICAL SPECIFICATIONS

SECTION 28 - IMPACT STILLING BASIN

28.1 SCOPE

Work for this Section shall include all labor, materials, excavations, equipment, and incidentals necessary to construct Impact Stilling Basins for Pipes in accordance with Lexington-Fayette Urban County Government Standard Drawings 164 and 165, and Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, Section 601, 602, 603 and 710 requirements.

Dimensions for the placement of Impact Stilling Basins will be as specified by the Purchase Order.

28.2 BASIS OF PAYMENT

Accepted quantities for Impact Stilling Basins will be paid for at the Contract Unit Price as quoted for various sizes (which shall be full compensation for all Work required under this Section) and paid per specified Impact Stilling Basin satisfactorily placed. All labor, materials, equipment, and excavation shall be incidental to the placement of Impact Stilling Basins.

TECHNICAL SPECIFICATIONS

SECTION 29 - PAVED DITCH

29.1 SCOPE

Work for this Section shall conform to Kentucky Department of Highways Standard Specifications Section 709, Current Edition and the Lexington-Fayette Urban County Government Standard Drawing 132 and shall include all labor, excavation, materials, equipment and incidentals necessary to complete the Work.

Dimensions for the placement of a Paved Ditch will be as specified by the Purchase Order.

29.2 BASIS OF PAYMENT

Accepted quantities for Paved Ditch will be paid for at the Contract Unit Price as quoted for various sizes (which shall be full compensation for all Work required under this Section) and paid per square yard of specified Paved Ditch satisfactorily placed. All labor, materials, equipment, and excavation shall be incidental to the placement of Paved Ditches.

TECHNICAL SPECIFICATIONS

SECTION 30 - AGGREGATE CHANNEL LINING FOR SLOPE PROTECTION

30.1 SCOPE

Work under this Section shall be in conformance to Lexington-Fayette Urban County Government Standard Drawings 130-1 and 130-2, for aggregate channel lining and shall include all labor, excavation, materials, equipment, and incidentals necessary to complete the Work. Type I Geotextile fabric shall be required and considered as incidental to the accomplishment of this Work.

30.2 BASIS OF PAYMENT

Accepted quantities for Aggregate Channel Lining 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 ton of Aggregate Channel Lining satisfactorily placed. No direct measurement shall be made. Payment will be based on weight tickets of No.2 stone delivered and accepted for the work. All labor, excavation, materials (other than the aggregate), and equipment shall be incidental to the placement of an Aggregate Channel Lining.

TECHNICAL SPECIFICATIONS

SECTION 31 - SEEDING AND PROTECTION

31.1 SCOPE

Work under this Section shall be in conformance to Kentucky Department of Highways Standard Specifications Section 212, current edition and shall include all labor, materials, equipment, and incidentals necessary to complete the Work. Fertilizer (10-10-10) and agricultural lime will be incorporated into a 3" deep bed and applied at 28 lbs./1,000 sq. ft. and 150 lbs./1,000 sq. ft., respectively. Seeding shall be done with Kentucky Bluegrass only unless specified otherwise in the Purchase Order. Mulching material shall consist of straw or hay in an air-dry condition, and shall be substantially free of noxious weed seeds and objectionable foreign matter. Mulching material shall applied to a loose depth of 1 to 1½ inches.

Finelawn or other turf type fescue, 3 lb/1,000 sq. ft.; add ½ lb of Poa Trivialis for very heavy shade or otherwise customize as directed by ENGINEER. The desires of the owner should be considered. Species currently present should also be considered.

31.2 BASIS OF PAYMENT

Accepted quantities for Seeding and Protection 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 square yard of Seeding and Protection satisfactorily placed. All labor, fertilizer, lime, straw, materials, and equipment shall be incidental to the application of Seeding and Protection.

TECHNICAL SPECIFICATIONS

SECTION 32 - SODDING

32.1 SCOPE

Work under this Section shall be in conformance to Kentucky Department of Highways Standard Specifications Section 212 and shall include all labor, materials, equipment, and incidentals necessary to complete the Work. Fertilizer (10-10-10) and agricultural lime will be incorporated into a 3" deep sod bed and applied at a rate of 28 lbs./1,000 sq. ft. and 100 lbs./1,000 sq. ft., respectively. Sodding shall be done with Kentucky Bluegrass, Fescue, or other species approved by the ENGINEER and available at the time of placement. Sod shall be kept moist for a minimum of two weeks. The desires of the owner and the species currently being used should be considered.

32.2 BASIS OF PAYMENT

Accepted quantities for Sodding 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 square yard of Sodding satisfactorily placed. All labor, materials (other than the sod), and equipment shall be incidental to Sodding.

TECHNICAL SPECIFICATIONS

SECTION 33 - GABION MATTRESS CHANNEL LINING

33.1 SCOPE

Work for Gabion Mattress Channel Lining including Type I geotextile fabric shall conform to Kentucky Department of Highways Standard Specifications Section 613 and 813.13, current edition and the Lexington-Fayette Urban County Government Standard Drawing 131, and shall include all labor, excavation, materials, equipment and incidentals necessary to complete the Work.

33.2 BASIS OF PAYMENT

Accepted quantities respectively for Gabion Mattress Channel Lining 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 cubic yard of stone satisfactorily placed and contained within the gabion wire baskets. Payment shall be based on weight tickets for stone delivered and accepted for the work. All labor, materials, equipment, and excavation shall be incidental to the placement of Gabion Mattress Channel Linings.

TECHNICAL SPECIFICATIONS

SECTION 34 – HIGH DENSITY POLYETHYLENE PERFORATED PIPE

34.1 SCOPE

The Work consists of furnishing and installing High Density Polyethylene Perforated Pipe at depths of zero (0) to four (4) feet. Work for this Section shall conform to Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, Sections 704 and associated cross references, Current Edition and to Lexington-Fayette Urban County Government Standard Drawings 320, 320-1, 321, and 322, and shall include all labor, materials, equipment, and incidentals necessary to complete the Work, using only polyethylene perforated pipe.

34.2 BASIS OF PAYMENT

Accepted quantities for 4" and 6" High Density Polyethylene Perforated Pipe with incidental geotextile fabric, aggregate cover, and bedding will be paid for at the Contract Unit Price as quoted (which shall be full compensation for all Work required under Section) and paid per linear foot of Polyethylene Perforated Pipe satisfactorily placed at a depth of four (4) feet. All labor, materials, and equipment shall be incidental to the placement of Polyethylene Perforated Pipe.

For High Density Polyethylene Perforated Pipe at depths greater than four (4) feet additional pay items such as materials, stone and excavation will be paid separately.

TECHNICAL SPECIFICATIONS

SECTION 35 - SANITARY SEWER

35.1 SCOPE

Work under this Section shall be of the size indicated and shall include all service, labor, materials, and equipment involved in performing the various tasks necessary to construct the Gravity Sanitary Sewers described in the plans and specifications in accordance with Lexington-Fayette Urban County Government Standard Drawings 200, 201-1, 201-2 and 204. Such tasks include, but are not limited to, furnishing pipe, excavating trenches (including rock excavating), bedding, laying, jointing, testing, backfilling, connecting to the new manholes, removing existing pipe, connecting existing services, and plugging. Any other necessary incidental tasks shall also be included in Work under this Section.

35.2 PVC (POLYVINYL CHLORIDE PIPE)

PVC Sewer Pipe shall conform to ASTM D-2152, D-2444 and D-3033, or D-3034 and shall have a maximum SDR of 35 (SDR rating shall be per LFUCG Std Dwg. 204). The manufacturers shall submit five (5) copies of certification of tests for each lot of material represented by shipment to the job site.

All pipe shall be marked with the manufacturer's name, production lot number, ASTM Designation, PVC and the nominal diameter.

35.3 JOINTS FOR PVC PIPE

All joints shall be of the elastomeric gasket type and installed per the manufacturer's recommendations. Solvent cement joints shall not be used.

Pipe that has been field cut must be beveled for insertion into gasketed joints. Bevels can be made with hand or power tool. In either case, the finished bevel should be the same as the factory bevel.

35.4 DUCTILE IRON PIPE

Work under this Section shall be performed in accordance with applicable ASTM specifications which include but are not limited to the following:

Ductile iron pipe shall conform to the current requirements of AWWA, C151, Pressure Class 250, with push-on joints unless otherwise noted on drawings.

The interior of the pipe shall be cement-mortar lined with asphalt seal coat in accordance with the current requirements of AWWA C104. Thickness of the lining shall be set forth in Section 4.10.1 of the aforementioned specification unless otherwise directed by the ENGINEER. The exterior of all pipe, unless otherwise specified, shall receive either coal or tar or asphalt base coating a minimum of 1 mil thick.

Each piece of pipe shall bear the manufacturer's name or trademark, the year in which it was produced and the letters "DI" or the word "DUCTILE". Pipe manufacturer shall furnish notarized certificate of compliance to the above AWWA or ANSI specifications.

All ductile iron pipe shall be polyethylene encased. All materials and installation shall be in accordance with AWWA C105. The polyethylene film shall be a minimum of 8 mils for low-density polyethylene film and 4 mils for high-density cross-laminated polyethylene film.

35.5 INTERNAL PIPE DIAMETER

All sewer provided shall have a minimum actual internal diameter which is equal to or greater than diameters indicated on the Contract Drawings.

35.6 EXCAVATION FOR PIPELINE TRENCHES

Unless otherwise directed by the ENGINEER, trenches in which pipes are to be laid shall be excavated in open cut to the depths required by field conditions or as specified by the ENGINEER. In general this shall be interpreted to mean that machine excavation in earth shall not extend below an elevation permitting the pipe to be properly bedded. Excavation shall be in accordance with Lexington-Fayette Urban County Government Standard Drawings and ASTM D-2321.

Excavation shall be undercut to a depth below the required invert elevation that will permit laying the pipe in a bed of granular material to provide continuous support for the bottom quadrant of the pipe. The bedding shall be as set out in the following section.

Trenches shall be constructed according to LFUCG Standard Drawings 200, 201-1 and 201-2. Trenches shall be of sufficient width to provide free working space on each side of the pipe and to permit proper backfilling around the pipe, but unless specifically authorized by the ENGINEER, trenches shall in no case be excavated or permitted to become wider than 2'0" plus the nominal diameter of the pipe at the level of or below the top of the pipe plus 12".

All excavated materials shall be placed a minimum of two feet (2') back from the edge of the trench.

Before laying the pipe, the trench shall be opened far enough ahead to reveal obstructions that may necessitate changing the line or grade of the pipeline.

The trench shall be straight and uniform so as to permit laying pipe to lines and grades given by the ENGINEER. It shall be kept free of water during the laying of the pipe and until the pipeline has been backfilled. Removal of trench water shall be at the CONTRACTOR'S expense. Dry conditions shall be maintained in the excavations until the backfill has been placed. During the excavation, the grade shall be maintained so that it will freely drain and prevent surface water from entering the excavation at all times.

When directed by OWNER, temporary drainage ditches shall be installed to intercept or direct surface water which may affect work. All water shall be pumped or drained from the excavation and disposed of in a suitable manner without damage to adjacent property or to other work.

Minimum cover of 30" shall be provided for all pipeline.

35.7 PIPE BEDDING

All pipe shall be supported in a bed of well compacted #9 crushed stone. Bedding material shall be free from rock, foreign material, frozen earth, and be acceptable to the ENGINEER. In no case shall pipe be supported directly on rock. When rock is encountered in the trench bottom, bedding shall consist of fine gravel or Size #9 crushed stone only. Thickness of crushed stone bedding shall be a minimum 6" below pipe barrel. Pipe bedding is not a separate pay item.

In wet, yielding mucky locations where pipe is in danger of sinking below grade or floating out of line or grade, or where backfill materials are fluid such as flowable fill, movements of the pipe might take place during the placing of the backfill. The pipe must be weighted or secured permanently in place as such means as will provide effective. When ordered by the ENGINEER, yielding and mucky materials subgrades shall be removed below ordinary trench depth in order to prepare a proper bed for the pipe. Crushed stone or other such granular material, if necessary, as determined by the ENGINEER to replace subgrade material, shall be a separate pay item and classified as "Special Pipe Bedding". Removal of poor material is not a separate pay item.

Installation shall be in accordance with Lexington-Fayette Urban County Government (LFUCG) Standard Drawings and ASTM D-2321.

35.8 LAYING PIPE

The laying of pipe in finished trenches shall be commenced at the lowest point so the spigot ends point in the direction of flow.

All pipes shall be laid with ends snugly seated and true to line and grade. Supporting of pipes shall be as set out hereinbefore under Pipe Bedding and in no case shall the supporting of pipes on blocks be permitted.

Before each piece of pipe is lowered into the trench, it shall be thoroughly inspected to ensure it is clean. Each piece of pipe shall be lowered separately unless special permission is given otherwise by the ENGINEER. No piece of pipe or fitting which is known to be defective shall be laid or placed in the lines. If any defective pipe or fitting shall be discovered after the pipe is laid, they shall be removed and replaced with satisfactory pipe or fitting without additional charge. In case a length of pipe is cut to fit in a line it shall be so cut as to leave a smooth end at right angles to the longitudinal axis of the pipe. Throughout the pipe laying process, special attention shall be given to keeping the inside of the pipe free of dirt or rock.

Pipe shall not be laid on solid rock. A pad of granular material as specified in Pipe Bedding shall be used as a pipe bedding. Pipe bedding is not a separate pay item. Irregularities in subgrade in an earth trench shall be corrected by use of granular material.

When ordered by the ENGINEER, unsuitable materials in subgrades shall be removed below ordinary trench depth in order to prepare a proper bed for the pipe.

When laying of pipe is stopped for any reason, the exposed end of such pipe shall be closed with a plywood plug fitting into the pipe bell, so as to exclude earth or other material, and precautions taken to prevent flotation of pipe by runoff or seepage into trench.

No backfilling (except for securing pipe in place) over pipe will be allowed until the ENGINEER has an opportunity to make an inspection of the joints, alignment, and grade in the section laid.

A concrete collar shall be provided where two dissimilar materials meet if a seal can not be made between the existing sanitary sewer and the new Pipe. It shall extend above and below the pipe joint 6" and be 18" in length, minimum.

35.9 BACKFILLING PIPELINE TRENCHES

Backfilling or pipeline trenches shall be accomplished in accordance with Lexington-Fayette Urban County Government Standard Drawings. All backfill shall be placed in a manner approved by the ENGINEER, and those materials requiring compaction shall be carefully compacted to avoid displacement of the pipe. Compaction shall be accomplished by hand-tamping or by approved mechanical methods.

Before final acceptance, the CONTRACTOR will be required to level off all trenches or to bring the trench up to grade. The CONTRACTOR shall also remove from roadways, rights-of-way and/or private property all excess earth or other materials resulting from construction.

In the event that pavement is not placed immediately following trench backfilling in paved areas, the CONTRACTOR shall be responsible for maintaining the trench surface in a level condition at proper pavement grade at all times.

35.10 SETTLEMENT OF TRENCHES

Whenever lines are in, or cross, driveways and streets, the CONTRACTOR shall be responsible for any trench settlement which occurs within these rights-of-way within one year from the time of final acceptance of the work. If paving shall require replacement because of trench settlement within this time, it shall be replaced by the CONTRACTOR at no extra cost to the OWNER. Repair of settlement damage shall meet the approval of the OWNER and/or the Kentucky Department of Highways.

35.11 TESTING OF GRAVITY SANITARY SEWERS

On all projects involving installation of sanitary sewer lines, the finished work shall comply with provisions listed below or similar requirements which will ensure equal or better results:

1. After the collecting and/or outfall lines or system have been brought to completion, prior to final inspection, the CONTRACTOR shall rod out the entire system by pushing through each individual line in the system, from manhole to manhole, appropriate tools for removal from the lines of any and all dirt, debris and trash.

2. During the final inspection, the ENGINEER will inspect each individual line, from manhole to manhole, either by use of lights or other means at his disposal to determine whether the completed lines are true to line and grade as laid out or as shown on the plans.

3. The ENGINEER will require that the CONTRACTOR pass through the system under momentum a wooden ball of a diameter of one-inch less than the nominal diameter of the pipe, except that no ball larger than eight (8) inches in diameter shall be used.

4. Deflection tests shall be performed on a flexible pipe. The test shall be conducted after final backfill has been in place at least 30 days to permit stabilization of the system. No pipe shall exceed a deflection of 5 percent. If deflection exceeds 5 percent, pipe shall be replaced or corrected. The rigid ball cylinder or mandrel used for deflection test shall have a diameter not less than 95 percent of the base inside diameter or average inside diameter of the pipe depending on which is specified in the ASTM Specification, including the appendix, to which the pipe is manufactured. The pipe shall be measured in compliance with ASTM D-2122 Standard Test Method of Determining Dimensions of Thermoplastic Pipe and Fittings. The test shall be performed without mechanical pull devices.

5. All lines or sections of lines that are found to be laid improperly with respect to line or grade, that are found to contain broken or leading sections of pipe, or are obstructed in such a manner that they cannot be satisfactorily corrected otherwise, shall be removed and replaced at the CONTRACTOR'S expense.

6. The CONTRACTOR shall lay sewer lines, including house connections, so that the access of ground water or loss of water from the sewer system or other gravity flow piping which does not normally flow full will be limited to 10 gallons per inch diameter per mile per day. This limitation is inclusive of manholes, sewers, house connections, and appurtenances. This requirement may be applied to a portion of the contract work, such as the sewers in a separate drainage area or to a single section of the line between two manholes.

7. To test for leaks, the ENGINEER will require that all completed piping as specified herein after backfilling be tested by low-pressure air test, exfiltration, or infiltration test. Low pressure air test will be restricted to sewer up through 24-inch diameter. Sewer larger than 24-inch diameter shall receive an exfiltration test if above ground

water, or infiltration test if below ground water. Should the low pressure air test results be inconclusive, or at the request of the ENGINEER, an exfiltration or infiltration test will be required on the low pressure air tested segments. Services, labor, equipment, and supplies required for all tests shall be furnished by the CONTRACTOR. These tests shall not be required on "lives" sewers.

8. Smoke testing may be used only to locate leaks and in no case shall be considered conclusive. In all cases the smoke test shall be accomplished by an air test, exfiltration test or infiltration test. Smoke testing may only be performed where ground water is low and smoke is blown into a conduit that is properly sealed. All such leaks or breaks discovered by the smoke test shall be repaired and/or corrected by the CONTRACTOR at his own expense. Equipment and supplies required for smoke tests shall be furnished by the CONTRACTOR. The CONTRACTOR may also be required to smoke test the first section (manhole-to-manhole) of each size of pipe and type of joint on each construction contract prior to backfilling to establish and check laying and jointing procedures. Other supplementary smoke tests prior to backfilling may be performed by the CONTRACTOR at his option; however, any such test shall not supplant the final tests of the completed work unless such final tests are waived by the ENGINEER.

9. The low pressure air test shall consist of meeting a required holding time during measured pressure drop. The maximum test pressure shall be 4.0 psi (minimum pressure shall be 3.5 psi), with the allowable pressure loss being 1.0 psi during calculated holding time. Holding time shall be calculated from the equation:

0.472 X pipe diameter (inches) = holding time (minutes)

This formula shall apply for all sizes of pipe and lengths of line tested. Failure to maintain calculated holding time during pressure drop from 3.5 psi to 2.5 psi for each section shall be deemed test failure.

10. In order to test for infiltration the ENGINEER may also require exfiltration tests on section of pipe between manholes after it has been laid but prior to backfilling. Exfiltration tests shall be conducted by plugging the lower end of the section of sewer to be tested and filling the sewer with water to a point approximately five feet above the invert at the lower end and at least one foot above the pipe at the upper end, observing leakage at all joints and measuring the amount of leakage for a given interval count. Exfiltration shall not exceed 110 percent times the infiltration limits set out hereinabove. All observed leaks shall be corrected even though exfiltration is within the limits.

11. To test for infiltration, the ENGINEER may also require that the CONTRACTOR plug the ends of all lines at the manhole so that measurements may be made at each section of sewer line. Infiltration tests shall consist of weir measurements to determine quantity if any infiltration. Measurements shall be taken at line locations directed by the ENGINEER. This infiltration test will not be made until the sewer line is completed, and the CONTRACTOR will be required to correct all conditions that are

conducive to excessive infiltration that may be required to relay such sections of the line that may not be corrected even though infiltration is within allowable limits.

12. A closed circuit television(CCTV) survey is required for all newly installed sewer pipe, and/or any designated existing pipe. The television survey shall be performed according to Section 26 of these Specifications.

35.12 HOUSE CONNECTIONS

In those instances where 4-inch or 6-inch sanitary sewer pipe is used to connect a house to a sewer main, installation must be done by a Licensed Master Plumber. All House Laterals shall be connected per LFUCG Standard Drawings 230, 231, and 232. Lateral Cleanout shall be provided and installed as per the Two-Way Cleanout Drawing included in the Standard Drawing Section of these Specifications.

35.13 CLEAN UP

Upon completion of installation of the piping and appurtenances, the CONTRACTOR shall remove any surplus construction materials resulting from the Work. The CONTRACTOR shall grade the ground on each side of pipe trenches in a uniform and neat manner leaving the construction area in a shape as close as possible to the original ground line.

35.14 BY-PASS PUMPING

By-pass pumping shall be used to divert flow around an existing sanitary sewer most typically when a segment of sewer is being replaced. At least 24 hours prior to commencing by-pass pumping, the Contactor shall notify all affected residents, e.g; residents with lateral connections feeding the sewer segment to be replaced.

Contractor shall furnish and maintain all equipment necessary for by-pass pumping, including fully automatic self-priming trailer mounted pump, plugs, valves, pipe, hose, fuel and all incidental materials.

Pumping conditions will be site-specific. LFUCG will provide Contractor with suction lift, static head, distance and flow requirements. Pump shall be shall be capable of passing a 3" solids at 500 gpm @ 100 ft TDH with up to 20 ft of suction lift.

35.15 BASIS OF PAYMENT

Accepted quantities of gravity sanitary sewer line shall be paid for at the Contract Unit Price per linear foot and shall be full compensation for all Work under this Section.

All labor, ancillary materials, equipment, excavation, bedding, backfilling, testing (except CCTV) and incidental items necessary to the Work shall be included in the payment for PVC Sanitary Sewer or Ductile Iron Sanitary Sewer. Items such as rock excavation, removal of existing pipe, concrete collars and removal of pavement and sidewalk are paid under other UPC bid items.

A closed circuit television (CCTV) survey will be paid for at the Contract Unit Price as described in Section 26 of these Specifications.

Bypass pumping, when required to perform the work specified, will be paid for at the Contract Unit Price per day, and shall be full compensation for all labor (including set-up and break-down), materials, ancillary equipment, and fuel. The day shall commence at start-up of the pump and end when the pump is no longer in use.

TECHNICAL SPECIFICATIONS

SECTION 36 – TWO WAY SEWER SERVICE CLEANOUT

36.1 SCOPE

Work under this Section shall include all labor, excavation, materials, equipment, bedding and backfilling in accordance with the LFUCG Standard Drawing 234 in Appendix A and all incidentals necessary to construct a Two Way Sewer Service Cleanout (including tee, pipe, plug, frame, cover and concrete pad).

Any removal of pavement and sidewalk and any rock encountered shall be paid for under appropriate Bid Items in addition to the prices for Two Way Sewer Service Cleanouts.

36.2 BASIS OF PAYMENT

Accepted quantities for Two-Way Sewer Service Cleanouts will be paid for at the Contract Unit Price as quoted and paid per each satisfactorily placed. Payment shall include all labor, materials, connections, equipment, excavation, bedding, backfilling, and incidental items necessary for providing a two-way cleanout and connecting to the existing house lateral.

Surface restoration (seeding, sod, pavement, etc.) shall be paid separately in accordance with the appropriate Bid Items. Pay limits for surface restoration shall be in accordance with the Standard Drawings.

TECHNICAL SPECIFICATIONS

SECTION 37- SANITARY SEWER TEES AND BRANCHES

37.1 SCOPE

Work for this section consists of furnishing and installing Sanitary Sewer Tees and up to six (6) feet of branch or stub line (dimensions as specified by the Purchase Order). Branches and fittings shall be provided and laid as and where directed. T-branches, placed in the sewer for property service connection, shall be located by the CONTRACTOR, as directed by the ENGINEER, at such points in the sewer so as to result in the property service connection having the shortest length possible between the sewer and property line or easement line, unless otherwise indicated on the Drawings or directed by the ENGINEER. T-branches shall be plugged in such a manner that it will facilitate convenient connection to a service line. Materials shall be as approved and accepted by the ENGINEER and correspond to the specification for the type of sanitary sewer pipe material used.

In those instances where 4 inch or 6 inch sanitary sewer pipe is used to connect a house to a sanitary sewer main, installation must be done by a Licensed Master Plumber.

37.2 BASIS OF PAYMENT FOR SANITARY SEWER TEES

Accepted quantities for Sanitary Sewer Tees will be paid for at the Contract Unit Price as quoted for various sizes and pipe materials (which shall be full compensation for all Work under this Section) and paid per specified Sanitary Sewer Tee and up to six (6) feet of related sewer satisfactorily placed. Concrete caps shall be paid under the Bid Item for unfinished concrete. Surface restoration (seeding, sod, pavement, etc.) will be paid separately under the appropriate Bid Items and the pay limits for surface restoration shall be in accordance with the appropriate Standard Drawings.

All labor, materials, equipment, excavation, bedding, and backfilling shall be incidental to the placement of Sanitary Sewer Tee.

37.3 BASIS OF PAYMENT FOR BRANCHES INCLUDING FITTINGS

Accepted quantities for Sanitary Sewer Branch or Stub line in excess of six (6) feet will be paid for at the Contract Unit Price as quoted for various sizes and pipe materials (which shall be full compensation for all Work under this Section) and paid per linear foot of specified Sanitary Sewer Branch or Stub line satisfactorily placed. Concrete caps shall be paid under the Bid Item for unfinished concrete. Surface restoration (seeding, sod, pavement, etc.) will be paid separately under the appropriate Bid Items and the pay limits for surface restoration shall be in accordance with the appropriate Standard Drawings.

All labor, materials, equipment, excavation, bedding, and backfilling shall be incidental to the placement of Sanitary Sewer.

TECHNICAL SPECIFICATIONS

SECTION 38 - FENCING

38.1 SCOPE

Work for this section consists of furnishing and installing Woven Wire, Chain Link or Privacy Fencing (type as specified by the Purchase Order). Woven Wire and Chain Link shall conform to the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, Section 721, 722, 816, and 817 current edition, and/or LFUCG Standard Drawings 308, 310, 312 and 314, (as directed by the ENGINEER), and shall include all labor, materials, equipment and incidentals necessary to complete the Work. Privacy Fencing shall match existing fencing as closely as possible and shall include all labor, materials, equipment and incidentals to complete the work.

38.2 BASIS OF PAYMENT

38.2.1 WOVEN WIRE AND CHAIN LINK FENCING

Accepted quantities for Woven Wire or Chain Link Fencing will be paid for at the Contract Unit Price as quoted (which shall be full compensation for all Work required under this Section) per linear foot of Fencing satisfactorily placed. All labor, gates, materials, equipment, and excavation shall be incidental to the placement of Fencing.

38.2.2 PRIVACY FENCING

Accepted quantities for Privacy Fencing will be paid for at the Contract Unit Price as quoted (which shall be full compensation for all Work required under this Section except for the cost of the posts, rails, panels, gates and gate hardware) per linear foot of Privacy Fencing satisfactorily placed. All labor, other materials not identified above, equipment, and excavation shall be incidental to the placement of Fencing.

The cost of the Privacy Fence posts, rails, panels, gates and gate hardware shall be paid for at cost plus 15% for overhead and profit (to be submitted as Contract progresses and as needed). No payments will be made for Privacy Fencing without proper invoices for materials furnished.

TECHNICAL SPECIFICATIONS

SECTION 39 - SMALL EQUIPMENT WITH OPERATOR

39.1.A SMALL BACKHOE/LOADER WITH OPERATOR - SCOPE

Work under this Section shall consist of furnishing a small rubber tire backhoe of Case 580 or equivalent with operator for excavation and loading at various locations to be determined. The backhoe shall be in good working order, and with the trained operator, be capable of completing the required Work in a timely manner. Should the ENGINEER feel that the backhoe and/or operator are not adequate, he may reject either the backhoe and/or operator and no payment will be made.

39.1.B SMALL BACKHOE/LOADER WITH OPERATOR - BASIS OF PAYMENT

Accepted equipment and operator time for a Small Backhoe/Loader with an Operator 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 hour of Work satisfactorily completed. No direct payment will be made for delivery time to or from the Work site.

39.2.A SKID LOADER WITH OPERATOR - SCOPE

Work under this Section shall consist of furnishing a skid loader of Case SR 250 or equivalent with operator for loading, lifting, augering, etc., at various locations to be determined. The skid loader shall be in good working order, and with the trained operator, be and capable of completing the required Work in a timely manner. Should the ENGINEER feel that the skid loader and/or operator are not adequate, he may reject either the skid loader and/or operator and no payment will be made.

39.2.B SKID LOADER WITH OPERATOR - BASIS OF PAYMENT

Accepted equipment and operator time for a Skid Loader and Operator 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 hour of Work satisfactorily completed. No direct payment will be made for delivery time to or from the Work site.

39.3.A JACKHAMMER WITH OPERATOR - SCOPE

Work under this Section shall consist of furnishing an excavator with a hydraulic hammer of Case CX130C or equivalent with operator for jack hammering at various locations to be determined. The backhoe shall be in good working order, and with the trained operator, be capable of completing the required Work in a timely manner. Should the ENGINEER feel that the excavator/hammer and/or operator are not adequate, he may reject either the excavator/hammer and/or operator and no payment will be made.

39.3.B JACKHAMMER WITH WORKER - BASIS OF PAYMENT

Accepted equipment and operator time for a Jackhammer with Operator 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 hour of Work satisfactorily completed. No direct payment will be made for delivery time to or from the Work site.

TECHNICAL SPECIFICATIONS

SECTION 40 - SINGLE OR TRIPLE AXLE DUMP TRUCK

40.1 SCOPE

Work under this Section shall consist of furnishing a single or triple axle dump truck with minimum eight (8) cubic yard capacity with driver for miscellaneous hauling of dirt and/or rock and other materials as requested by the ENGINEER. The truck and driver supplied shall be in good working order and capable of completing the Work in a timely manner. Should the ENGINEER feel that the truck and/or driver are not adequate, he may reject either the truck and/or driver and no payment will be made.

40.2 BASIS OF PAYMENT

Accepted truck and driver for a Single Axle Dump Truck or Triple Axle Dump Truck 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 hour of Work satisfactorily completed. Payment shall be based on accepted hours of working under the direction of the ENGINEER.

The cost of the material (such as clean fill) or tipping fees (such as excess soil disposal) if applicable, shall be paid for at cost plus 15% for overhead and profit (to be submitted as Contract progresses and as needed). LFUCG must approve the tonnage rate prior to commencement of work. Furthermore, no payments will be made without proper invoices for materials furnished or disposed.

TECHNICAL SPECIFICATIONS

SECTION 41 – EROSION AND SEDIMENT CONTROL

41.1 SCOPE

This section describes requirements for the planning and implementation of non-structural and structural best management practices (BMPs) to be used for erosion and sediment control during construction activities in Fayette County, Kentucky. Erosion control refers to efforts to maintain soil on a construction site. Sediment control refers to keeping the material that erodes from leaving the site.

The preparation of an erosion and sediment control plan integrating the non-structural and structural practices and procedures is a requirement for all construction projects that disturb one acre or more. The plan shall be submitted to the LFUCG Division of Engineering before beginning construction. Once the erosion and sediment control practices have been constructed, a grading permit can be obtained. For more information on permits, see Chapter 2 of the Storm Water Manual.

Work for this Section shall be in accordance to the Lexington-Fayette Urban County Government Standard Drawings and Chapter 11 of the Storm Water Manual and shall include all labor, excavation, materials, equipment, and incidentals necessary to complete the work.

Structural Sediment Control BMPs
Check Dam
A check dam is a small temporary dam constructed across a swale or drainage ditch. Check dams shall be installed in newly-constructed, vegetated, open channels, which drain 10 acres or less. Check dams shall be constructed prior to the establishment of vegetation.

Stone check dams shall be constructed of KYTC Class II channel lining.

Regular inspections shall be made to ensure that the measure is in good working order and the center of the dam is lower than the edges. Erosion caused by high flows around the edges of the dam shall be corrected immediately, and the dam shall be extended beyond the repaired area. Check dams shall be checked for sediment accumulation after each rainfall. Sediment shall be removed when it reaches one-half of the original height or before. Check dams shall remain in place and operational until the drainage area and channel are completely stabilized or up to 30 days after the permanent site stabilization is achieved.

Sediment Trap
A sediment trap is formed by an excavation of an area in a suitable location to retain sediment and other waterborne debris. Sediment traps shall be used where physical site conditions or other restrictions prevent other erosion control measures from adequately controlling erosion and sedimentation. Sediment traps may be used down slope from construction operations that expose areas to erosion. Sediment traps shall be removed after the exposed areas are adequately protected against erosion by vegetative or mechanical means. Sediment traps shall be installed below all disturbed areas of less than 5 acres that do not drain to a sediment pond

The area to be excavated shall be cleared of all trees, stumps, roots, brush, boulders, sod, and debris. All channel banks and sharp breaks shall be sloped to no steeper than 1:1. All topsoil containing excessive amounts of organic matter shall be removed. Seeding, fertilizing, and mulching of the material taken from the excavation shall comply with the applicable seeding sections of these specifications. Any material excavated from the trap shall be placed in one of the following ways so that it will not be washed back into the pond by rainfall:

- uniformly spread to a depth not exceeding 3 feet and graded to a continuous slope away from the trap
- uniformly placed or shaped reasonably well with side slopes assuming the natural angle of repose for the excavated material behind a berm width not less than 12 feet

Sediment shall be removed from the trap when the capacity is reduced to 50 percent of the design volume. Plans for the sediment trap shall indicate the methods for disposing of sediment removed from the trap.

Sediment Pond

A sediment pond is formed by a barrier or dam constructed across a drainage way or other suitable location to retain sediment and other waterborne debris.

Sediment ponds are appropriate where physical site conditions or other restrictions prevent other erosion control measures from adequately controlling erosion and sedimentation. Sediment ponds may be used down slope from construction operations that expose areas to erosion. Sediment ponds shall be removed after the exposed areas are adequately protected against erosion by vegetative or mechanical means. A sediment pond shall be installed at the outlet of a disturbed area of 5 acres or more. The maximum drainage area for a single pond is 100 acres. The pond shall be designed to reduce peak discharges during construction to pre-development levels for 10-year and 100-year storms.

Design and construction shall comply with all federal, state, and local laws, ordinances, rules, and regulations regarding dams.

Sediment shall be removed from the pond when the capacity is reduced to 50 percent of the design volume. Plans for the sediment pond shall indicate the methods for disposing of sediment removed from the pond.

Silt Fence

Silt fence is a temporary barrier to trap sediment that consists of a filter fabric stretched between supporting posts, with the bottom entrenched in the soil and with a wire support fence. Silt fence shall be installed down-slope of areas to be disturbed prior to clearing and grading. Silt fence must be situated such that the total area draining to the fence is not greater than one-fourth acre per 100 feet of fence. Silt fence shall be used for storm drain drop inlet protection and around soil stockpiles.

Silt fences are appropriate where the size of the drainage area is no more than one-fourth acre per 100 feet of silt fence length; the maximum slope length behind the barrier is 100 feet; and

the maximum gradient behind the barrier is 50 percent (2H:1V). Silt fences can be used at the toe of stockpiles where the slope exceeds 2H:1V, but in that case, the slope length should not exceed 20 feet.

Silt fences can be used in minor swales or ditch lines where the maximum contributing drainage area is no greater than 2 acres. Under no circumstances shall silt fences be constructed in streams or in swales or ditch lines where flows are likely to exceed 1 cubic foot per second (cfs).

Synthetic filter fabric shall be a pervious sheet of propylene, nylon, and polyester or ethylene yarn and shall be certified by the manufacturer or supplier as conforming to the following requirements:

Physical Property Requirements

- Filtering Efficiency 75% (minimum)
- Tensile Strength at 20% 50 lbs./linear inch (minimum)
- Flow Rate 0.3 gal./ sq. ft/ min. (minimum)
- Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life at a temperature range of 0°F to 120°F.
- Posts for synthetic fabric silt fences shall be either 2-inch by 2-inch wood or 1.33 pounds per linear foot steel with a minimum length of 5 feet. Steel posts shall have projections for fastening wire to them. Wire fence reinforcement for silt fences shall be a minimum of 36 inches in height, a minimum of 14 gauge and shall have a mesh spacing of no greater than 6 inches.

Silt fences and filter barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately. Knocked down fences shall be repaired at the end of each day. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits shall be removed after each storm event or when deposits reach approximately one-half the height of the barrier. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform with the existing grade, prepared, and seeded. Silt fences shall be replaced every 6 months.

Storm Drain Inlet Protection

A sediment filter installed around a storm drain drop inlet or curb inlet is referred to as storm drain inlet protection. Curb inlet protection is not required if other soil stabilization and sediment control measures are in place to prevent sediment from entering the street. Storm drain inlet protection shall only be used around drop inlets when the up-slope area draining to the inlet has no other sediment control.

The drainage area shall be no greater than 1 acre.

The inlet protection device shall be constructed in a manner that will facilitate cleanout and disposal of trapped sediment and minimize interference with construction activities. Inlet

protection devices shall be constructed in such a manner that any resultant ponding of storm water will not cause excessive inconvenience or damage to adjacent areas or structures.

The structure shall be inspected after each rain, and repairs made as needed. Sediment shall be removed and the device restored to its original dimensions when the sediment has accumulated to one-half the design depth of the filter. If a stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone must be pulled away from the blocks, cleaned, and replaced. Structures shall be removed after the drainage area has been properly stabilized.

Filter Strips

A filter strip is a strip of vegetation for removing sediment and related pollutants from runoff. Filter strips are also called vegetative filters. Filter strips shall be used on each side of permanent constructed channels. The buffer strips described in the Storm Water Manual satisfy the filter strip requirement for streams and wetlands.

Filter strips shall only be used to remove sediment from overland flow.

Existing grass or grass/legume mixtures used as filter strips shall be dense and well established, with no bare spots. When establishing new seeding, consideration shall be given to wildlife needs and soil conditions on the site. See Storm Water Manual for seeding mixture

When planting filter strips, prepare seedbed, incorporate fertilizer, and apply mulch consistent with the seeding sections of this manual. Filter strips using areas of existing vegetation shall be over seeded, as necessary, with the above mixtures to obtain an equivalent density of vegetation. The over seeding shall be accomplished prior to the land disturbing activity.

Filter strips shall be inspected regularly to ensure that a healthy vegetative growth is maintained. Sediment shall be removed when it becomes visible in the filter. Construction traffic shall not be permitted to drive upon filter strips.

Stream Crossing

A temporary stream crossing is a temporary structural span installed across a flowing water course for use by construction traffic. Structures may include bridges, round pipes, or pipe arches. The purpose of a temporary stream crossing is to provide a means for construction traffic to cross flowing streams without damaging the channel or banks and to keep sediment generated by construction traffic out of the stream. Stream crossings shall be used in cases where construction traffic, permanent traffic, or utilities must cross existing post development floodplains. If the drainage area exceeds 1 square mile and a structure is necessary, the structure must be designed by a professional engineer licensed in Kentucky. If applicable, U.S. Army Corps of Engineers and the Kentucky Division of Water permits, as indicated in the Storm Water Manual, may be required.

Temporary stream crossings are applicable to flowing streams with drainage areas less than one square mile. Structures that must handle flow from larger drainage areas shall be designed as permanent structures by a professional engineer.

When using a culvert crossing, the top of a compacted earth fill shall be covered with six inches of KTC No. 57 stone. No. 57 stone shall also be used for the stone pads forming the crossing approaches.

Clearing and excavation of the streambed and banks shall be kept to a minimum. The structure shall be removed as soon as it is no longer necessary for project construction. The approaches to the structure shall consist of stone pads with a minimum thickness of 6 inches, a minimum width equal to the width of the structure, and a minimum approach length of 25 feet on each side.

The structure shall be inspected after every rainfall and at least once a week and all damages repaired immediately.

Pump-Around Flow Diversion
Pump-around flow diversions must be used to divert flow during excavation operations in streams. Pump-around flow diversions provide dry working conditions during construction in streams. A pump-around flow diversion shall be used to divert flow around construction activities occurring in a stream when those activities are reasonably expected to cause the erosion or deposition of sediment in the stream. Bid quotes for pump around assume a 4 inch pump.

Sandbags shall be woven polypropylene bags with approximate dimensions of 18-1/2 inches by 28 inches. Tie the ends of filled bags closed using either draw strings or wire ties.

Schedule operations such that diversion installation, in-stream excavation, in-stream construction, stream restoration, and diversion removal are completed as quickly as possible.

This control provides short-term diversion of stream flow (typically 1 day to 3 days). Additional sandbags or pumps may be required to maintain 1-foot freeboard on the sandbag checks if flow conditions change. Add sandbags as required to seal leaks in checks.

Construction Dewatering
Dewatering is the pumping of storm water or groundwater from excavation pits or trenches. The sediment-laden water must be pumped to a dewatering structure before it is discharged offsite.

The dewatering structure should be inspected frequently to ensure it is functioning properly and not overtopping. Accumulated sediment should be spread out on site and stabilized, or disposed of offsite.

41.2 BASIS OF PAYMENT

Accepted quantities for Erosion and Sediment Control will be paid for at the Contract Unit Price as quoted which shall be full compensation for all Work required under this Section: The LFUCG will make payment for the completed and accepted quantities under the following: All labor, materials (except as noted), equipment, fuel and excavation shall be

incidental to the placement and removal of Erosion and Sediment Control. Maintenance of erosion and sediment control is incidental to installation.

Check Dam	Ton
Sediment Trap (excluding geotexile)	Cubic Yard
Sediment Pond	Cubic Yard
Silt Fence	Linear Foot
Storm Water Inlet Protection	Each
Filter Strip	Square Yards
Stream Crossing (excluding pipe)	Each
Pump-Around Flow Diversion (including sand bags)	Day
Construction Dewatering	Day

Payment for a Stormwater Pollution Prevention Plan,(SWPP) a Notice of Intent (NOI-SWCA), a Notice of Termination (NOT), and a Land Disturbance Permit (LDP), will be paid in accordance with Section A.20 of these Technical Specifications.

TECHNICAL SPECIFICATIONS

SECTION 42 - GEOTEXTILE CONSTRUCTION

42.1 SCOPE

Work for this Section shall be in accordance to Kentucky Department of Highways Standard Specifications Sections 214 and 843 (Type 1 for slope protection and channel lining, Type II for underdrains, Type III for subgrade or embankment foundation stabilization, and Type IV for drainage blankets and pavement edge drains), current edition and shall include all labor, grading, materials, equipment, and incidentals necessary to complete the work.

42.2 BASIS OF PAYMENT

Accepted quantities for Geotextile Construction will be paid for at the Contract Unit Price per various types as quoted which shall be full compensation for all Work required under this Section and paid per square yard of geotextiles satisfactorily placed. All labor, materials (other than the geotextile fabric), equipment, and grading shall be incidental to the placement of geotextile fabric (Type I, Type II, Type III or Type IV).

TECHNICAL SPECIFICATIONS

SECTION 43 - EDGE KEY

43.1 SCOPE

This Work shall consist of the construction of edge keys in accordance with the Plans, Contract Documents and Specifications, and Lexington-Fayette Urban County Government (LFUCG) Standard Drawing 318 and 319, current edition.

In performing this Work, the CONTRACTOR shall furnish a neat edge along the pavement, obtained by using an approved saw to cut a smooth and straight line (approximately two (2) inches deep) in the existing pavement surface prior to breaking away the adjacent pavement. Any existing facility, which is not marked for removal by the ENGINEER, but is nevertheless removed, shall be replaced at the CONTRACTOR'S expense.

43.2 BASIS OF PAYMENT

Payment for the accepted quantity will be made at the unit bid price per linear foot, which payment shall be full compensation for all Work required by this section.

TECHNICAL SPECIFICATIONS

SECTION 44 – PIPE PLUGGING

44.1 SCOPE

Work in this section shall also conform to the Kentucky Department of Highways (KDOH) Standard Specifications, Section 708 current edition, but only to the extent that this KDOH section does not conflict with the content of the Plans, Contract Documents and Specifications.

The Work consists of construction of pipe plugs in existing storm sewer and/or gravity sanitary sewer lines, which are to be taken out of service once the corresponding new sewer lines have been put into operation. Such Work shall be performed where indicated on the Drawings and shall conform to standard practices acceptable to the Lexington-Fayette Urban County Government (Division of Engineering and Division of Water Quality).

44.2 BASIS OF PAYMENT

Accepted quantities for Pipe Plugging will be paid at the unit bid price per each as quoted for various sizes, which payment shall be full compensation for all Work required by this section.

TECHNICAL SPECIFICATIONS

SECTION 45 – FLOWABLE FILL

45.1 SCOPE

This Work shall consist of the use of flowable fill in accordance with the Plans, Contract Documents and Specifications. Work in this section shall also conform to the Kentucky Department of Highways (KDOH) Standard Specifications, Section 601 current edition, but only to the extent that this KDOH section does not conflict with the content of the Plans, Contract Documents and Specifications.

45.2 BASIS OF PAYMENT

Payment for the accepted quantity will be made at the unit bid price per cubic yard, which payment shall be full compensation for all Work required by this section. Payment shall be based on delivery tickets for flowable fill delivered and accepted for the work.

TECHNICAL SPECIFICATIONS

SECTION 46 – FIBER REINFORCED PCC PAVEMENT

46.1 SCOPE

This specification covers formed fiber-reinforced, Portland cement concrete pavement. Concrete shall be class A modified (minimum 28 day strength shall be 4,000 psi.). Thickness shall be as indicated by the bid item.

Requirements in the KDOH Standard Specifications, KDOH Standard Drawings, plans, or proposal related to Portland cement concrete pavement shall apply except that this specification has precedence in any conflict. The placement process includes mandatory 10-foot straight edge examination and surface correction during finishing. Procedures and pavement requirements are in KDOH Section 501 and its various cross references. The Work will be consider and utilize the KDOH Standard Drawings, particularly RPN-015, RPS-010 through RPS-039 (12 drawings total), RPX-010 through RPX-020 (3 drawings total), but any other standard drawing needed to successfully complete the work.

If severe drying conditions are anticipated, a pour will not be permitted unless an approved method of inhibiting drying is available.

The desired slump for slip forming is 2 inches. The slump may be as much as 7 inches when forms are used.

The typical section for the pavement and its base and location of all sawed and sealed joints shall be as established by the Purchase Order for the Work.

- All transverse contraction joints shall be at right angles to the roadway. The joints will be sawed but without dowels.

- Spacing for contraction joints shall not exceed 18 feet.

- Joints may be sawed conventionally or with a soft cut saw to a depth of 1 ½ inch. All joints shall be sawed, then sealed with Dow-Corning silicone 890SL or equivalent. Immediately prior to sealing, joints shall be thoroughly cleaned, including sand blasting in both directions. Backing strips are required. Sealing shall be in accordance with KDOH Standard Drawing RPX-020 and KDOH Section 501.03.17.

- Traffic shall not be permitted on newly sealed joints until the silicone seal is sufficiently "skinned over" to prevent tracking due to traffic. The skin-over time for silicone seals typically is one hour; however, longer times may be required, depending upon specific weather conditions. The CONTRACTOR shall be responsible for replacement/repair of damaged seals until curing is complete (21 days).

- It is anticipated that each lane will be placed in a continuous operation without transverse construction joints. Before placement of a lane commences, the CONTRACTOR shall provide assurance to the ENGINEER that the concrete supplier has committed enough equipment to accomplish a continuous pour.

- Synthetic fibers shall be added to the mixture at the plant or otherwise, as recommended by the manufacturer. Fiber length shall be ¾-inch. The fibers shall be graded, fibrillated, polypropylene fibers and shall be added to the fresh concrete at a dosage rate of 3.0 pounds per cubic yard of concrete (or at a lesser rate if directed by the ENGINEER or the Purchase Order). The cost of the fibers and any additional labor cost shall be included in the bid unit price for Fiber-reinforced Concrete.

46.2 BASIS OF PAYMENT

Accepted quantities for Fiber-reinforced PCC Pavement will be measured to the nearest cubic yard. Payment will be made at the unit bid price per cubic yard. Payment shall be based on delivery tickets for PCCP delivered and accepted for the work. The price includes concrete and all other material, plant, labor, joint sawing, sealing and incidentals necessary to install Fiber-reinforced PCC Pavement.

TECHNICAL SPECIFICATIONS

SECTION 47 – SINGLE BLOCK MASONRY RETAINING WALL

47.1 SCOPE

This Work shall consist of furnishing all materials and construction of a modular concrete gravity retaining wall system (Keystone, VERSA-LOK or approved equal) in accordance with these specifications, manufacturer's recommendations and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans. Work includes furnishing and placing concrete blocks, caps, and pins. Work also includes excavation, preparing foundation soil, installing leveling pad, drainage fill and backfill to the lines and grades shown on the construction drawings. This modular concrete gravity retaining wall will be limited to the maximum height recommended by the manufacturer as measured from the base of the wall to the top.

47.2 BASIS OF PAYMENT

Accepted quantities of Single Block Masonry Retaining Wall will be paid at the Contract Unit Price per square foot as measured from the free face, which shall be full compensation for all Work required by this section. It does not include the material cost of drain pipe, drainage fill, backfill material brought from off-site, and materials for the leveling pad as specified in the construction drawings. Those items shall be paid for at their respective unit bid price determined elsewhere under this Contract. Where such a unit cost is not furnished, the item shall be separately negotiated.

TECHNICAL SPECIFICATIONS

SECTION 48 – EROSION CONTROL BLANKET

48.1 DESCRIPTION OF WORK

The Work covered by this specification consists of furnishing all materials, equipment, and labor for preparing the seedbed, fertilizing, seeding, and installation of permanent Erosion Control Blankets in the areas as directed by the ENGINEER.

There are two types of erosion control blankets. The Degradable Erosion Control Mat serves as a slope protector and is designed to hold seeds and soil in place until vegetation is established. The Turf Reinforcement Mat (TRM) serves as a permanent erosion control device designed to retain seed and soil using durable synthetic materials stabilized against ultraviolet degradation and inert to chemicals normally encountered in soil.

48.2 MATERIALS

Degradable Erosion Control Mat shall be woven from a chosen material and is meant to slow down the speed at which water moves across the surface. The material chosen is usually something with lots of ridges and obstructions for the water to slow down on. There are many different types of erosion control mats, some that are synthetic and some that are natural. There are even a few that are both synthetic and natural. These mats can be made out of straw, coconut fiber, aspen fiber, jute, and polypropylene (plastic).

Reinforcement shall be Contech Ero-Mat or approved equal or equivalent. The erosion control matting shall be a minimum width of 6.5 feet and approximately 1/8 inch to ½ inch thick. The mat shall be made with weed free chopped straw or equivalent evenly distributed on photodegradable polypropylene mesh and attached with high strength thread.

Turf Reinforcement Mat-Turf Reinforcement shall be Contech TRM C-45 or approved equal. The erosion control matting shall be a minimum width of 6.5 feet with approximately ½-inch x ½-inch mesh openings: weighing not less than 10 ounces per square yard. Mat fasteners shall be stakes or staples. Stakes shall consist of wood, shall have a minimum length of six inches, and shall be installed flush to the ground. Staples shall be U-shaped and made from steel wire. The staples shall have a minimum width of one inch and a minimum length of six inches. Turf Reinforcement Mat should be used after proper soil preparation, fertilization, and seeding. Installation of Turf Reinforcement Mat shall conform to the details shown in the drawings.

Seed-Seed shall consist of Kentucky Bluegrass sown at the rate of 12 lbs/1,000 sq. ft. or Finelawn or other turf type fescue at a rate of 3 lbs/1,000 sq. ft.; add ½ lb of Poa Trivialis for very heavy shade or otherwise customize as directed by ENGINEER. The desires of the owner or the species currently being used should be considered. Seed labeled in accordance with US Department of Agriculture Rules and Regulations under the Federal Seed Act shall be furnished. Seed shall be furnished in sealed, standard containers unless written exception

is granted. Seed that is wet or moldy or that has been otherwise damaged in transit or storage will not be acceptable.

Preparation of ground surface-The surface shall be suitably tilled or scraped such that the top 3 to 4 inches of soil is loose and the soil condition is acceptable to the ENGINEER. The Work shall be performed only during periods when, in the ENGINEER'S opinion, beneficial results are likely to be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed.

Fertilizer-10x10x10 fertilizer and agricultural lime will be applied at 28 lbs./1,000 sq. ft. and 150 lbs./1,000 sq. ft., respectively.

Seeding-Seed shall be broadcast either by hand or with approved hydraulic seeding equipment, as specified herein before at the rates herein before specified. Seed shall be distributed uniformly over designated areas. Half of seed shall be sown with sower moving in one direction, and the remainder with sower moving at right angles to the first sowing. Seeds shall be covered to an average depth of 1/4-inch hand rake. Seed shall not be broadcast during windy weather.

48.3 PROTECTION AND MAINTENANCE

Protection shall be provided against traffic or other use by erecting barricades immediately after treatment is completed, and by placing warning signs, as directed, on various areas.

Seeded areas shall be maintained until all seeding work or designated portions thereof have been completed and accepted. Any damage shall be repaired, and mulch material that has been removed by wind or other causes shall be replaced and secured.

48.4 ESTABLISHMENT

The CONTRACTOR shall be responsible for proper care of seeded areas while grass is becoming established. Where seeding work is done after the acceptance of other work under this Contract, the grass will be considered to be established and ready for acceptance when it reaches an average height of three inches over all seeded areas.

48.5 REPAIR

When any portion of the surface becomes eroded or otherwise damaged or treatment is destroyed, the affected portion shall be repaired to reestablish condition and grade of soil and treatment prior to injury, as directed. Repair work required because of faulty operations or negligence on the part of the CONTRACTOR shall be performed without cost to the OWNER.

48.6 MEASUREMENT AND PAYMENT

The unit of measure for Erosion Control Blanket: Degradable Erosion Control Mat or Turf Reinforcement Mat will be the square yard. Payment for Degradable Erosion Control Mat or Turf Reinforcement Mat will be the Contract Price per square yard as exposed, which shall include all costs in connection with preparation, seeding, and installation of Erosion Control Blanket: Degradable Erosion Control Mat or Turf Reinforcement Mat. Payment as specified above shall be considered full compensation for all equipment and incidentals necessary to perform the work as required.

TECHNICAL SPECIFICATIONS

SECTION 49 – PROJECT SIGN

49.1 SCOPE

The Work covered by this specification consists of furnishing all materials, equipment, and labor for erecting the Project Sign as indicated in the LFUCG Standard Drawing 323. All statements included with the drawing are pertinent with the exception of Line 1. Payment for the Project Sign will be as indicated below.

49.2 BASIS OF PAYMENT

Accepted quantities for Project Sign will be paid for at the Contract Unit Price as quoted per each (which shall be full compensation for all Work under this Section) and paid per specified Project Sign satisfactorily placed. All labor, materials, equipment, and excavation shall be incidental to the placement of Project Sign.

TECHNICAL SPECIFICATIONS

SECTION 50 - STEEL W BEAM GUARDRAIL & END TREATMENTS

50.1 SCOPE

Work for this Section shall include all labor, materials, excavations, equipment, and incidentals necessary to construct Steel W Beam Guardrail in accordance with Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, Section 719 and 814 requirements and Kentucky Department of Highways Standard Drawings, latest edition.

50.2 BASIS OF PAYMENT

Accepted quantities for Steel W Beam Guardrail 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 linear foot of guardrail satisfactorily placed. Unless noted otherwise in the drawings, all steel W beam guardrail shall include two (2) Type 2 Terminal Sections. All other end treatments for guardrail shall be bid separately. All labor, materials, equipment, and excavation shall be incidental to the placement of Steel W Beam Guardrail.

TECHNICAL SPECIFICATIONS

SECTION 51 – ARTICULATING CONCRETE BLOCK

51.1 SCOPE

All Work for this Section shall consist of installation of Articulating Concrete Blocks(ACB). It shall include grading and installation of geotextile filter fabric and articulating concrete blocks.

51.2 MATERIALS

ARTICULATING CONCRETE BLOCKS shall be four-inch thick blocks, and shall be **ARMORLOC™ 3510** (mfgrd by Armortec of Bowling Green, KY), **ARMORFLOC™** (distributed by ConTech of Middletown, OH), **GEOLINK™ PL41216** (manufactured by PetraTech/American Concrete Products of Woodstock, IL), or approved equal. Submit cut sheets and a sample before any construction commences.

The GEOTEXTILE FILTER FABRIC placed under the ACB shall be a woven monofilament geotextile with a minimum weight of 4 oz./sq. yd. and shall be **MARAFI 5XT , MARAFI FW500**, or equal as approved by the ENGINEER.

51.3 CONSTRUCTION METHODS

ARTICULATING CONCRETE BLOCKS shall be installed according to the plans, details, and manufacturer's instructions.

51.4 BASIS OF PAYMENT

Accepted quantities shall be paid for at the Contract Unit Price per square yard as quoted as in the Bid Schedule and shall be full compensation for all Work under this Section including geotextile filter fabric. All labor, materials, equipment, excavation, and grading shall be incidental to the installation of ARTICULATING CONCRETE BLOCKS.

TECHNICAL SPECIFICATIONS

SECTION 52 – RCP PIPE AND MANHOLE REPAIRS

(REINFORCED CONCRETE PIPE (RCP) CRACK REPAIRS AND MANHOLE REHABILITATION)

52.1 SCOPE:

Aging cracked reinforced concrete pipe and manholes may require repair prior to replacement. Contractor shall be solely responsible for personnel safety during the execution of this work. Normally, unless otherwise noted, a closed circuit television video tape will be required after all pipe work is completed. See separate specification concerning this inspection.

52.2 GENERAL:

The following is a procedure for the repairs to a cracked reinforced concrete pipe or manhole. Note that the minimum pipe size to be repaired by this section shall be 30" diameter. If cracks leak with any water flow at the proposed time of repair, repairs must be delayed until water flow stops. If water flow does not stop before planned repair time, do not proceed but contact ENGINEER for revised instructions on the use of alternate but similar materials.

52.3 PRODUCTS:

All products shall be:

- Xypex Patch'n Plug as distributed by The Williams Coatings Consultants, Inc., of Nashville, TN.
- Strong Seal QSR as manufactured by Strong Seal Inc (SSI), of Pine Bluff, Arkansas.
- or ENGINEER approved equal. Note any proposed substitute must be submitted prior to any work commencement and approved in writing .

Submit product cut sheets for intended product prior to any work.

52.4 APPLICATION:

- Remove any and all debris including tree roots through out the structure. Note that wherever tree roots are encountered the top or side of the pipe must be exposed and patch materials must be applied to the top (or sides) of the pipe as well as the interior pipe face.

- Remove all loose concrete or mortar from cracks or joints.

- Apply material in strict conformance with all Manufacturer's instructions.

- With CCTV Video record the completed installation in accordance with Section 26 of these Technical Specifications.

52.5 BASIS OF PAYMENT:

Accepted quantities under this section shall be paid for at the Contract Unit Price per linear foot of pipe or manhole repaired. Payment shall be considered full compensation for all materials and labor to complete the work described in this Section.

TECHNICAL SPECIFICATIONS

SECTION 53 - SAWCUTTING WALK, CURB, PAVEMENT, ETC.

53.1 SCOPE

When sawcutting of sidewalks, curb/curb and gutter, pavement, etc. is called for in these Specifications it shall require the use of an approved saw in order to obtain a smooth, straight line. Any existing facility, which is not marked for removal by the ENGINEER, but is nevertheless removed, shall be replaced at the CONTRACTOR'S expense.

53.2 BASIS OF PAYMENT

Accepted quantities for Sawcutting 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 linear foot, satisfactorily performed. All labor, materials, equipment, and excavation shall be incidental to Sawcutting.

TECHNICAL SPECIFICATIONS

SECTION 54 - PRECAST REINFORCED CONCRETE BOX CULVERT

54.1 SCOPE

Work under this Section shall include all labor, excavation, materials, equipment, bedding, backfilling and legally disposing of unneeded and unsatisfactory material at site obtained by the CONTRACTOR in accordance to the Lexington-Fayette Urban County Government Standard Drawings and all incidentals necessary to construct Precast Reinforced Concrete Box Culvert (RCBC) to the sizes and types indicated. The work for this Section shall also conform to the Kentucky Department of Highways Standard Specifications for Road and Bridges Section 611, Current Edition.

54.2 LAYING

The Precast RCBC shall be laid in sections to the line and grade shown on the drawings on a compacted bedding of crushed aggregate up to ¾ inch maximum size. The compacted bedding shall be leveled with a template or straightedge to ensure uniform support throughout the entire length and width of the structure.

The Precast RCBC shall be laid by placing the sections starting at the outlet end of the culvert with the bell or groove end being laid upgrade.

Provide drainage with 4-inch weep holes, except that for side-by-side installations separated by grout, the weep holes shall be placed on the extreme outside walls only.

Openings formed between the precast sections and any side entry of pipes. or top entry of manholes shall be grouted to form a water tight joint. When manholes are to be placed directly on the top slab of the precast sections, additional steel reinforcement in the top slab shall be provided to sufficiently compensate for the section removed.

54.3 JOINTS

The Contractor shall make sure that the joints of each unit are properly fitted. The Contractor shall use rubber, flexible plastic gaskets or asphalt mastic joint sealing compound in joints between the Precast Box Sections. Regardless of the type of sealant to be used, the Contractor shall ensure proper meshing of the joints.

No sand or foreign material of any kind shall be allowed to intrude into the joints. If sand or foreign material has intruded into the joints upon joining the sections, the joints shall be thoroughly cleaned until no sand or foreign material is present, then the joints shall be resealed.

The exterior joint gap on the top of the Precast RCBC shall be filled with mortar and shall be covered with a minimum of a 15-inch double layer geotextile fabric joint wrap. The joint wrap shall be applied to all joint sections.

54.4 BACKFILLING

Backfilling of the trench for the Precast Reinforced Concrete Box culvert shall be done in accordance to the Plans, Standards and Specifications of the Lexington - Fayette Urban County Government and in accordance to Subsection 603.03 of the Kentucky Department of Highways Standards and Specifications for Highways and Bridges.

54.5 BASIS OF PAYMENT

Accepted quantities for Precast Reinforced Concrete Box culverts will be paid for at the Contract Unit Price as quoted for various sizes (which shall be full compensation for all work required under this Section) and paid per linear foot of Precast Reinforced Concrete Box Culvert according to the length specified in the Plans and satisfactorily placed. Any removal of pavement and sidewalk and any rock encountered between zero (0) and eight (8) feet shall be paid for under appropriate Bid Items in addition to the Unit Price for Precast RCBC. Concrete caps shall be paid under the Bid Item for unfinished concrete. Surface restoration (seeding, sod, pavement, etc.) will be paid separately under the appropriate Bid Items and the pay limits for surface restoration shall be in accordance with the appropriate Standard Drawings. Additional reinforcements will be paid under the Bid Item for Steel Reinforcement for Concrete. Limits of surface restoration will be those limits as shown on the plans.

All labor, joint materials (including the geotextile fabric wrap and shear connectors required for joining sections), equipment, excavation, bedding, disposal and backfilling shall be incidental to the placement of the Precast RCBC.

TECHNICAL SPECIFICATIONS

SECTION 55 – DETECTABLE WARNING SURFACE TILE

55.1 SCOPE OF WORK

This Section specifies furnishing and installing Detectable Warning Surface Tiles Overlay or Imbedded where indicated concurrent with the installation of concrete sidewalk rampsper Section 14.1 of these Specifications.

55.2 SHOP DRAWINGS

- Product Data: Submit manufacturer's literature describing products, installation procedures.
- Samples for Verification Purposes: Submit two (2) tile samples minimum 6"x8" of the kind proposed for use.
- Shop drawings are required for products specified showing fabrication details; composite structural system; plans of tile placement including joints, and material to be used as well as outlining installation materials and procedure.
- Material Test Reports: Submit test reports from qualified independent testing laboratory indicating that materials proposed for use are in compliance with requirements and meet the properties indicated. All test reports shall be conducted on a Surface Applied tactile tile system as certified by a qualified independent testing laboratory.
- Maintenance Instructions: Submit copies of manufacturer's specified maintenance practices for each type of tactile tile and accessory as required.

55.3 OVERLAY MODULES

A. QUALITY ASSURANCE

- Provide Surface Applied tactile tiles and accessories as produced by a single manufacturer.
- Installer's Qualifications: Engage an experienced Installer certified in writing by tactile manufacturer as qualified for installation, who has successfully completed tile installations similar in material, design, and extent to that indicated for Project.
- Americans with Disabilities Act (ADA): Provide tactile warning surfaces which comply with the detectable warnings on walking surfaces section of the Americans with Disabilities Act (Title 49 CFR TRANSPORTATION, Part 37.9 STANDARDS FOR ACCESSIBLE TRANSPORTATION FACILITIES, Appendix A, Section 4.29.2 DETECTABLE WARNINGS ON WALKING SURFACES.
- Vitrified Polymer Composite (VPC) Surface Applied tiles shall be an epoxy polymer composition with an ultra violet stabilized coating employing aluminum oxide particles in the truncated domes. The tile shall incorporate an in-line dome pattern of truncated domes 0.2" in height, 0.9" diameter at the base, and 0.4" diameter at top of dome spaced 2.35" nominal as measured on a diagonal and 1.70" nominal as measured

side by side. For wheelchair safety the field area shall consist of a non-slip surface with a minimum of 40 - 90° raised points 0.045" high, per square inch; "Armor-Tile" as manufactured by Engineered Plastics Inc., Tel: 800-682-2525, or approved equal.

1. Dimensions: Tiles shall be held within the following dimensions and tolerances:

			Nominal	**Tile Size**			
Length and Width:	12" x 12"	24" x 24"	24" x 36"	24" x 48"	24" x 60"	36" x 48"	36" x 60"
Depth				0.1875" ±	5% max.		
Face Thickness				0.1875 ±	5% max.		
Warpage of Edge				± 0.5%	max.		

2. Water Absorption of Tile when tested by ASTM-D 570 not to exceed 0.35%.
3. Slip Resistance of Tile when tested by ASTM-C 1028 the combined wet/dry static co-efficient of friction not to be less than 0.80 on top of domes and field area.
4. Compressive Strength of tile when tested by ASTM-D 695-91 not to be less than 18,000 psi.
5. Tensile Strength of Tile when tested by ASTM-D 638-91 not to be less than 10,000 psi.
6. Flexural Strength of Tile when tested by ASTM - C293-94 not to be less than 24,000 psi.
7. Chemical Stain Resistance of Tile when tested by ASTM-D 543-87 to withstand without discoloration or staining - 1% hydrochloric acid, urine, calcium chloride, stamp pad ink, gum and red aerosol paint.
8. Abrasive Wear of Tile when tested by BYK - Gardner Tester ASTM-D 2486* with reciprocating linear motion of 37± cycles per minute over a 10" travel. The abrasive medium, a 40 grit Norton Metallite sand paper, to be fixed and leveled to a holder. The combined mass of the sled, weight and wood block to be 3.2 lb. Average wear depth shall not exceed 0.030 after 1000 abrasion cycles measured on the top surface of the dome representing the average of three measurement locations per sample.
9. Fire Resistance: When tested to ASTM E84 flame spread be less than 25.
10. Gardner Impact to geometry "GE" of the standard when tested by ASTM-D 5420-93 to have a mean failure energy expressed as a function of specimen thickness of not less than 450 in. lbf/in. A failure is noted if a hairline fracture is visible in the specimen.
11. Accelerated Weathering of Tile when tested by ASTM-G26-95 for 2000 hours shall exhibit the following result - no deterioration, fading or chalking of surface of tile.

- Vitrified Polymer Composite (VPC) Surface Applied tiles embedded in concrete shall meet or exceed the following test criteria:

1. Accelerated Aging and Freeze Thaw Test of Tile when tested to ASTM-D 1037 shall show no evidence of cracking, delamination, warpage, checking, blistering, color change, loosening of tiles or other defects.
2. Salt and Spray Performance of Tile and Adhesive System when tested to ASTM-B 117 not to show any deterioration or other defects after 100 hours of exposure.

B. DELIVERY, STORAGE AND HANDLING

Tiles shall be suitably packaged or crated to prevent damage in shipment or handling. Finished surfaces shall be protected by sturdy wrappings and tile type shall be identified by part number. Tiles shall be delivered to location at building site for storage prior to installation.

C. 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. Store tactile tile material in spaces where they will be installed for at least 48 hours before beginning installation. 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 the passengers or public. Provide barricades or screens to protect passengers or public. Disposal of any liquids or other materials of possible contamination 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.

D. EXTRA STOCK

Deliver extra stock to storage area designated by engineer. Furnish new materials from same manufactured lot as materials installed and enclose in protective packaging with appropriate identification for Surface Applied tactile tiles. Furnish not less than two (2) % of the supplied materials for each type, color and pattern installed.

E. PRODUCTS: MANUFACTURERS

- Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:
- The Vitrified Polymer Composite (VPC) Surface Applied Tactile Tile specified is based on Armor- Tile manufactured by Engineered Plastics Inc. (800-682-2525). Existing engineered and field tested products which are subject to compliance with requirements, may be incorporated in the work and shall meet or exceed the specified test criteria and characteristics.

- Color: Yellow conforming to Federal Color No. 33538. Color shall be homogeneous throughout the tile.

F. MATERIALS

- Fasteners: Color matched, corrosion resistant, flat head drive anchor: ¼" diameter x 1 ¾" long. Armor-Drive by Engineered Plastics or equal.
- Adhesive: Armor-Bond as supplied by Engineered Plastics Inc.
- Sealants: Armor-Seal as supplied by Engineered Plastics Inc.

G. INSTALLATION – OVERLAY TILES

- During all surface preparation and tile installation procedures, ensure adequate safety guidelines are in place and that they are in accordance with the applicable industry and government standards.
- The application of all tile, adhesives, mechanical fasteners, and caulking shall be in strict accordance with the guidelines set by their respective manufacturers.
- Work with the Contractor or Engineer to ensure that the surfaces being prepared and fabricated to receive the tiles are constructed correctly and adequately for tile installation. Review design drawings with the Contractor prior to the construction and refer any and all discrepancies to the Engineer.
- Set the tile true and square to the curb ramp area as detailed in the design drawings, so that its location can be marked on the concrete surface. A thin permanent marker works well. Remove tile when done marking its location.
- The surface to receive the detectable warning surface tile (not recommended for asphalt) is to be mechanically cleaned with a diamond cup grinder or shot blaster to remove any dirt or foreign material. This cleaning and roughening of the concrete surface should include at least 4 inches around the perimeter of the area to receive the tile, and also along the cross pattern established by the corresponding areas on the backside of the tile. Those same areas should then be cleaned with a rag soaked in Acetone.
- Immediately prior to installing the detectable warning surface tile, the concrete surfaces must be inspected to ensure that they are clean, dry, free of voids, curing compounds, projections, loose material, dust, oil, grease, sealers and determined to be structurally sound and cured for a minimum of 30 days.
- Using Acetone, wipe the backside of the tile around the perimeter and along the internal cross pattern, to remove any dirt or dust particles from the area to receive the adhesive.
- Apply the adhesive on the backside of the tile, following the perimeter and internal cross pattern established by the tile manufacturer. Sufficient adhesive must be placed on the prescribed areas to have full coverage across the 2" width of the adhesive locator. A 3 x 4 foot tile will typically require an entire tube of adhesive.
- Set the tile true and square to the curb ramp area as detailed in the design drawings.
- Standing with both feet applying pressure around the molded recess provided in the tile, drill a hole true and straight to a depth of 3½" using the recommended

diameter bit. Drill through the tile without hammer option until the tile has been successfully penetrated, and then with hammer option to drill into the concrete.

- Immediately after drilling each hole, and while still applying foot pressure, vacuum, brush or blow away dust and set the mechanical fastener as described below, before moving on to the next hole.
- Mechanically fasten tiles to the concrete substrate using a hammer to set the fasteners. Ensure the fastener has been placed to full depth in the dome, straight, and flush to the top of dome. Drive the pin of the fastener with the hammer, taking care to avoid any inadvertent blows to the truncated dome or tile surface. A plastic deadblow or leather hammer is recommended.
- Working in a sequence which will prevent buckles in the tile, proceed to drill and install all fasteners in the tile's molded recesses.
- Following the installation of the tiles, the perimeter caulking sealant should be applied. Follow the perimeter caulking sealant manufacturer's recommendations when applying. Tape all perimeter edges of the tile and also tape the adjacent concrete back 1/2" from the tile's perimeter edge. Tool the perimeter caulking with a plastic applicator or spatula to create a straight edge in a cove profile between the tile and adjacent concrete. Remove tape immediately after tooling perimeter caulking sealant.
- Do not allow foot traffic on installed tiles until the perimeter caulking sealant has cured sufficiently to avoid tracking.

If installing adjacent tiles, note the orientation of each tile. Careful attention will reveal that one of the long edges of the tile is different than the other, in regard to the tiny dotted texture. You may also note a larger perimeter margin before the tiny dotted texture pattern begins. Consistent orientation of each Armor-Tile is required in order that the truncated domes on adjacent tiles line up with each other.

In order to maintain proper spacing between truncated domes on adjacent tiles, the tapered edge should be trimmed off using a continuous rim diamond blade in a circular saw or mini-grinder. The use of a straightedge to guide the cut is advisable. All cuts should be made prior to installation of the tiles.

If installing adjacent tiles, care should be taken to leave a 1/8 inch gap between each.

If tiles are custom cut to size, and if pre-molded recesses (to receive fasteners) are removed by the cut, then any truncated dome can be center-drilled with a ¼ inch through hole, and counter sunk with a suitable bit, to receive mechanical fasteners. New holes should be created no closer to the edge of the tile than any of the other perimeter fastener pre-molded recesses. Care should be taken to not countersink too deeply. Fasteners should be flush with the top of the truncated dome when countersunk properly.

Adhesive or caulking on the surface of the Armor-Tile can be removed with Acetone.

H. CLEANING AND PROTECTING

- Protect tiles against damage during construction period to comply with tactile tile manufacturer's specification.
- Protect tiles against damage from rolling loads following installation by covering with plywood or hardwood.
- Clean tactile tiles not more than four days prior to date scheduled for inspection intended to establish date of substantial completion in each area of project. Clean tactile tile by method specified by tactile tile manufacturer.

55.4 IMBEDDED MODULES

A. SHOP DRAWINGS

- Product Data: Submit manufacturer's literature describing products and installation procedures.
- Samples for Verification Purposes: Submit two (2) 12"x12" tile samples of the kind proposed for use.
- Shop drawings are required for products specified showing fabrication details; material to be used as well as outlining installation materials and procedure.
- Material Test Reports: Submit test reports from qualified independent testing laboratory indicating that materials proposed for use are in compliance with requirements and meet the properties indicated. All test reports shall be conducted on a Detectable Warning Surface Tile system as certified by a qualified independent testing laboratory.

B. QUALITY ASSURANCE

- Provide Detectable Warning Surface tiles and accessories as produced by a single manufacturer.
- Installer's Qualifications: Engage an experienced installer who has successfully completed tile installations similar in material, design, and extent to that indicated for Project.
- Americans with Disabilities Act (ADA): Provide tactile warning surfaces which comply with the detectable warnings on walking surfaces section of the Americans with Disabilities Act (Title 49 CFR TRANSPORTATION, Part 37.9 STANDARDS FOR ACCESSIBLE TRANSPORTATION FACILITIES, Appendix A, Section 4.29.2 DETECTABLE WARNINGS ON WALKING SURFACES.
- Detectable Warning Surface Tile shall be "Access Tile", same manufacture as Amor-Tile manufactured by Engineered Plastics, Inc., Tel: 800-682-2525, **or approved equal.**
  1. Water Absorption when tested by ASTM-D 570 not to exceed 0.2%.
  2. Slip Resistance when tested by ASTM-C 1028 the combined wet/dry static co-efficient of friction not to be less than 0.80 on top of domes.

3. Compressive Strength when tested by ASTM C 109 not to be less than 10,000 psi.
4. Tensile Strength when tested by ASTM-C 307 not to be less than 1,800 psi.
5. Flexural Strength when tested by ASTM – C384 not to be less than 3,000 psi.
6. Fire Resistance when tested to ASTM E84 flame spread to be less than 50.

C. DELIVERY, STORAGE AND HANDLING

Tiles shall be suitably packaged or crated to prevent damage in shipment or handling. Finished surfaces shall be protected by sturdy wrappings and tile type shall be identified by part number. Tiles shall be delivered to location at building site for storage prior to installation. All materials furnished shall be from same manufactured lot and shall be enclosed in protective packaging with appropriate identification.

D. 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.

F. PRODUCTS: MANUFACTURERS

- Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:
- The Detectable Warning Surface Tile specified is based on ADA Solutions and Access Tile as manufactured by Engineered Plastics Inc. (800-682-2525). Other engineered and field tested products compliant with these requirements may be incorporated in the work provided they meet or exceed the specified test criteria and characteristics. Alternates shall be approved by the Engineer prior to installation.
- Color: Yellow conforming to Federal Color No. 33538. Color shall be homogeneous throughout the tile.

F. INSTALLATION – IMBEDDED TILES

- During all surface preparation and tile installation procedures, ensure adequate safety guidelines are in place and that they are in accordance with the applicable industry and government standards.
- The installation of the structural embedment flange system and related materials shall be in strict accordance with the contract documents and the guidelines set by their respective manufacturers.
- 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 imbedded tiles.. An overly wet mix will cause the tile to float and will be rejected.
- The concrete pouring and finishing operations require typical mason's tools, however, a 4' long level with electronic slope readout, 25 lb. weights, and a large non-marring rubber mallet are specific to the installation of the Imbedded tiles. A vibrating mechanism such as that manufactured by Vibco or equal can be employed, if desired. The vibrating unit should be fixed to a soft base such as wood, at least 1 foot square.
- 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.
- 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. Holes in the tile perimeter allow air to escape during the installation process. Concrete will flow through the large holes in each embedment flange on the underside of the tile. This will lock the tile solidly into the cured concrete.
- 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 Cast In Place Detectable/Tactile Warning Surface 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.
- In cold weather climates it is recommended that the imbedded tiles be set deeper such that the top of domes are level to the adjacent concrete on the top and sides of ramp and that the base of domes to allow water drainage. This installation will reduce the possibility of damage due to snow clearing operations.
- 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.

- While concrete is workable, a 3/8" 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.
- During and after the tile installation and the concrete curing stage, it is imperative that there is no walking, leaning or external forces placed on the tile that may rock the tile causing a void between the underside of tile and concrete.
- Following tile placement, review installation tolerances to contract drawings and adjust tile before the concrete sets. Two suitable weights of 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.
- 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.
- If desired, individual tiles can be bolted together using ¼ inch or equivalent hardware. This can help to ensure that adjacent tiles are flush to each other during the installation process. Tape or caulking can be placed on the underside of the bolted butt joint to ensure that concrete does not rise up between the tiles during installation. Any protective plastic wrap which was peeled back to facilitate bolting or cutting, should be replaced and taped to ensure that the tile surface remains free of concrete during the installation process.
- 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.
- Any sound-amplifying plates on the underside of the tile, which are dislodged during handling or cutting, should be replaced and secured with construction adhesive. The air gap created between these plates and the bottom of the tile is important in preserving the sound on cane audible properties of the Armor-Tile system as required in various jurisdictions.

G. CLEANING AND PROTECTING

- Protect tiles against damage during construction period to comply with tactile tile manufacturer's specification.
- Protect tiles against damage from rolling loads following installation by covering with plywood or hardwood.

55.5 BASIS OF PAYMENT:

Detectable Warning Surface Tile-Overlay: Accepted quantities under this section shall be paid for at the Contract Unit Price per square foot for the appropriate size and type of Detectable Warning Surface Tile. Payment shall be considered full compensation for all materials and labor required to complete the work described in this Section.

Detectable Warning Surface Tile-Imbedded: Accepted quantities under this section shall be paid for at the Contract Unit Price per square foot for the appropriate size and type of Detectable Warning Surface Tile installed. Payment shall be considered full compensation for labor only. Any fastening hardware, tape or caulking the Contractor chooses to use shall be incidental to the cost of installation. The LFUCG will provide the Cast in Place Detectable Warning Surface Tile and CONTRACTOR is required to install the tile described in this Section.

TECHNICAL SPECIFICATIONS

SECTION 56 - UNSPECIFIED, INCIDENTAL MATERIALS

56.1 SCOPE

Work under this Section shall be for furnishing materials, not specified in this Document, to be determined as needed by the ENGINEER and delivered to the Work Site.

56.2 BASIS OF PAYMENT

Work under this Section shall be paid for at a price agreed upon between the CONTRACTOR and the ENGINEER and shall include cost plus 15% for overhead and profit (to be submitted as Contract progresses and as needed). No payments will be made under this Section without proper invoices for materials furnished.

TECHNICAL SPECIFICATIONS

SECTION 57 - UNSPECIFIED, INCIDENTAL LABOR

57.1 SCOPE

Work under this Section shall be for furnishing labor, not specified in this Document, to be determined as needed by the ENGINEER.

57.2 BASIS OF PAYMENT

Work under this Section shall be paid for at a price agreed upon between the CONTRACTOR and the ENGINEER and shall include Direct Wages Plus Certified Overhead Plus 15% Profit (to be submitted as Contract progresses and as needed). Payments under the Section shall require daily payroll sheets for the labor required.

TECHNICAL SPECIFICATIONS

SECTION 58 – THIS SECTION RESERVED

TECHNICAL SPECIFICATION

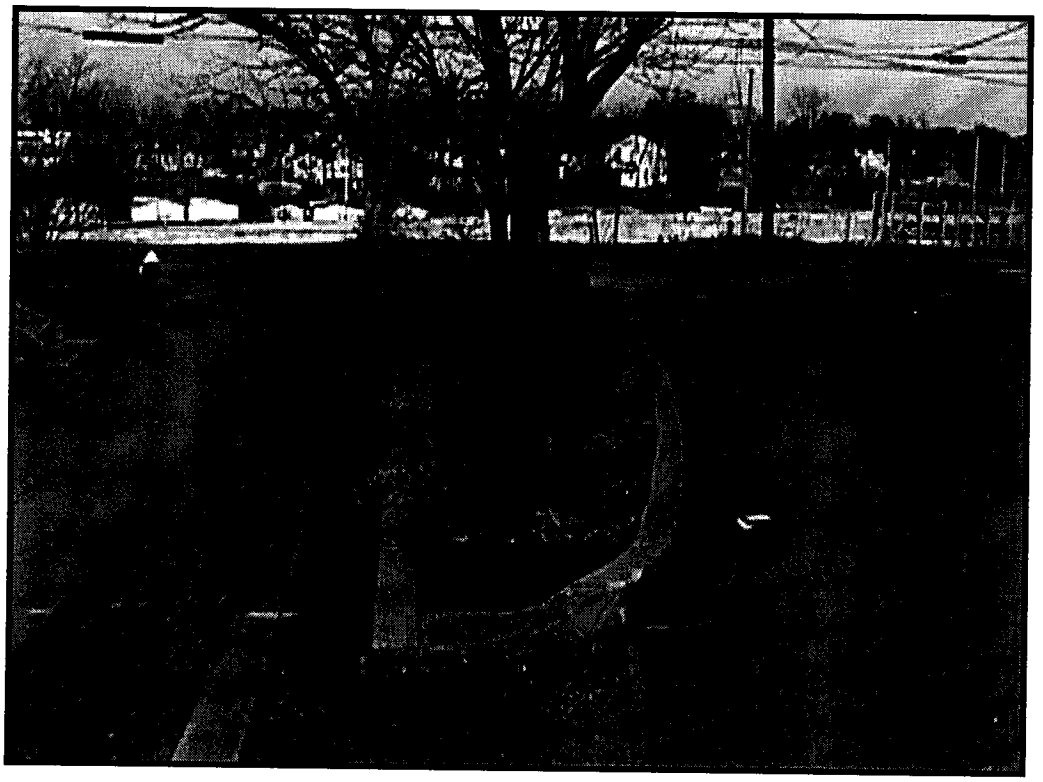
SECTION 59 – BULB-OUTS

59.1 SCOPE

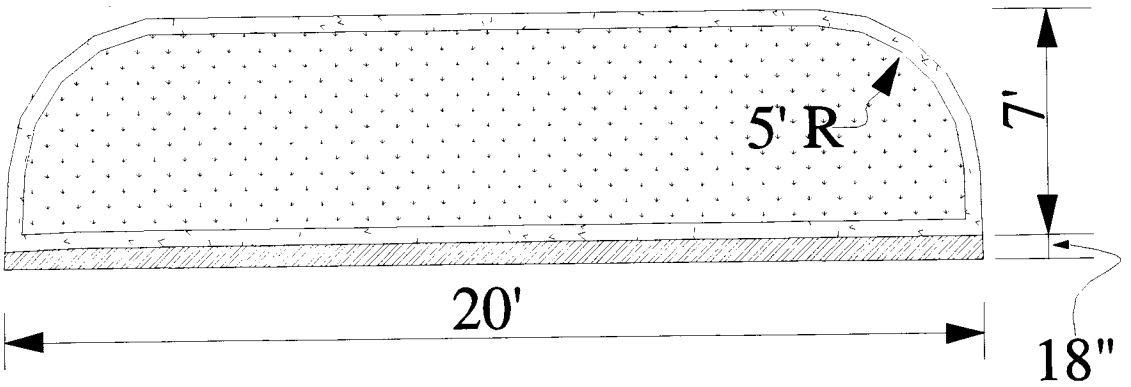
The Work shall consist of the bulb-outs as indicated on the plans. Work for this Section shall include all labor, materials, equipment, disposal, and incidentals necessary to complete Work. Excavation, header curb, asphalt repair, gutter cover, backfill (embankment), DGA, seeding and Sodding will be paid as per each item quoted in the UPC.

59.2 INSTALLATION

- The contractor will provide all labor, materials and installation equipment. Materials and workmanship are to meet LFUCG standards.
- The contractor is to provide proper traffic control to promote safe vehicular and pedestrian access.
- The contractor has 60 working days from the date of notification to complete the installation.
- The contractor is to notify the Division of Traffic Engineering of the scheduled installation date and must obtain the necessary permits to perform the work including but not limited to a Lane Blockage Permit from the Division of Traffic Engineering.
- The Division of Traffic Engineering reserves the right to have an inspector on site to insure that proper procedures are being followed and the bulbout installation meets LFUCG standards.



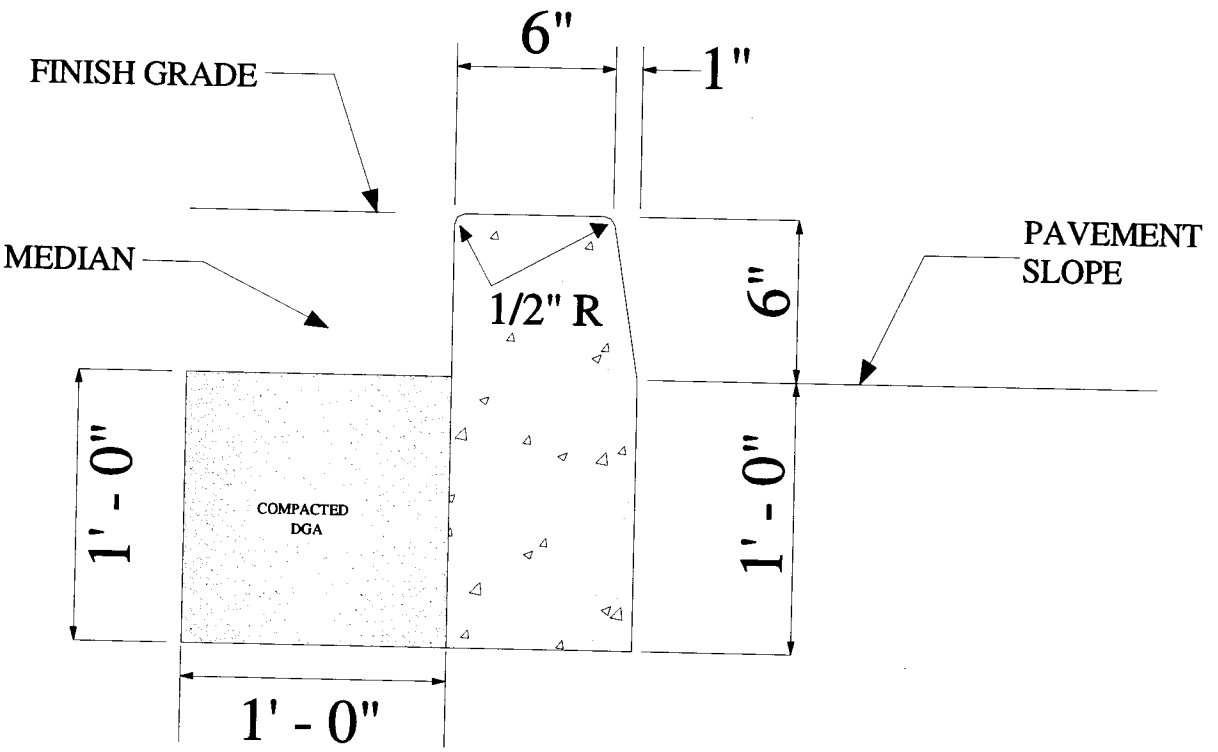
Bulb-out



NOTES:

1. HEADER CURB CONCRETE SHALL BE KDOT CLASS "A".
2. SAWED CONTRACTION JOINTS SHALL BE CONSTRUCTED EVERY 20 FEET, 3" MINIMUM DEPTH.
3. EXPANSION JOINTS SHALL BE CONSTRUCTED AT ALL BREAKS IN ALIGNMENT, AT ALL DRAINAGE INLETS AND AT THE BEGINNING AND ENDING POINTS OF CURVES.
4. ALL CONCRETE, EXCEPT BONDING SURFACES, SHALL BE CURED WITH WHITE PIGMENTED MEMBRANE FORMING COMPOUND (AASHTO M 148, TYPE 2)
5. ALL PAVEMENT AND BASE ARE TO BE REMOVED FULL DEPTH IN AREAS WHERE BULBOUTS ARE TO BE CONSTRUCTED.
6. ALL AREAS ARE TO BE BACK FILLED TO THE TOP OF CURB WITH TOPSOIL AND ARE TO BE SEEDED TO PROVIDE ADEQUATE COVERAGE.

Header Curb



NOTES:

1. CONCRETE SHALL BE KDOT CLASS "A".
2. SAWED CONTRACTION JOINTS SHALL BE CONSTRUCTED EVERY 20 FEET, 3" MINIMUM DEPTH.
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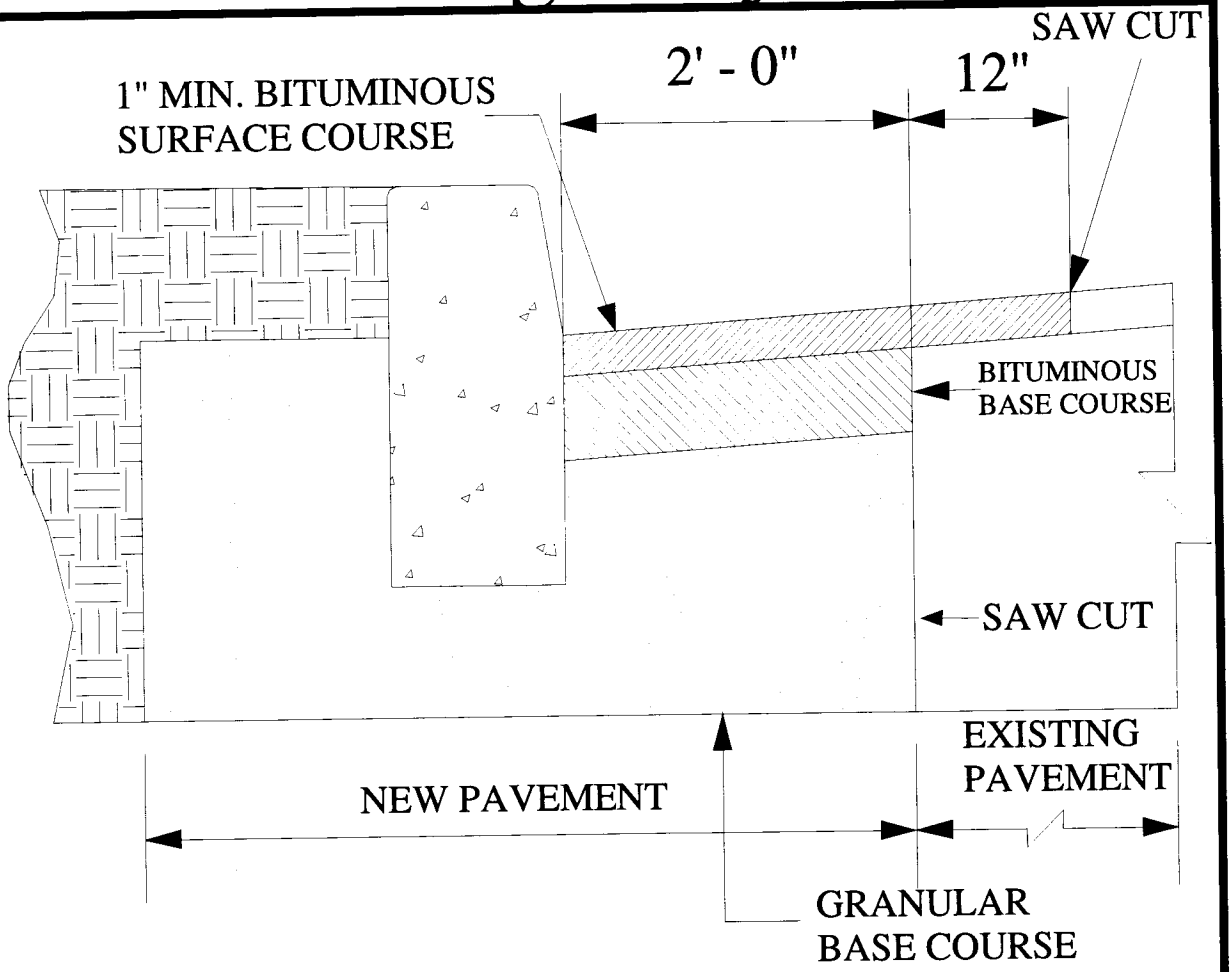
4. ALL CONCRETE, EXCEPT BONDING SURFACES, SHALL BE CURED WITH WHITE PIGMENTED MEMBRANE FORMING COMPOUND (AASHTO M 148, TYPE 2)

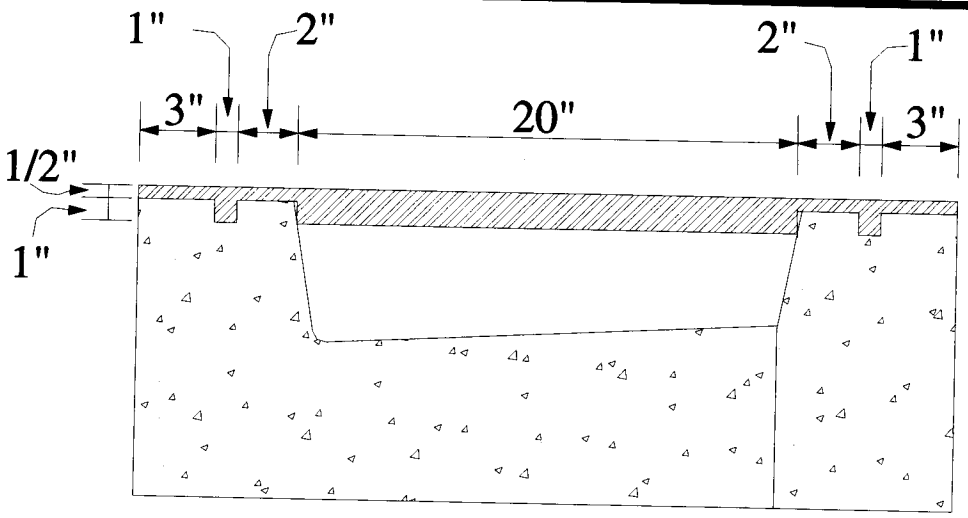
Edge Key



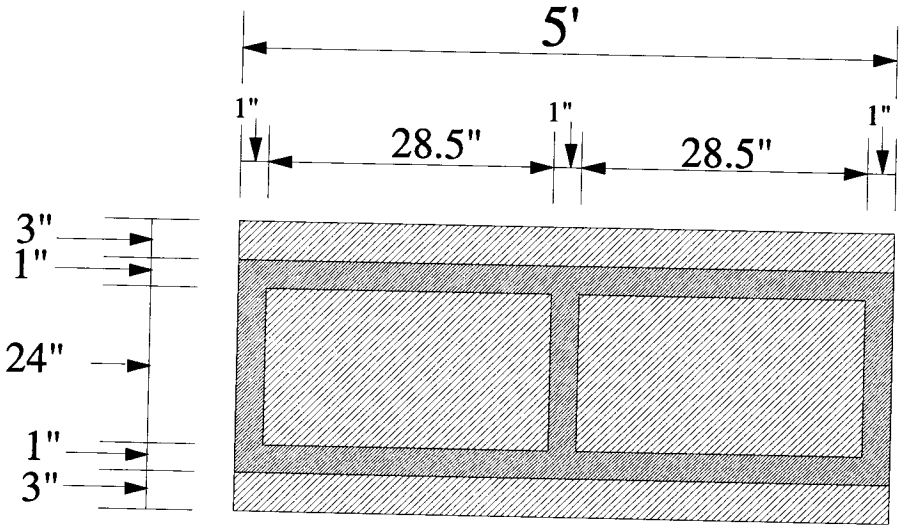
NOTES:

1. ALL SAW-CUTS SHALL BE NEAT AND STRAIGHT.
2. IMMEDIATELY BEFORE LAYING NEW BITUMINOUS COURSES, ALL SAW CUT EDGES SHALL BE CLEANED OF DUST AND DEBRIS AND SPRAYED WITH A BITUMINOUS TACK COAT.
3. EDGE KEY SHALL NOT BE REQUIRED IF BOTH EXISTING AND NEW PAVEMENT ARE TO RECEIVE AN OVERLAY AS PART OF THIS CONTRACT.

Bulbout/Gutter Cover

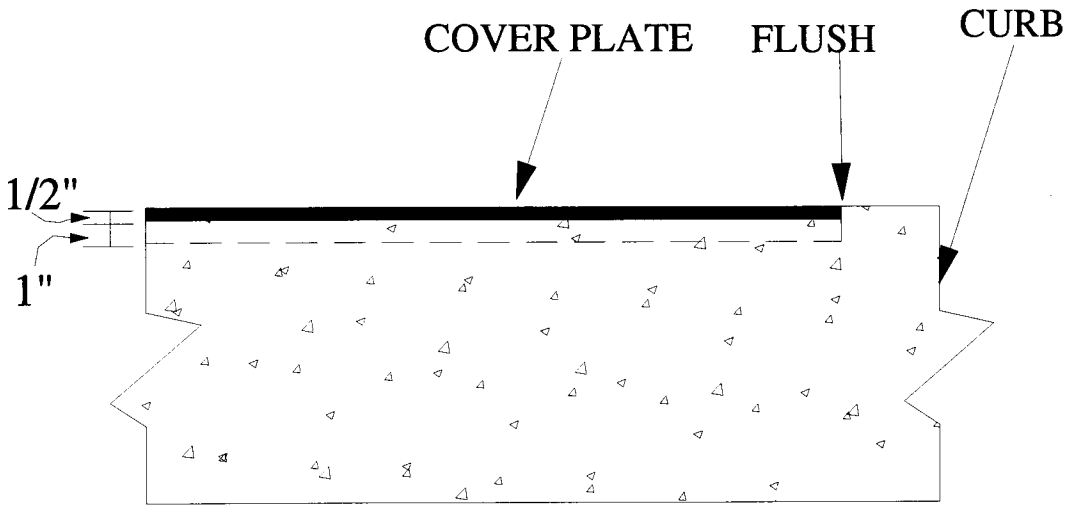


Bulbout Gutter X-section



Gutter Cover

Bulbout/Gutter Cover Notes

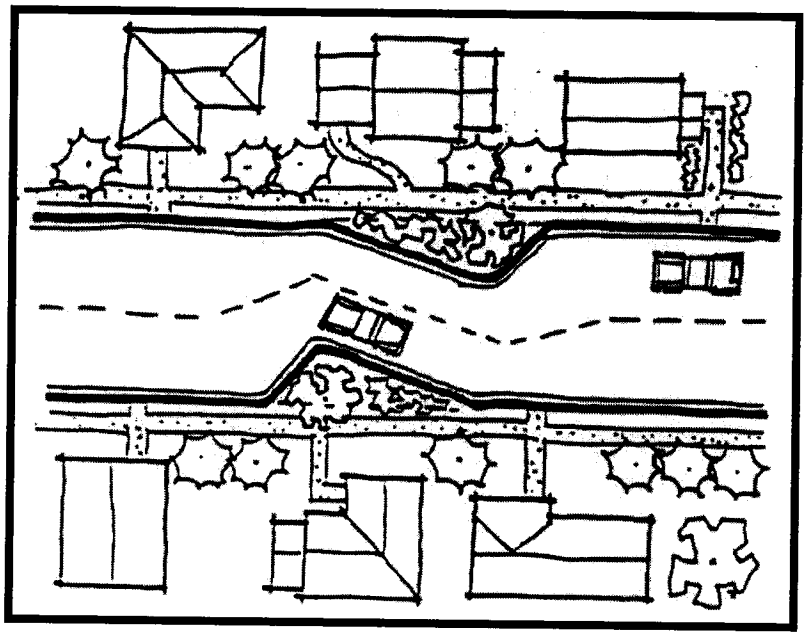


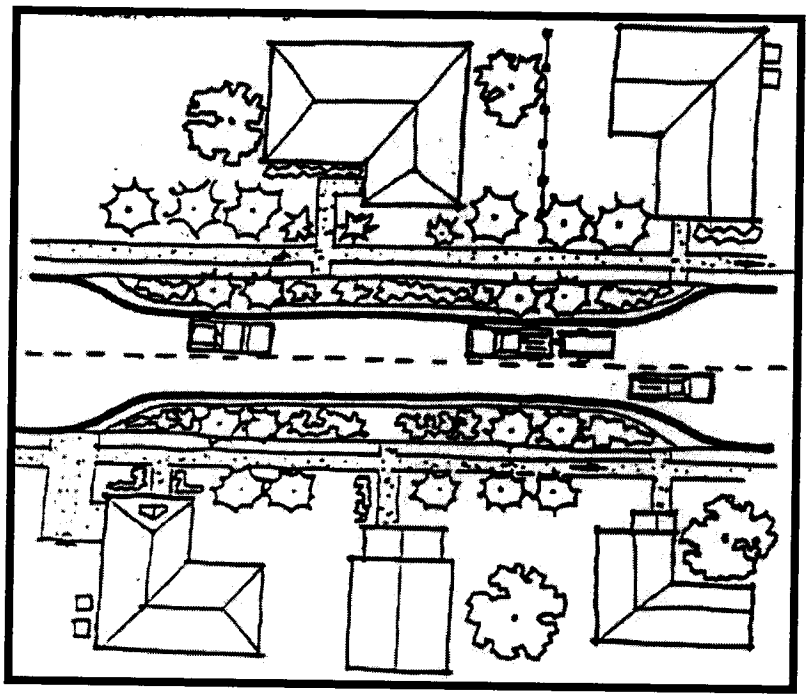
NOTES:

1. Gutter Covers shall be 1/2" thick weathered steel with 1" thick supports.
2. Existing curb sections and new header curb sections are to be formed or saw cut so that the steel cover sections are flush with the top of curb at each end of the bulbout.
3. Gutter Covers are to be held in place by the 1" thick notches in the curb.
4. Gutter Covers are to be 5' in length for a total of 4 sections per bulbout.
5. Gutter Covers are to be modified to account for non-parallel curb and gutter sections.

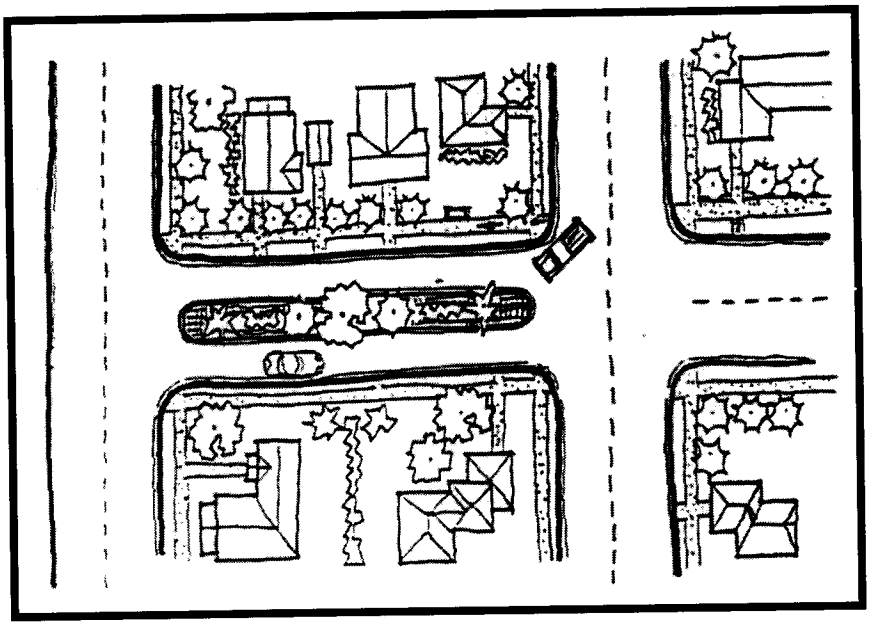
Example of non-standard bulbout types:

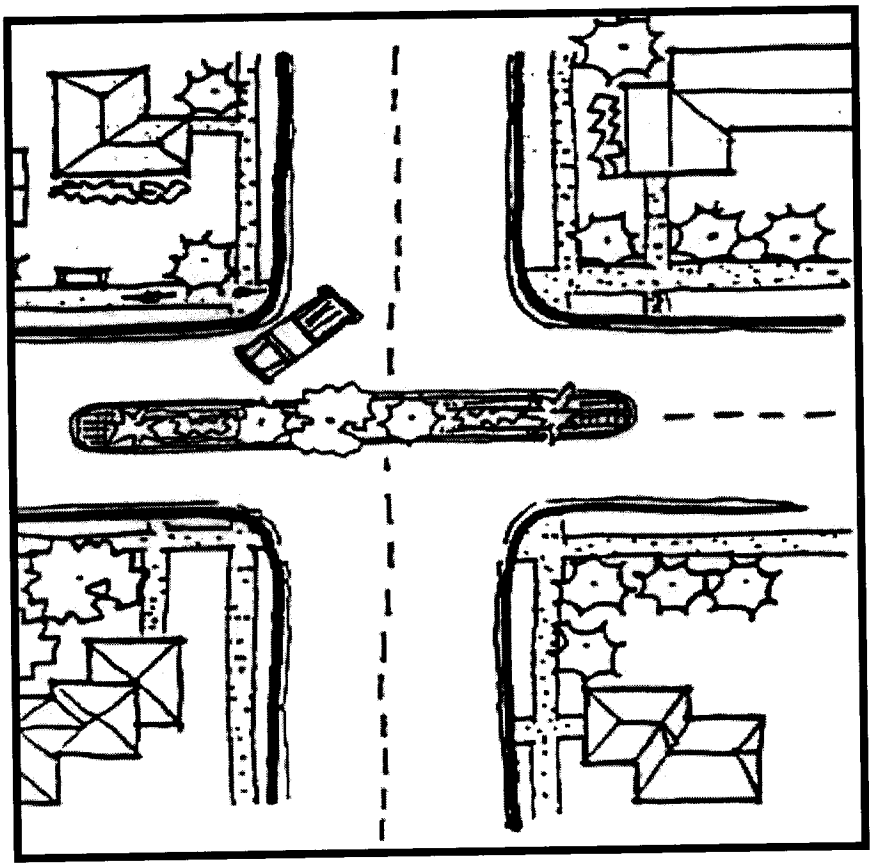
Chicanes



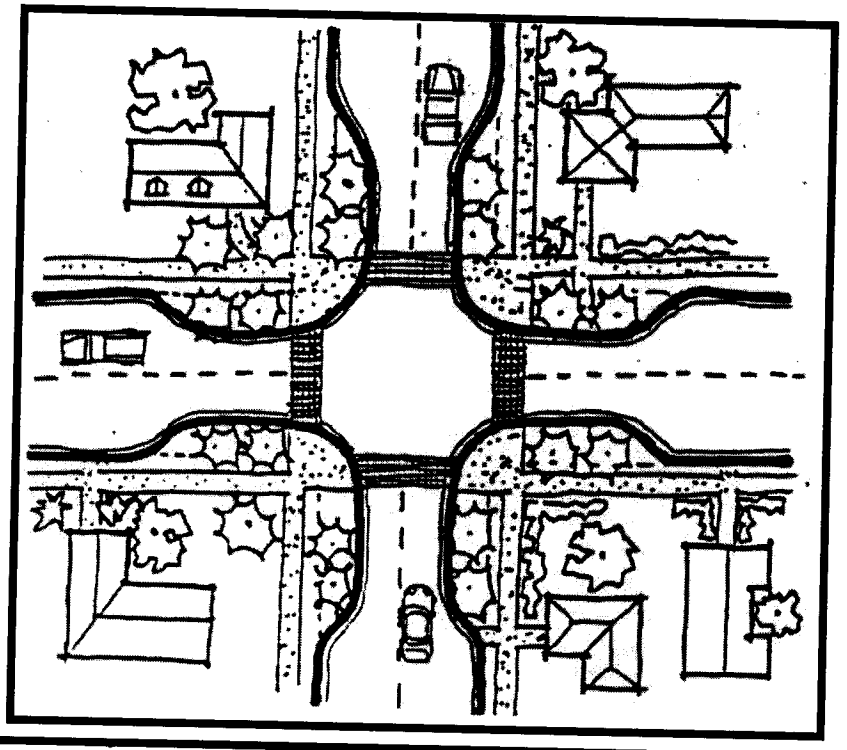


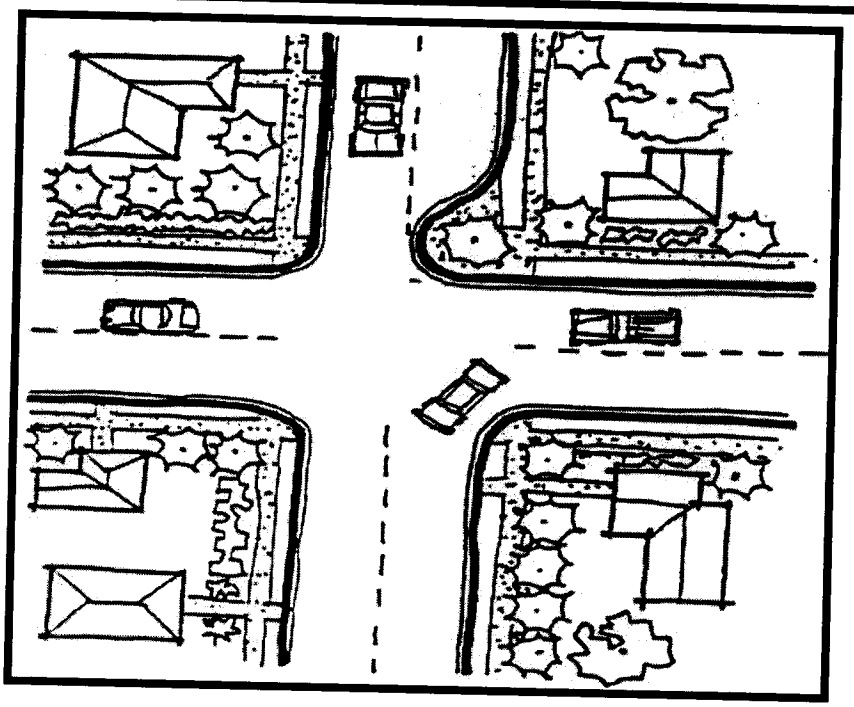
Medians



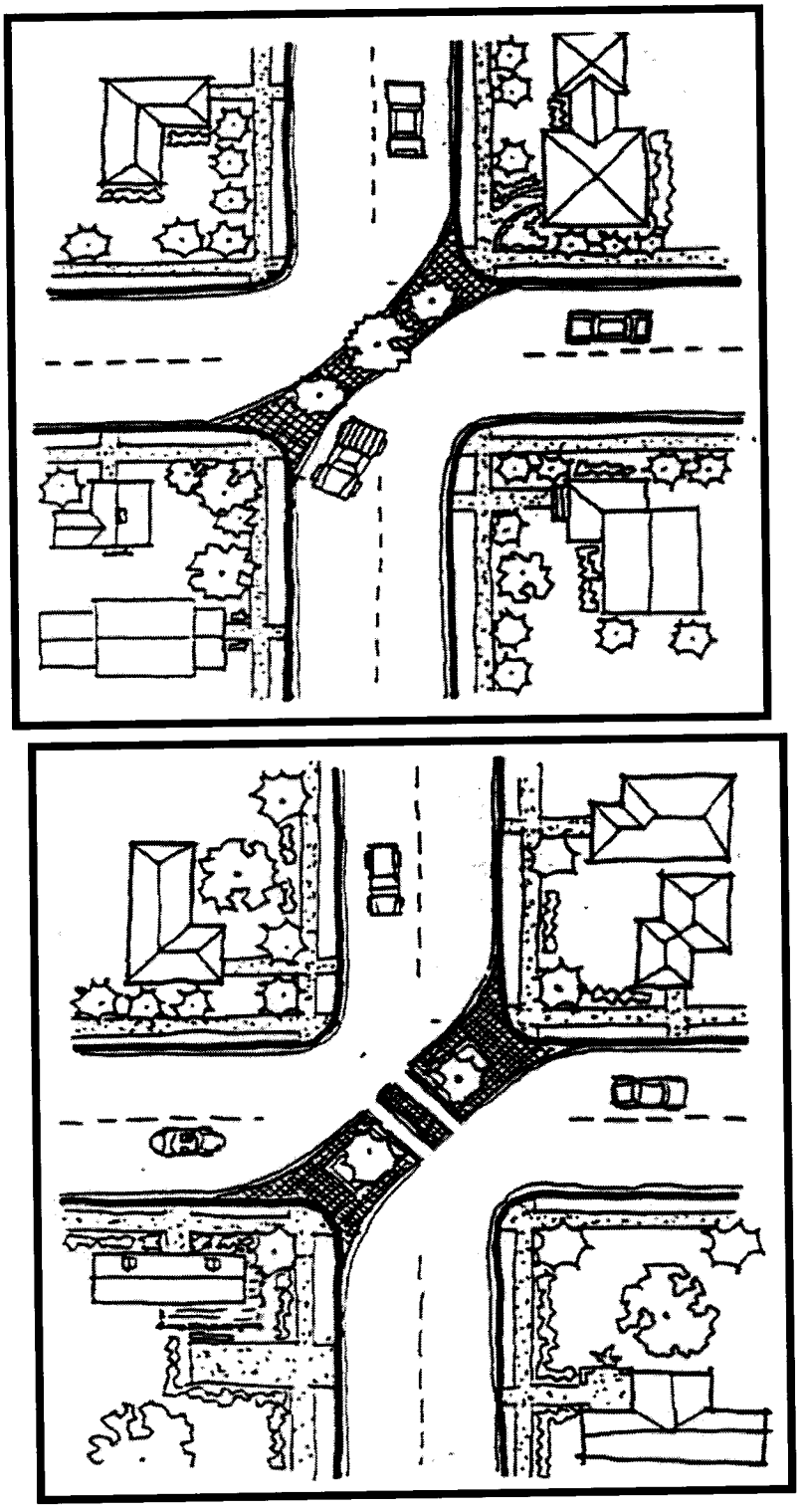


Choker/Semi-Diverter

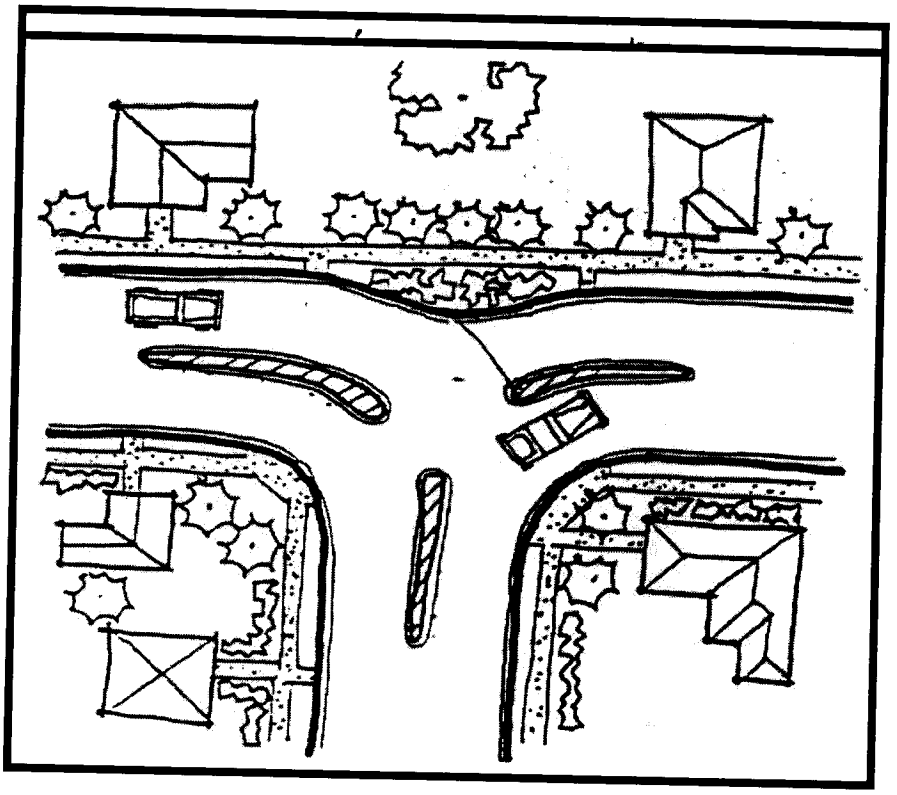




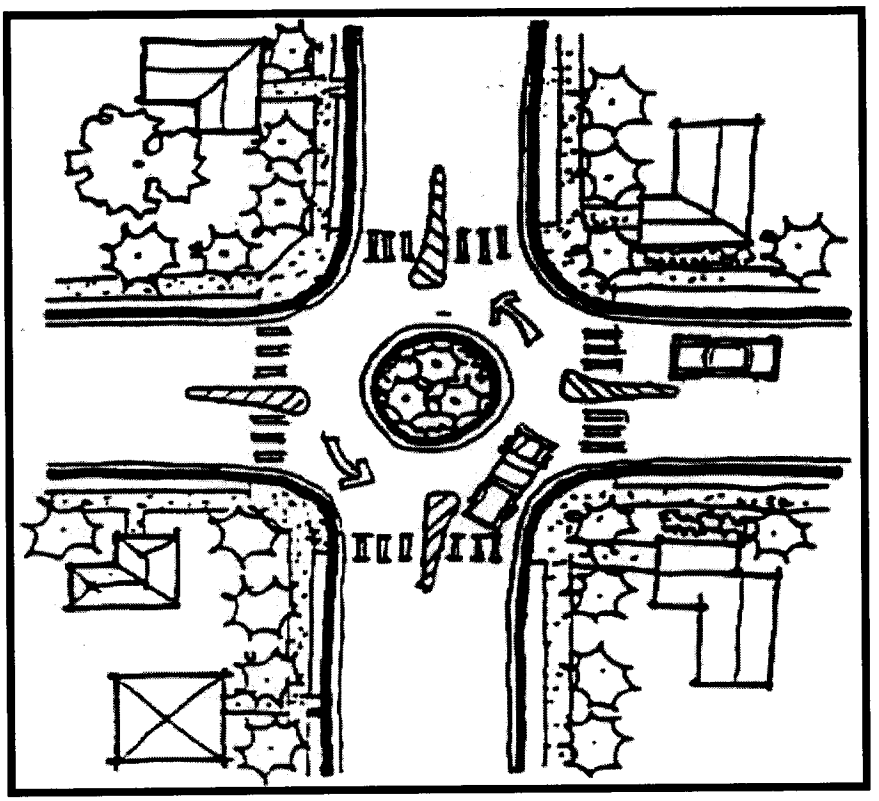
Diagonal Diverter

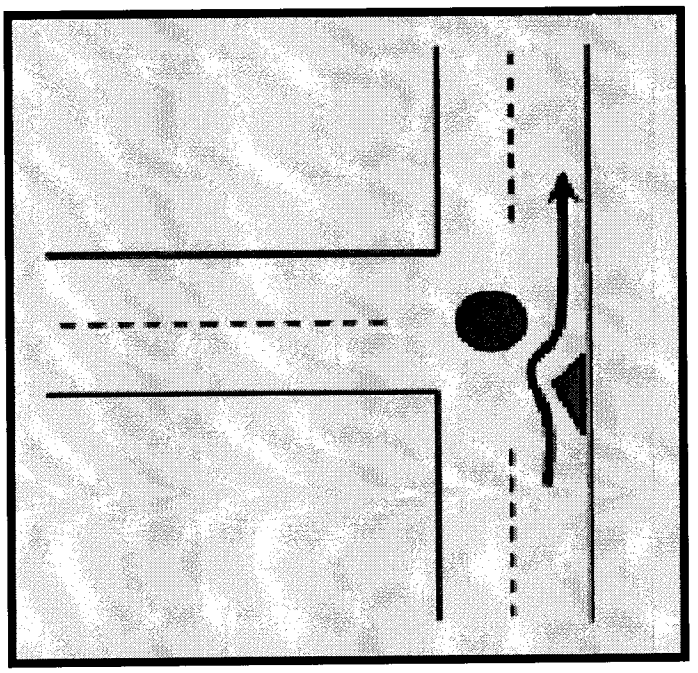


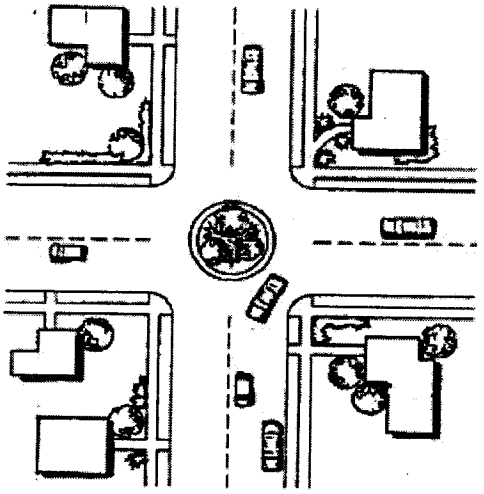
Channelization Medians



Traffic Circle







59.3 BASIS OF PAYMENT

Accepted quantities for Bulb-Outs 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 cubic yard for excavation, per linear foot for header curb, per square foot for asphalt repair, per linear foot for gutter cover, per cubic yard for backfill (embankment), per ton for DGA, per square yard for seeding and per square yard for sod satisfactorily installed. All labor, materials, and equipment with the exception of the items above shall be incidental to the installation of the Bulbouts.

TECHNICAL SPECIFICATIONS

SECTION 60 – GRADER WITH OPERATOR

60.1 SCOPE

Work under this Section shall consist of furnishing a grader with operator for grading at various locations to be determined. The grader supplied shall be in good working order, and with the trained operator, be capable of completing the required Work in a timely manner. Should the ENGINEER feel that the grader and/or operator are not adequate, he may reject either the grader and/or operator and no payment will be made.

60.2 BASIS OF PAYMENT

Accepted equipment and operator time for a Grader with an Operator 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 hour of Work satisfactorily completed. No direct payment will be made for delivery time to or from the Work site.

TECHNICAL SPECIFICATIONS

SECTION 61 – ROLLER/COMPACTOR WITH OPERATOR

61.1 SCOPE

Work under this Section shall consist of furnishing a roller/compactor with operator for work at various locations to be determined. The roller/compactor supplied shall be in good working order, and with the trained operator, be capable of completing the required Work in a timely manner. Should the ENGINEER feel that the roller/compactor and/or operator are not adequate, he may reject either the roller/compactor and/or operator and no payment will be made.

61.2 BASIS OF PAYMENT

Accepted equipment and operator time for a roller/compactor with an Operator 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 hour of Work satisfactorily completed. No direct payment will be made for delivery time to or from the Work site.

TECHNICAL SPECIFICATIONS

SECTION 62 - TOPSOIL PLACEMENT

62.1 SCOPE

The Work for this Section shall consist of furnishing and placing topsoil in locations as determined by the Engineer and shall include all labor, materials, equipment, excavation, and incidentals necessary to complete the Work in place, ready for use and constructed in conformance with KDOH Standard Specifications. Work for this Section shall conform to Kentucky Department of Highways Standard Specifications for Road and Bridge Construction Section 212.03.02, 827.10, Current Edition and the Lexington-Fayette Urban County Government Standard Drawings and shall include labor, excavation, materials, equipment and necessary incidentals.

62.2 WORK

Furnish and Place Topsoil: When the bid item is furnish and place topsoil, obtain topsoil conforming to Section 827 from source outside the project area. Avoid injury to existing planted growths, structures, and paved surfaces during topsoil operations.

Proper equipment and methods of operation that prevent the loading of subsoil or other unsuitable material with the topsoil. During hauling operations, keeping pavement surfaces clean. Promptly and completely remove any topsoil or other substances dropped on the surfaces before it is compacted by traffic.

Prepare areas designated to received topsoil. Then place and spread topsoil to a sufficient loose depth so that after natural settlement and rolling, the completed work conforms to the required line, grades, and elevations. Compact the topsoil and prepare the area for seeding according to Specifications.

Spreading Stockpiled Topsoil: When the bid item is spreading stockpiled topsoil, obtain the material from existing stockpiled on or near the project.

Do not spread topsoil until grading and shaping of the area to receive the topsoil has been completed and seeding and protection operations are ready to begin. Spread and lightly compact the topsoil to a uniform depth of approximately 6 inches over areas specified on the Plans or as the Engineer directs. Do not place topsoil on slopes steeper than 3:1. Compact the topsoil and prepare the area for seeding according to Specifications.

62.3 MATERIAL

Topsoil is the portion of the soil profile defined technically as the "A" horizon by the Soil Science Society of America. Use loose, friable, topsoil that is free of stones, 1 inch or greater in overall dimensions, admixture of subsoil, refuse, stumps, roots, brush, weeds, and other material that prevent the formation of a suitable seed bed. Before stripping the topsoil, inspect for existing

vegetation. Do not use topsoil from sites having Johnson Grass, Canada Thistle, Quack Grass, Nodding Thistle, or excessive amounts of noxious weeds or their rhizomes.

62.4 PAYMENT

Accepted quantities for Topsoil Placement will be paid for at the Contract Unit Price per cubic yard 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 Topsoil.

PART IX

ADDENDA

Addendum Number	Title	Date
1.	Correction to Bid Date	08/06/2014
2.		
3.		
4.		
5.		

Lexington-Fayette Urban County Government
DEPARTMENT OF FINANCE & ADMINISTRATION

Jim Gray
Mayor

William O'Mara
Commissioner

ADDENDUM #1

Bid Number: #**107-2014**

Date: August 6, 2014

Subject: **Construction Unit Price Contract**

Please address inquiries to:
Theresa Maynard (859) 258-3320

TO ALL PROSPECTIVE BIDDERS:

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

Revising bid due date on Economic Engine only; the correct date is Monday, August 25th, as on the bid documents and on the Lynn Imaging website.

Todd Slatin, Director
Division of Central Purchasing

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

COMPANY: _____

ADDRESS: _____

SIGNATURE OF PROPOSER: _____

APPENDIX A

Lexington-Fayette Urban County Government
Division of Engineering
Standard Drawings

Drawing	Drawing Title		
Manholes-Storm Drainage:			
100	Storm Sewer Manhole Type "A" Circular Wall		
102	Storm Sewer Manhole Details		
103	Manhole Frames, Covers & Steps		
104	Storm Sewer Manhole Circular Slabs		4'-0' & 5'-0' Diameter
105	Storm Sewer Manhole Circular Slabs		6'-0' Diameter
Surface Inlets & Catch Basins:			
120	Surface Inlet Type "A"		
121	Surface Inlet Type "B"		
122-1	Curb Box Inlet Type "A"	4'x4' Box	15"–18" Pipes
122-2	Curb Box Inlet Type "A"	4'x4' Box	15"-18" Pipes
123-1	Curb Box Inlet Type "B"	5'x5' Box	15"–24" Pipes
123-2	Curb Box Inlet Type "B"	5'x5' Box	15"–24" Pipes
124-1	Curb Box Inlet Type "C"	4'x3' Box	Single Pipe 15" or Less
124-2	Curb Box Inlet Type "C"	4'x3' Box	Single Pipe 15" or Less
125	Curb Box Inlet Type "D"		
128	Security Devices for Frames and Grates		
Channels & Ditches:			
130-1	Aggregate Channel Lining		
130-2	Aggregate Channel Lining		
131	Mattress Channel Lining		
132	Paved Ditch		
Headwalls:			
150	Straight Headwalls		
153	Pipe Culvert Headwalls-0° Skew		15"–27" Circular Pipe
154-1	Pipe Culvert Headwalls-0° Skew		30"–108" Pipe
154-2	Dimensions and Quantities-30"–108" Diameter-Circular Pipe Headwalls-0° Skew		
154-3	Bill of Reinforcement 30"–90" Diameter-Circular Pipe Headwalls-0° Skew		
162	Sloped and Flared Box Inlet-Outlet		18"-24"-30"-36" All Skews
163	Grates For Sloped and Flared Box Inlet-Outlet		
164	Impact Stilling Basin		15"–24" Pipes
165	Impact Stilling Basin		27"–48" Pipes

Trenching:

200 Typical Details for Sanitary Sewer Gravity Lines and Force Mains Trenching, Laying, Backfilling & Bedding Not Under Pavement
201-1 Pavement Replacement for Trenches Under Street Pavement
201-2 Pavement Replacement for Trenches Under Street Pavement Using CLSM
204 Sanitary Sewer Pipe: Types & Maximum Allowable Fill Height

Manholes:

210 Typical Precast Concrete Shallow Manhole for Pipes 24" and Larger
211 Typical Standard Precast Concrete Manhole for Pipe up to 24"
212 Typical Precast Concrete Drop Manhole for Pipes up to 36"
213 Standard Manhole Junction and Water Stop Details
214 Sewer Manhole Adjustment Grade Rings
216 Manhole Size Standards and General Notes for Deep Manholes
217 Deflection Angle Criteria for Sanitary Manholes
220 Standard Circular Manhole Frame & Cover
222 Standard Watertight Manhole Frame & Cover

Connections:

230 House Lateral for Greater than 6'Deep Sewer in Soil & Rock Excavation
231 House Lateral for Greater than 6' Deep Sewer in Soil
232 House Lateral for Shallow Sewer in Soil or Rock
233 Lateral Cleanout in Non-Paved Areas and Yards
234 Right of Way or Easement Lateral Cleanout in Non-paved areas and Yards
240 Typical Creek Crossing for Sanitary Sewer Line
260 Sewer Connection to Existing Manhole

Streets & Roads:

301 Curb & Gutter
302 Integral Curb, Header Curb, Monolithic Curb & Sidewalk
303 Sidewalk Construction Specifications
304 Sidewalk Ramp Type 1
305 Sidewalk Ramp Type 2 (sic)
306 Sidewalk Ramp Type 3
307 Residential Entrance Details
307-1 Commercial Entrance Details
308 Chain Link Fence 3'-6"
310 Chain Link Gate
312 Woven Wire Right-of-Way Fence Type 1
314 Woven Wire Gates

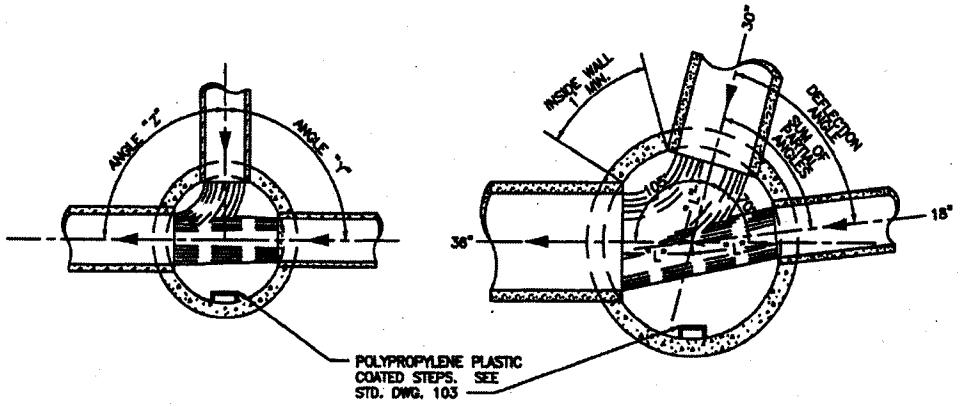
315 Concrete Steps
318 Edge Key
319 Typical Edge Key for Minimum Overlays, Short Projects, Low Speed
320 Perforated Pipe Subgrade Drainage Along Roadway
320-1 Perforated Pipe Subgrade Drainage for Raised Non-Paved Medians
321 Perforated Pipe for Subgrade Drainage
322 Perforated Pipe Underdrains
323 Public Improvement Sign

All LFUCG Division of Engineering Standard Drawings may be viewed on Division of Engineering's web site:

http://www.lexingtonky.gov/Modules/ShowDocument.aspx?documentid=5036
or,
http://tinyurl.com/o9e6yxc

TABLE I
OF
MINIMUM PARTIAL ANGLE

PIPE SIZE	MANHOLE SIZE 4'-0" P. ANGLE	4'-0" L. DIST.	5'-0" P. ANGLE	5'-0" L. DIST.	6'-0" P. ANGLE	6'-0" L. DIST.	7'-0" P. ANGLE	7'-0" L. DIST.	8'-0" P. ANGLE	8'-0" L. DIST.
15"	38°	1'-10"	30°	2'-4"	25°	2'-11"	22°	3'-5"	19°	3'-11"
18"	43°	1'-8"	34°	2'-3"	28°	2'-10"	24°	3'-4"	21°	3'-11"
24"	53°	1'-7"	41°	2'-3"	34°	2'-9"	29°	3'-3"	26°	3'-10"
27"	—	—	46°	2'-2"	37°	2'-8"	32°	3'-2"	28°	3'-9"
30"	—	—	49°	2'-1"	40°	2'-7"	35°	3'-1"	30°	3'-8"
33"	—	—	54°	2'-0"	43°	2'-6"	37°	3'-0"	32°	3'-8"
36"	—	—	—	1'-10"	47°	2'-4"	40°	3'-0"	34°	3'-7"
42"	—	—	—	—	55°	2'-1"	46°	2'-8"	39°	3'-5"
48"	—	—	—	—	63°	1'-9"	52°	2'-6"	44°	3'-2"
54"	—	—	—	—	—	—	59°	2'-3"	50°	2'-11"
60"	—	—	—	—	—	—	67°	1'-10"	56°	2'-9"



GENERAL NOTES:

1. ALL DIMENSIONS ARE BASED ON SIZE OF LARGEST PIPE IN MANHOLE.
2. MANHOLES FOR PIPE LARGER THAN 60" SHALL BE SPECIALLY DESIGNED.
3. IN CASES WHERE DEFLECTION ANGLES EXCEED MAXIMUM SHOWN IN TABLES, MANHOLE SHALL BE INCREASED IN SIZE OR SPECIALLY DESIGNED.
4. BOTTOM SLAB OF MANHOLES SHALL BE SPECIALLY DESIGNED WITH REGARD TO AREA, THICKNESS, AND REINFORCING IN SITUATIONS WHERE HIGH WATER TABLE OR UNSTABLE SOIL CONDITIONS EXIST.
5. MANHOLE BENCH SHALL SLOPE AT LEAST 1" PER FT. FROM WALLS TO CHANNELS AND SHALL HAVE SMOOTH FLOAT AND BRUSH FINISH.
6. ELEVATIONS OF PIPES IN MANHOLES SHALL BE SUCH THAT THE TOP OF ALL INFLUENT PIPES WILL BE AT AN ELEVATION EQUAL TO OR GREATER THAN THE TOP OF THE EFFLUENT PIPE.
7. INFLUENT PIPES MAY ENTER MANHOLES AT AN ELEVATION ABOVE THE CHANNELS AS REQUIRED TO AVOID CONFLICT WITH LARGER PIPES IN THE MANHOLE.

TYPE "A" MANHOLE – CIRCULAR WALLS
CAST–IN–PLACE OR PRECAST CONCRETE

NOTES:

1. PRECAST CONCRETE MANHOLE BARREL SHALL BE ASTM C–478, CLASS II PIPE TO 12' DEPTH AND C–76 CLASS III GREATER THAN 12' DEPTH.
2. BASE SECTION OF CIRCULAR MANHOLES MAY BE CAST–IN–PLACE CONCRETE, OR CUSTOM PRECAST CONCRETE WITH OPENINGS FOR PIPE.
3. BASE SECTIONS MAY BE SIMILAR TO SANITARY SEWER MANHOLE.
4. PROVIDE STEPS WITHIN 18" OF BENCH.

CIRCULAR MANHOLE NOTES:

1. THE ANGLE BETWEEN ANY TWO PIPES (e.g. ANGLE "Y" OR "Z") MUST BE GREATER THAN THE SUM OF THE PARTIAL ANGLES FROM TABLE I FOR THE MANHOLE SIZE SELECTED. FOR SMALLER ANGLES BETWEEN PIPES, LARGE MANHOLES MUST BE SELECTED. (SEE EXAMPLE BELOW)
2. THE MAXIMUM DEFLECTION ANGLE BETWEEN ANY INCOMING PIPE AND THE DISCHARGE PIPE SHALL BE NO MORE THAN 90° FOR PIPES UP TO 24" IN DIAMETER. THE MAXIMUM DEFLECTION ANGLE FOR 27" TO 42" PIPES SHALL BE 75° AND FOR PIPES LARGER THAN 42" THE MAXIMUM DEFLECTION ANGLE SHALL BE 60°.

EXAMPLE FOR MANHOLE SIZE SELECTION:

FOR MANHOLE SHOWN ABOVE, THE ANGLE BETWEEN 18" AND 30" PIPE IS 70° AND THE ANGLE BETWEEN 30" AND 36" PIPE IS 110°. THE TABLE INDICATES THAT FOR A 6'–0" DIAMETER MANHOLE THE MINIMUM PARTIAL ANGLE FOR AN 18" PIPE IS 28° AND FOR A 30" PIPE IS 40°. THE SUM OF THE PARTIAL ANGLES IS 68° THIS SUM IS LESS THAN THE 70°. THEREFORE, A 6'–0" MANHOLE DIAMETER IS ACCEPTABLE.

NO.	DATE	REVISION DESCRIPTION	BY

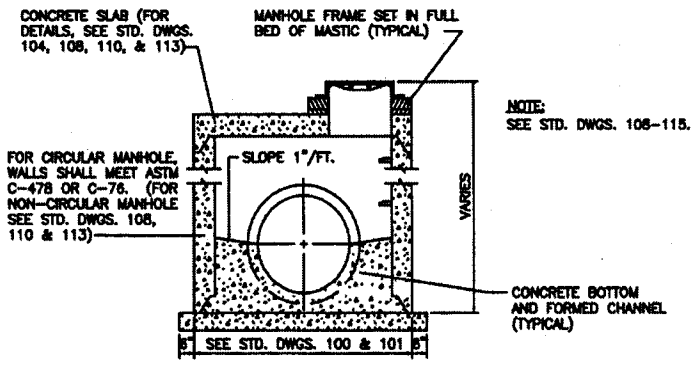
DIVISION OF ENGINEERING

STORM SEWER
MANHOLE TYPE "A"–
CIRCULAR WALLS

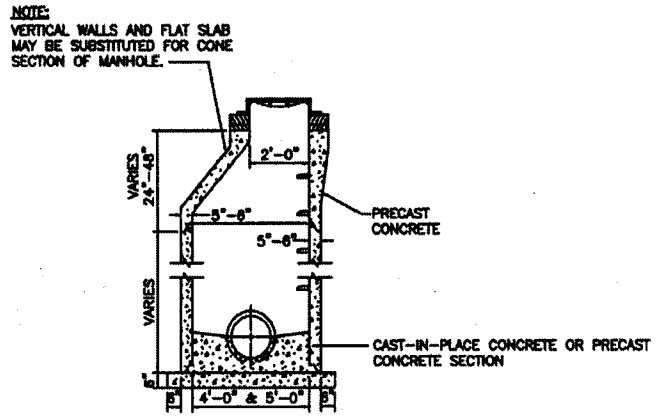
STANDARD DRAWING NO. 100

APPROVED 5/1/08
URBAN COUNTY ENGINEER / COMMISSIONER — DATE

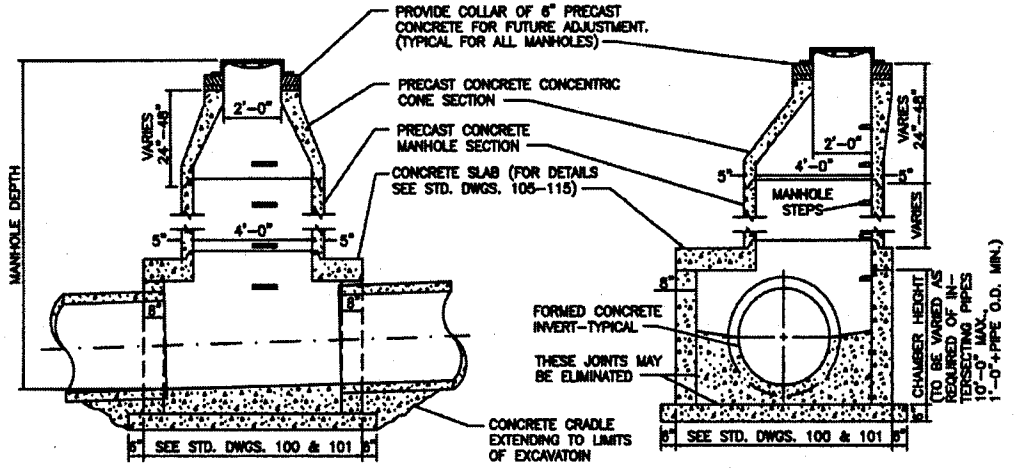
LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



CIRCULAR AND NON-CIRCULAR WALLS (TYPE "A" & TYPE "B")



STANDARD 4'-0" DIA. & 5'-0" CIRCULAR WALLS (TYPE "A")



TYPICAL LONGITUDINAL SECTION

TYPICAL TRANSVERSE SECTION

NOTES:

1. BASE SECTION OF CIRCULAR MANHOLES MAY BE CAST-IN-PLACE CONCRETE OR CUSTOM PRECAST CONCRETE WITH OPENINGS FOR PIPE.
2. 6" OVERHANG IN BOTTOM SLAB IS NOT REQUIRED IF PRECAST MANHOLES ARE USED.
3. FLAT SLABS IN PAVED AREAS SHALL BE USED ONLY AS APPROVED BY ENGINEER.

STANDARD CIRCULAR MANHOLE - 6'-0" DIAMETER & LARGER TYPE "A" AND NON-CIRCULAR WALL MANHOLE - ALL SIZES TYPE "B"

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

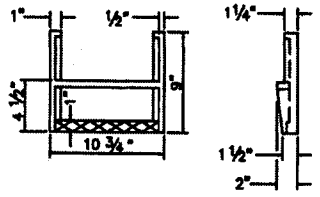
STORM SEWER MANHOLE DETAILS

STANDARD DRAWING NO. 102

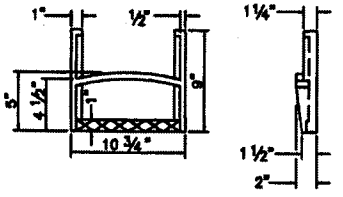
APPROVED 5/1/08 DATE

COMMISSIONER 5/1/08 DATE

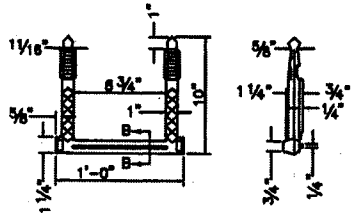
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



STEP TYPE NO. 1



STEP TYPE NO. 2



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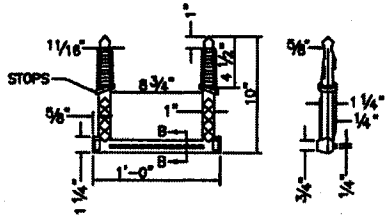
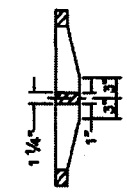


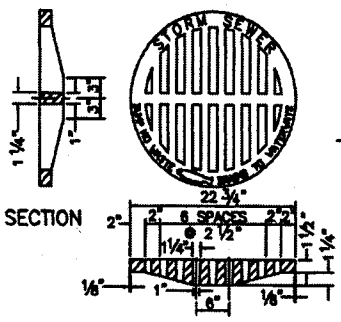
STEP TYPE NO. 4

MANHOLE STEPS

STEP TYPE NO. 1

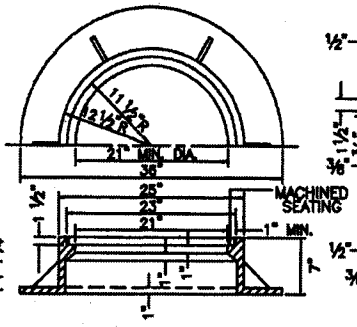


SECTION B–B

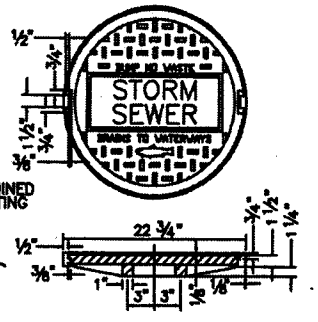


SECTION

GRATING COVER



FRAME



SOLID COVER

MANHOLE FRAME AND COVERS

NOTES:
1. MINIMUM WEIGHT FOR THE 7" FRAME SHALL BE 185 LBS.
2. MINIMUM WEIGHT FOR THE SOLID COVER SHALL BE 120 LBS.
3. CASTINGS TO MEET ASTM A–48 CLASS 35.

NOTES:
1. STEPS SHALL BE ASPHALT COATED CAST IRON OR POLYPROPYLENE PLASTIC COATED STEEL ROD OR OF A TYPE AND SIZE APPROVED BY THE ENGINEER.
2. STEPS SHALL BE SPACED APPROXIMATELY 12" TO 16" O.C. VERTICALLY SO AS TO FORM A CONTINUOUS LADDER.
3. STEPS SHALL BE REQUIRED IN MANHOLES WHEN THE STRUCTURE IS 4 FEET AND GREATER IN DEPTH. (MEASURE FROM FLOWLINE OF LOWEST PIPE TO TOP OF STRUCTURE.)
4. THE TREADS OF ALL STEPS SHALL HAVE ANTI–SKID PROPERTIES FOR HAND AND FOOT GRIPS.
5. MANHOLE STEPS SHALL BE INSTALLED IN A VERTICAL LINE AND SHALL COMPLY WITH OSHA STANDARDS IN ALL RESPECTS.
6. FOR CAST–IN–PLACE OR PRECAST CIRCULAR AND NON–CIRCULAR MANHOLES.
7. FIRST STEP SHALL BE NO MORE THAN 18" FROM TOP OF RIM.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

MANHOLE FRAMES, COVERS, & STEPS

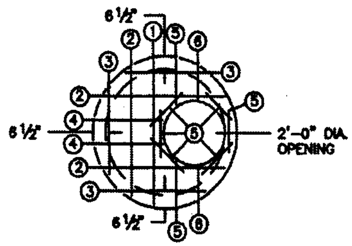
STANDARD DRAWING NO. 103

APPROVED: 5/1/08 DATE

URBAN COUNTY ENGINEER

COMMISSIONER 5/1/08 DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

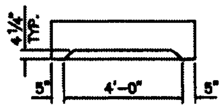


4'-0" DIA. SHALLOW MANHOLES

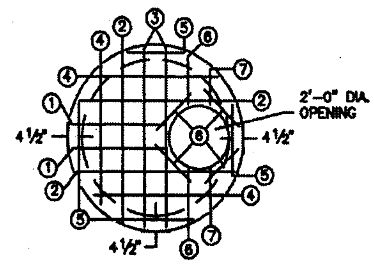
MARK	NO.	SIZE	LENGTH	TYPE
1	1	4	4'-5"	STR.
2	3	"	4'-0"	"
3	3	"	2'-8"	"
4	2	"	2'-0"	"
5	8	"	1'-6"	"
6	2	"	1'-0"	"

NOTES:

1. FOR PIPE SIZES 15" TO 24".
2. 9" O.C. SPACING EACH WAY.
3. 8" THICK SLAB.
4. 4'-10" O.D.
5. 2" MIN. STEEL REINFORCEMENT COVER ALL FACES.
6. CIRCULAR REBAR MAY BE USED, OR MARK 5 BARS AS SHOWN.



SIDE VIEW

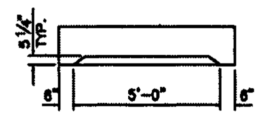


5'-0" DIA. SHALLOW MANHOLES

MARK	NO.	SIZE	LENGTH	TYPE
1	2	4	3'-2"	STR.
2	3	"	5'-3"	"
3	2	"	5'-8"	"
4	3	"	4'-2"	"
5	4	"	2'-2"	"
6	6	"	1'-6"	"
7	2	"	1'-0"	"

NOTES:

1. FOR PIPE SIZES 21" TO 33".
2. 9" O.C. SPACING EACH WAY.
3. 8" THICK SLAB.
4. 6'-0" O.D.
5. 2" MIN. STEEL REINFORCEMENT COVER ALL FACES.
6. CIRCULAR REBAR MAY BE USED, OR MARK 6 BARS AS SHOWN.



SIDE VIEW

NOTE:
SLAB OUTER DIAMETER TO VARY WITH MANHOLE WALL THICKNESS, TO COMPLETELY COVER MANHOLE WALLS.

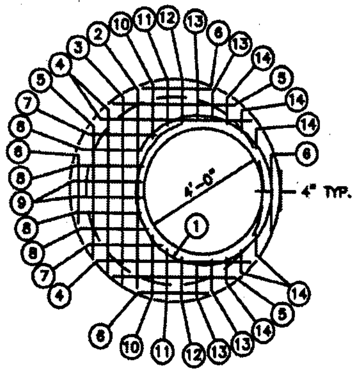
NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

STORM SEWER
MANHOLE CIRCULAR SLABS
4'-0" & 5'-0" DIAMETER

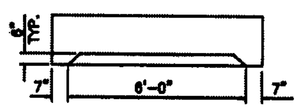
STANDARD DRAWING NO. 104

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



MARK	NO.	SIZE	LENGTH	TYPE
1	1	6	15'-10"	A
2	1	6	6'-6"	STR.
3	1	"	5'-11"	"
4	3	"	5'-3"	"
5	3	"	4'-3"	"
6	4	"	2'-6"	"
7	2	"	2'-7"	"
8	4	"	2'-3"	"
9	2	"	2'-2"	"
10	2	"	1'-10"	"
11	2	"	1'-6"	"
12	2	"	1'-3"	"
13	4	"	1'-0"	"
14	6	"	0'-10"	"

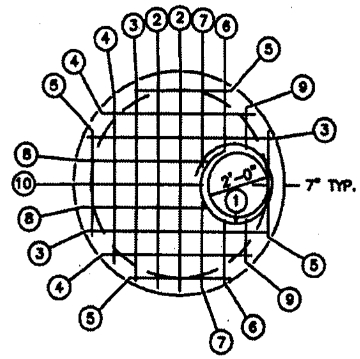
6'-0" DIA. STANDARD MANHOLES



SIDE VIEW

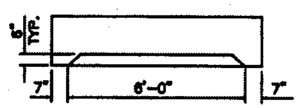
NOTES:

1. FOR PIPE SIZES 15" TO 48".
2. 6" O.C. SPACING EACH WAY.
3. 12" THICK SLAB.
4. 7'-2" O.D.
5. 2" MIN. STEEL REINFORCEMENT COVER ALL FACES.



MARK	NO.	SIZE	LENGTH	TYPE
1	1	6	9'-6"	A_1
2	2	5	6'-9"	STR.
3	3	"	6'-3"	"
4	3	"	5'-3"	"
5	4	"	3'-3"	"
6	2	"	1'-10"	"
7	2	"	2'-9"	"
8	2	"	4'-4"	"
9	2	"	1'-5"	"
10	1	"	4'-3"	"

6'-0" DIA. SHALLOW MANHOLES

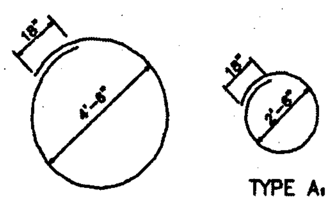


SIDE VIEW

NOTES:

1. FOR PIPE SIZES 15" TO 36".
2. 9" O.C. SPACING EACH WAY.
3. 8" THICK SLAB.
4. 7'-2" O.D.
5. 2" MIN. STEEL REINFORCEMENT COVER ALL FACES.

SPECIAL BAR BENDS



TYPE A

TYPE A_1

NOTE:
SLAB OUTER DIAMETER TO VARY WITH MANHOLE WALL THICKNESS, TO COMPLETELY COVER MANHOLE WALLS.

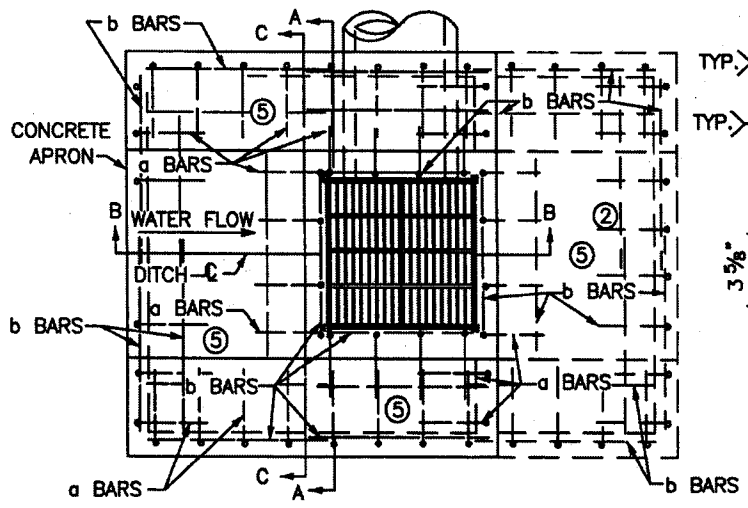
NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

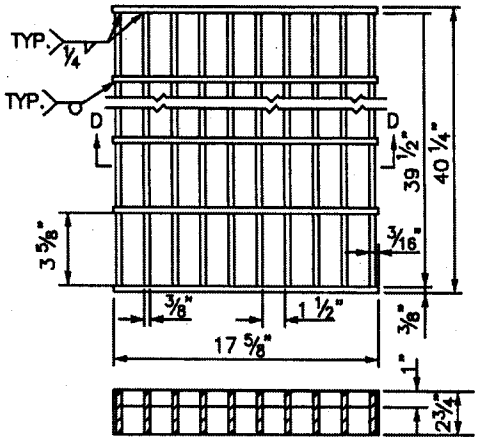
STORM SEWER
MANHOLE CIRCULAR SLABS
6'-0" DIAMETER

STANDARD DRAWING NO. 105
APPROVED — URBAN COUNTY ENGINEER — DATE 5/1/08
COMMISSIONER — DATE

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

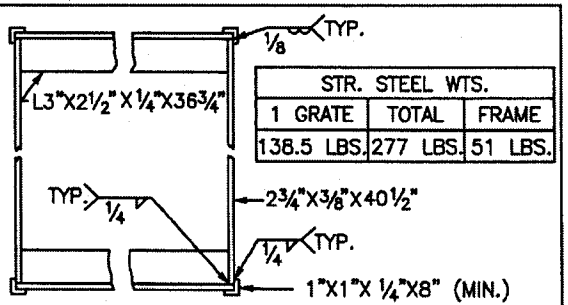


PLAN



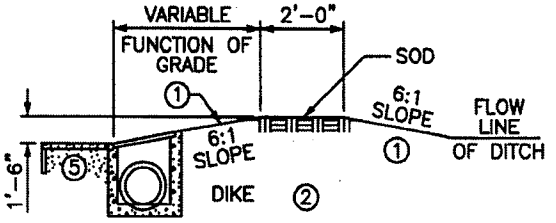
SECTION D–D

DETAIL OF GRATE
(TWO REQUIRED)

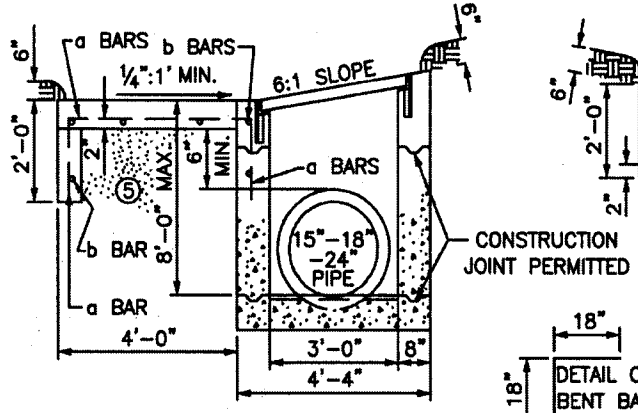


STR. STEEL WTS.		
1 GRATE	TOTAL	FRAME
138.5 LBS.	277 LBS.	51 LBS.

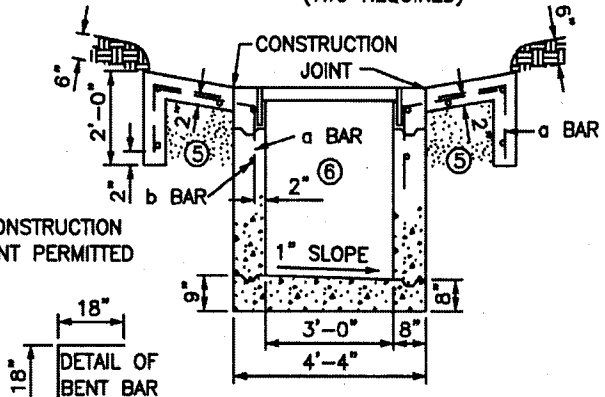
DETAIL OF FRAME



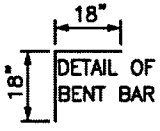
SECTION OF DIKE

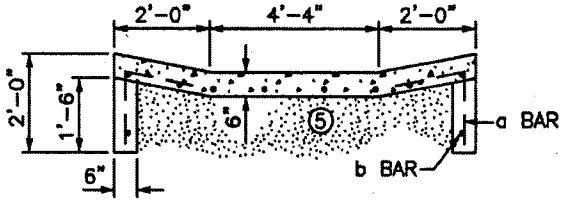


SECTION B–B



SECTION A–A





SECTION C–C

1. 6 : 1 Slopes are with reference to ditch grade.
2. When a box inlet is placed in a sag, omit the earth dike and longitudinal slope of the grate, and provide a concrete apron on each side of the inlet.
3. Rate of increase or decrease 0.36 cu. yd. per foot in height.
4. Deduct approximately 0.1 cu. yd. of concrete per pipe.
5. ⬚ Compact this volume with D.G.A. base or equivalent.
6. Steps are required for depths greater than 4' refer to Std. Dwg. 103.

APPROX. QUANTITIES

TYPE	CONCRETE 3'–9"③ BOX	REINF. STEEL
SAG	4.4 CU. YD. ④	282 LBS.
GRADE	3.4 CU. YD. ④	192 LBS.

BILL OF REINFORCEMENT

BAR	NO.	SIZE	LENGTH	APPROX. SPACING
a	40 OR 56	#5	3'–0"	12" C TO C
b	25 OR 40	#4	4'–0"	AS SHOWN

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

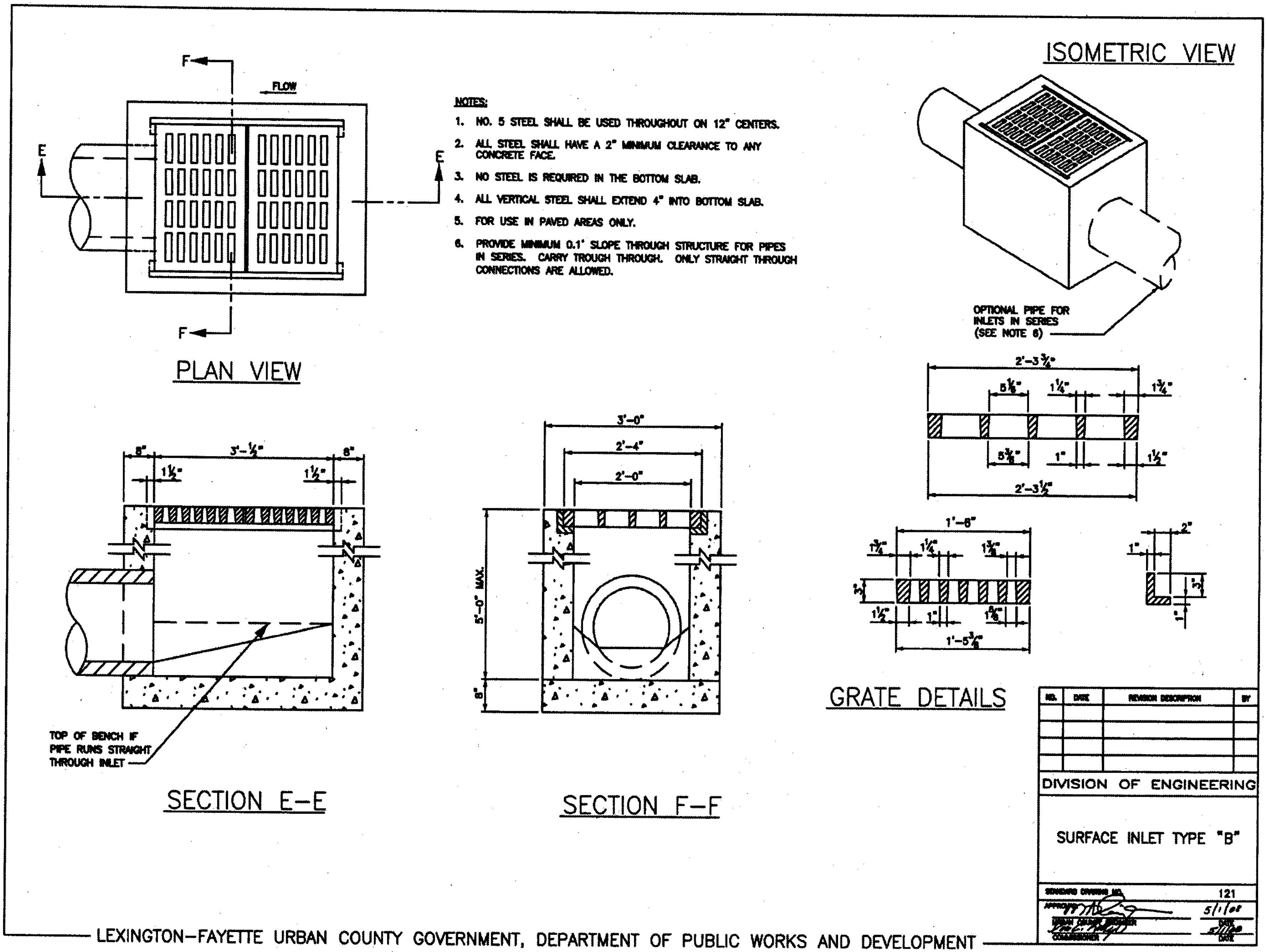
SURFACE INLET TYPE "A"

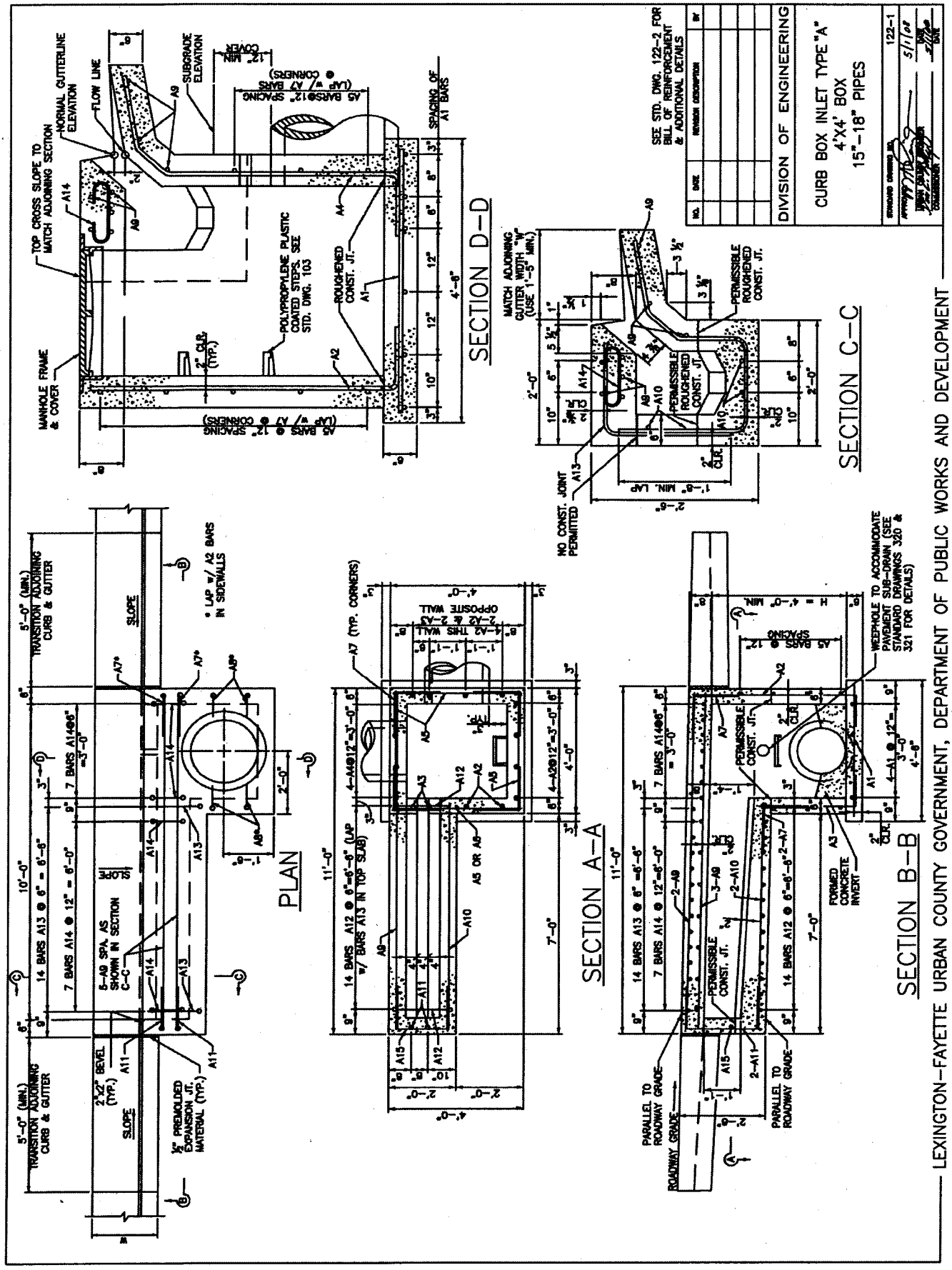
STANDARD DRAWING NO. 120

APPROVED: DIVISION DIRECTOR — DATE 5/1/08

COMMISSIONER — DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT


ISOMETRIC VIEW
OPTIONAL PIPE FOR INLETS IN SERIES (SEE NOTE 6)
PLAN VIEW
FLOW
E
F
NOTES:
1. NO. 5 STEEL SHALL BE USED THROUGHOUT ON 12" CENTERS.
2. ALL STEEL SHALL HAVE A 2" MINIMUM CLEARANCE TO ANY CONCRETE FACE.
3. NO STEEL IS REQUIRED IN THE BOTTOM SLAB.
4. ALL VERTICAL STEEL SHALL EXTEND 4" INTO BOTTOM SLAB.
5. FOR USE IN PAVED AREAS ONLY.
6. PROVIDE MINIMUM 0.1' SLOPE THROUGH STRUCTURE FOR PIPES IN SERIES. CARRY TROUGH THROUGH. ONLY STRAIGHT THROUGH CONNECTIONS ARE ALLOWED.
8"
3'-½"
1½"
TOP OF BENCH IF PIPE RUNS STRAIGHT THROUGH INLET
SECTION E–E
3'-0"
2'-4"
2'-0"
5'-0" MAX.
SECTION F–F
2'-3¾"
5⅛"
1¼"
1¾"
5⅜"
1"
1½"
2'-3½"
1'-6"
1'-5⅞"
2"
GRATE DETAILS
NO.
DATE
REVISION DESCRIPTION
BY
DIVISION OF ENGINEERING
SURFACE INLET TYPE "B"
STANDARD DRAWING NO.
121
APPROVED
URBAN COUNTY ENGINEER
COMMISSIONER
5/1/08
DATE
LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

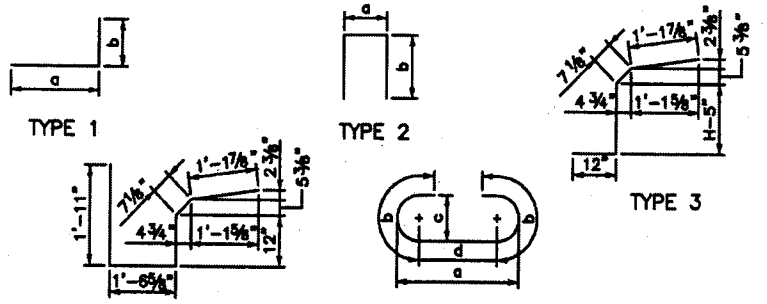

CURB BOX INLET TYPE "A"
4'X4' BOX
15"-18" PIPES
DIVISION OF ENGINEERING
122-1
SECTION D-D
SECTION C-C
SECTION A-A
SECTION B-B
PLAN
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

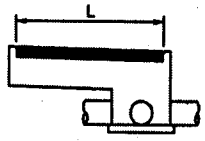
BILL OF REINFORCEMENT

MARK	TYPE	SIZE	NO.	LENGTH FT.	LENGTH IN.	LOCATION	a FT.	a IN.	b FT.	b IN.	c FT.	c IN.	d FT.	d 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				

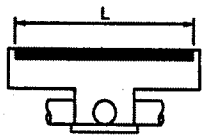
* NO. OF BARS REQUIRED FOR H=4'-0"
ADD OR DEDUCT 4-A5 & 4-A7 FOR EACH 1'-0" INCREASE OR DECREASE IN H.

BAR TYPES





GRADE

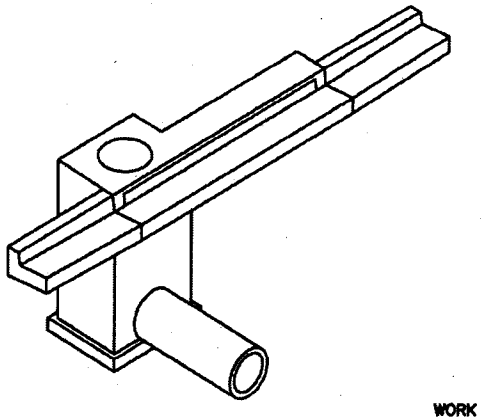


SAG

CURVE LENGTH

DETAIL 'A'

APPLICABLE SITUATIONS



ISOMETRIC VIEW

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 ¾" 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.

WORK THIS DWG. WITH STD. DWG. 122-1

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

CURB BOX INLET TYPE "A"
4'X4' BOX
15'-18" PIPES

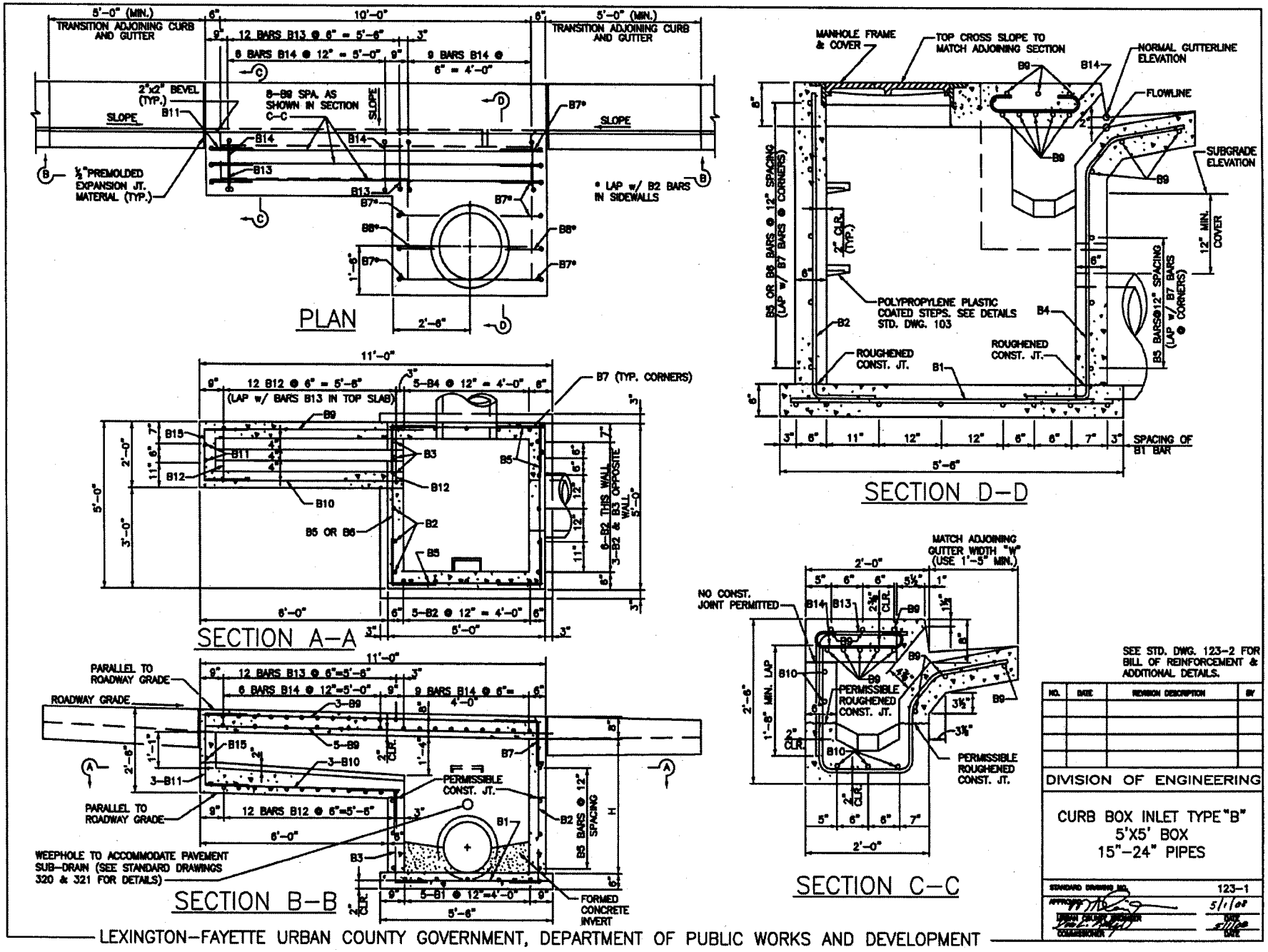
STANDARD DRAWING NO. 122-2

APPROVED: [signature] DATE 5/1/08

DIRECTOR, DIVISION OF ENGINEERING AND ENVIRONMENTAL MANAGEMENT: [signature] DATE 5/1/08

COMMISSIONER

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

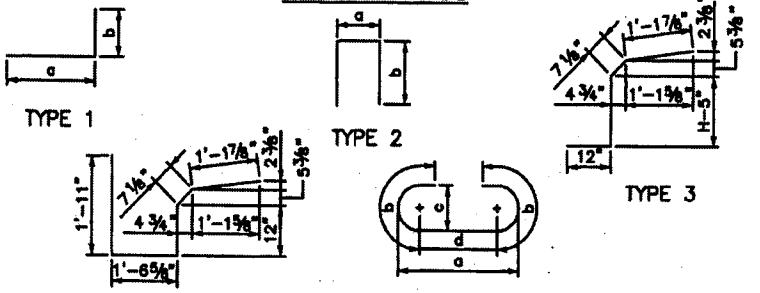

PLAN
SECTION A–A
SECTION B–B
SECTION C–C
SECTION D–D
TRANSITION ADJOINING CURB AND GUTTER
12 BARS B13 @ 6" = 5'-6"
8 BARS B14 @ 12" = 5'-0"
9 BARS B14 @ 6" = 4'-0"
2"x2" BEVEL (TYP.)
SLOPE
8-B9 SPA. AS SHOWN IN SECTION C-C
½" PREMOLDED EXPANSION JT. MATERIAL (TYP.)
* LAP w/ B2 BARS IN SIDEWALLS
12 B12 @ 6" = 5'-6" (LAP w/ BARS B13 IN TOP SLAB)
5-B4 @ 12" = 4'-0"
B7 (TYP. CORNERS)
5-B2 @ 12" = 4'-0"
B5 OR B6
6-B2 & B3 OPPOSITE THIS WALL
3-B2 & B3 OPPOSITE WALL
PARALLEL TO ROADWAY GRADE
ROADWAY GRADE
PERMISSIBLE CONST. JT.
12 BARS B12 @ 6"=5'-6"
B5 BARS @ 12" SPACING
WEEPHOLE TO ACCOMMODATE PAVEMENT SUB-DRAIN (SEE STANDARD DRAWINGS 320 & 321 FOR DETAILS)
5-B1 @ 12"=4'-0"
FORMED CONCRETE INVERT
MANHOLE FRAME & COVER
TOP CROSS SLOPE TO MATCH ADJOINING SECTION
NORMAL GUTTERLINE ELEVATION
FLOWLINE
SUBGRADE ELEVATION
12" MIN. COVER
POLYPROPYLENE PLASTIC COATED STEPS. SEE DETAILS STD. DWG. 103
ROUGHENED CONST. JT.
B5 OR B6 BARS @ 12" SPACING (LAP w/ B7 BARS @ CORNERS)
B5 BARS @ 12" SPACING (LAP w/ B7 BARS @ CORNERS)
SPACING OF B1 BAR
MATCH ADJOINING GUTTER WIDTH "W" (USE 1'-5" MIN.)
NO CONST. JOINT PERMITTED
PERMISSIBLE ROUGHENED CONST. JT.
SEE STD. DWG. 123-2 FOR BILL OF REINFORCEMENT & ADDITIONAL DETAILS.
NO. DATE REVISION DESCRIPTION BY
DIVISION OF ENGINEERING
CURB BOX INLET TYPE "B"
5'X5' BOX
15"–24" PIPES
STANDARD DRAWING NO. 123-1
APPROVED
DATE 5/1/08
DIRECTOR
COMMISSIONER
DATE 5/1/08
LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

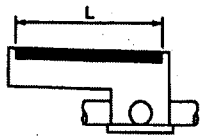
BILL OF REINFORCEMENT

MARK	TYPE	SIZE	NO.	LENGTH FT.	LENGTH IN.	LOCATION	a FT.	a IN.	b FT.	b IN.	c FT.	c IN.	d FT.	d 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	1 5/8	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				

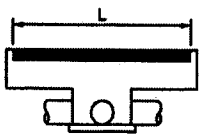
* NO. OF BARS REQUIRED FOR H=4'-0"
ADD OR DEDUCT 4-B5 & 4-B7 FOR EACH 1'-0" INCREASE OR DECREASE IN H.

BAR TYPES





GRADE

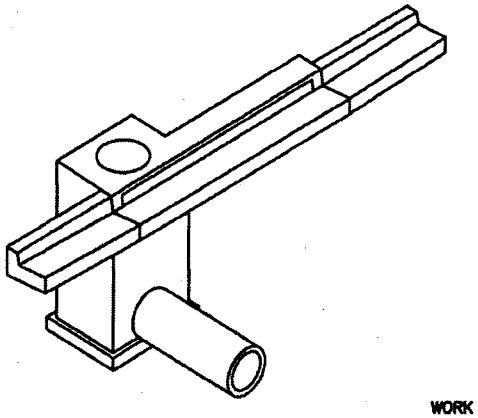


SAG

CURVE LENGTH

DETAIL 'A'

APPLICABLE SITUATIONS



ISOMETRIC VIEW

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 ¾" 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 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.

WORK THIS DWG. WITH STD. DWG. 123-1

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

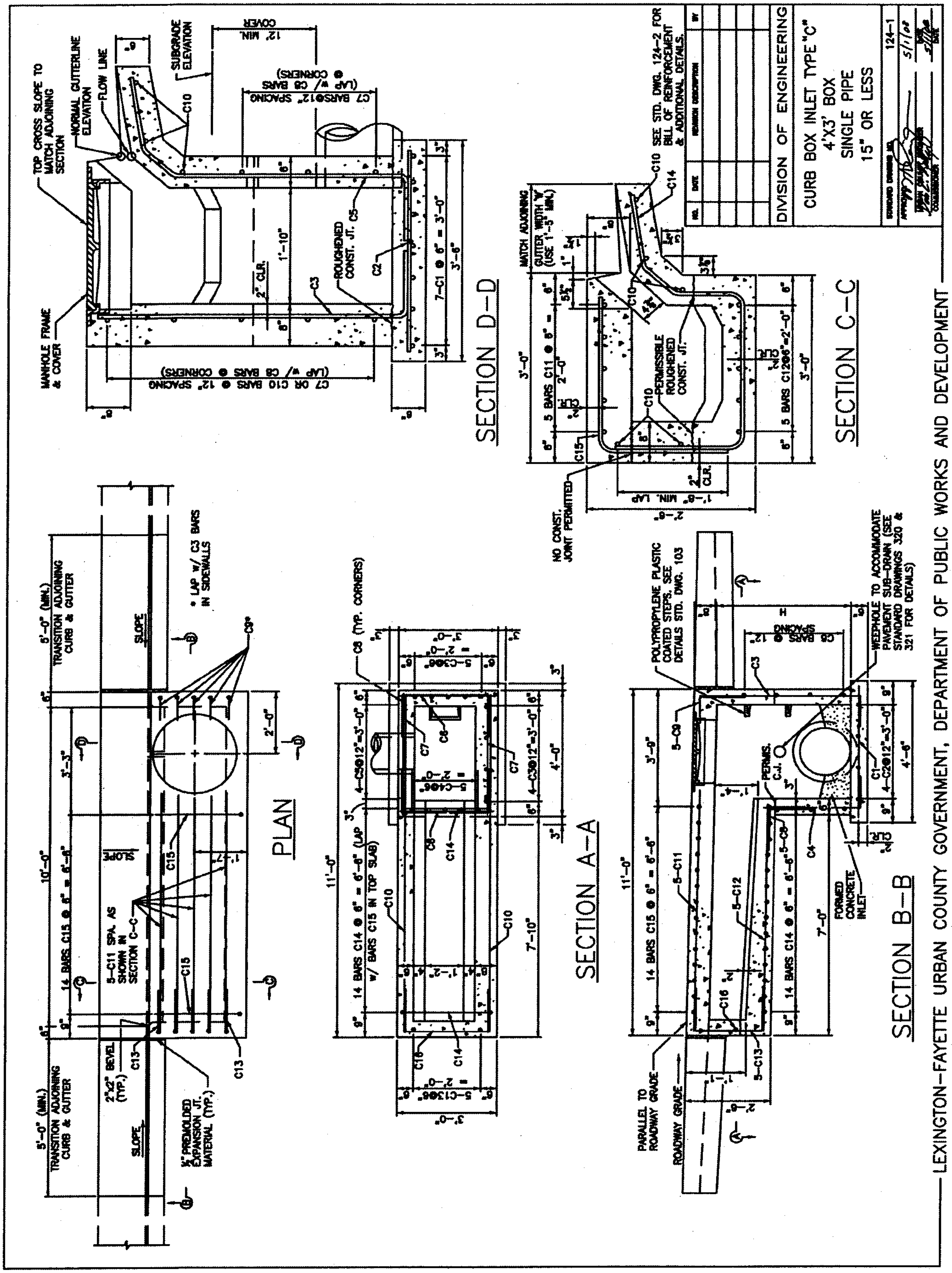
CURB BOX INLET TYPE "B"
5'X5' BOX
15"-24" PIPES

STANDARD DRAWING NO. 123-2

APPROVED [signature] DATE 5/1/02

URBAN COUNTY ENGINEER [signature] DATE 5/1/02

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

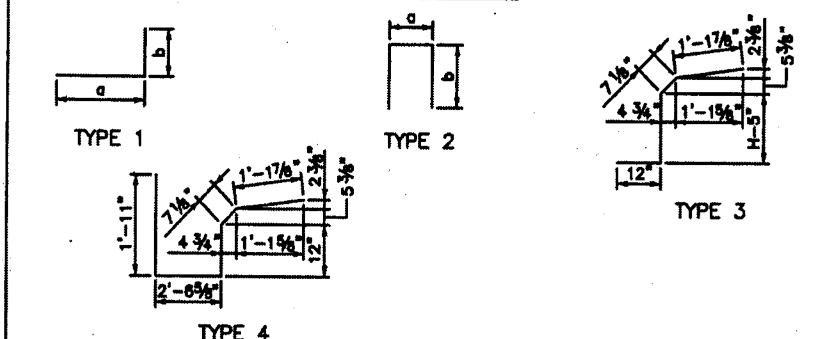

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT
DIVISION OF ENGINEERING
CURB BOX INLET TYPE "C"
4'X3' BOX
SINGLE PIPE
15" OR LESS
124-1
C10 SEE STD. DWG. 124-2 FOR BILL OF REINFORCEMENT & ADDITIONAL DETAILS.
PLAN
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
MANHOLE FRAME & COVER
TOP CROSS SLOPE TO MATCH ADJOINING SECTION
NORMAL GUTTERLINE ELEVATION
FLOW LINE
SUBGRADE ELEVATION
12" MIN. COVER
ROUGHENED CONST. JT.
PERMISSIBLE ROUGHENED CONST. JT.
NO CONST. JOINT PERMITTED
MATCH ADJOINING GUTTER WIDTH "W" (USE 1'-3" MIN.)
5'-0" (MIN.) TRANSITION ADJOINING CURB & GUTTER
½" PREMOLDED EXPANSION JT. MATERIAL (TYP.)
2"X2" BEVEL (TYP.)
5-C11 SPA. AS SHOWN IN SECTION C-C
* LAP w/ C3 BARS IN SIDEWALLS
14 BARS C15 @ 6" = 6'-6"
14 BARS C14 @ 6" = 6'-6" (LAP w/ BARS C15 IN TOP SLAB)
C8 (TYP. CORNERS)
POLYPROPYLENE PLASTIC COATED STEPS. SEE DETAILS STD. DWG. 103
WEEPHOLE TO ACCOMMODATE PAVEMENT SUB-DRAIN (SEE STANDARD DRAWINGS 320 & 321 FOR DETAILS)
FORMED CONCRETE INLET
PARALLEL TO ROADWAY GRADE
ROADWAY GRADE

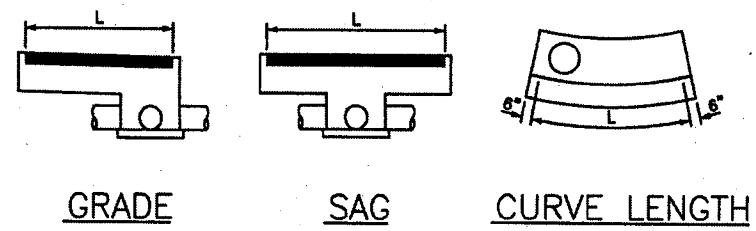
BILL OF REINFORCEMENT

MARK	TYPE	SIZE	NO.	LENGTH FT.	LENGTH IN.	LOCATION	a FT.	a IN.	b FT.	b IN.	c FT.	c IN.	d FT.	d IN.
C1	STR	#5	7	4	2	FOOTING								
C2	STR	#5	4	3	2	FOOTING								
C3	1	#5	9	H+(1'-10")		CHAMBER WALLS	1	0	H+10"					
C4	1	#5	5	H-4"		CHAMBER WALLS	1	0	H-(1'-4")					
C5	3	#5	4	H+(2'-4")		CHAMBER WALLS								
C6	STR	#5	7*	2	8	CHAMBER WALLS								
C7	STR	#5	6*	3	8	CHAMBER WALLS								
C8	1	#5	19*	2	8	CORNERS	1	4	1	4				
C9	1	#5	5	2	1	CHAMBER WALLS & TOP	1	4	0	9				
C10	STR	#5	5	10	8	THROAT & APRON								
C11	STR	#5	5	7	7	TOP SLAB								
C12	STR	#5	5	7	2	THROAT								
C13	2	#5	5	4	8	END THROAT	2	1	1	4				
C14	4	#5	14	7	1	THROAT & APRON								
C15	1	#5	14	4	5	THROAT	1	11	2	6				
C16	2	#5	1	5	1	END THROAT	2	6	1	4				

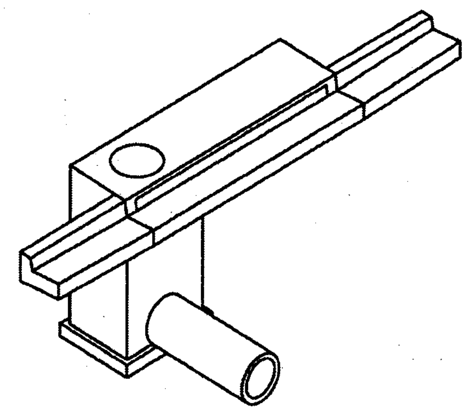
* NO. OF BARS REQUIRED FOR H=4'-0"
ADD OR DEDUCT 2-C6, 2-C7 & 4-C8 FOR EACH 1'-0" INCREASE OR DECREASE IN H.

BAR TYPES





DETAIL 'A'
APPLICABLE SITUATIONS



ISOMETRIC VIEW

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 URBAN COUNTY GOVERNMENT ENGINEER. MODIFICATION TO THE OPENING LENGTH WILL REQUIRE MODIFICATION OF LENGTH OF BARS C10, C11 & C12 AND INCREASE OR DECREASE IN NUMBER OF BARS C14 & C15 MAINTAINING THE SAME MAXIMUM SPACING SHOWN ON THIS DRAWING.
4. MAXIMUM "H" FOR APPLICATION OF THIS DRAWING SHALL BE 5 FEET.
5. FIELD BEND OR CUT BARS C3, C5, C6 & C7 AS NECESSARY WHERE PIPES PENETRATE CHAMBER WALLS.
6. FOR CURB BOX INLET IN CURVE WITH CURB RADIUS OF LESS THAN 25', LONGITUDINAL BARS C10, C11 & C12 SHALL BE SHOP FABRICATED RADIALLY.

WORK THIS DWG. WITH STD. DWG. 124-1

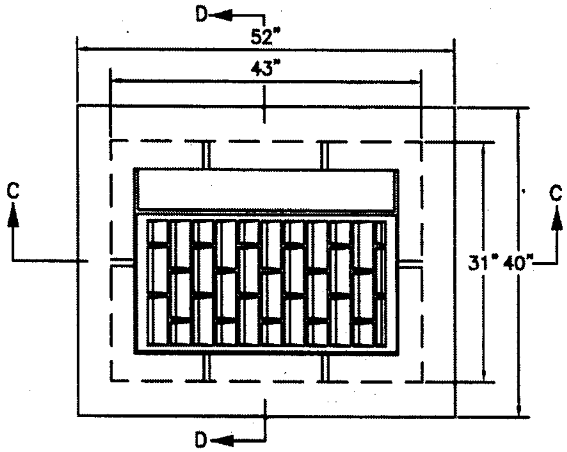
NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

CURB BOX INLET TYPE "C"
4'X3' BOX
SINGLE PIPE
15" OR LESS

STANDARD DRAWING NO. 124-2
APPROVED: URBAN COUNTY ENGINEER — DATE 5/1/08
COMMISSIONER — DATE 5/1/08

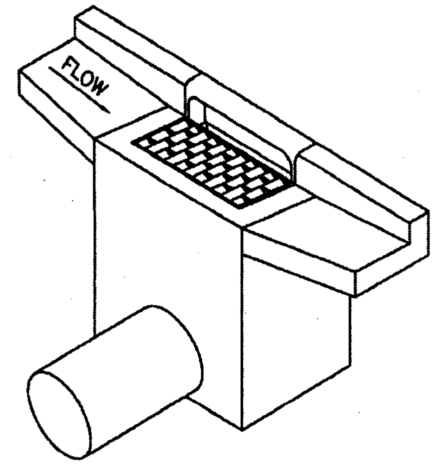
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



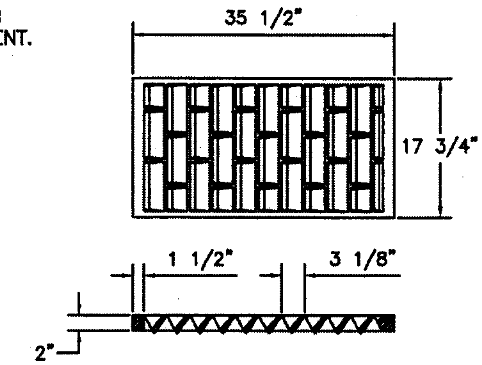
PLAN

NOTES:

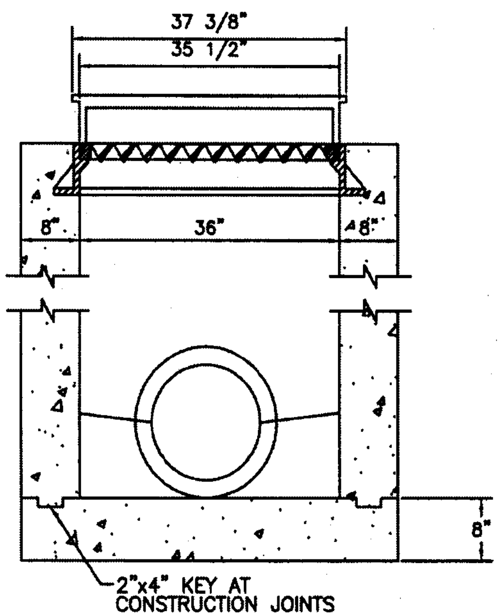
1. CURB BOX ADJUSTABLE 6" TO 9" TO MATCH TOP OF CURB.
2. NO. 5 STEEL SHALL BE USED THROUGHOUT ON 12" CENTERS. 2" CLEARANCE ON ALL EXTERIOR WALL BARS. EXTERIOR HORIZ. WALL BARS SHALL HAVE A 12" MIN. LAP AT CORNERS.
3. ALL EXPOSED FLATWORK SHALL HAVE A HAND FLOATED AND BROOMED FINISH.
4. NO STEEL IS REQUIRED IN BOTTOM SLAB.
5. ALL VERTICAL STEEL SHALL EXTEND 4" INTO BOTTOM SLAB. VERTICAL STEEL SHALL HAVE A 12" LAP INTO BOTTOM SLAB WITH 3" CLEARANCE FROM EXTERIOR BOTTOM.
6. SET BACK OF FRAME IN CONCRETE TO ANCHOR IN PLACE AFTER IT HAS BEEN ADJUSTED.
7. 18" MAX. PIPE DIAMETER.
8. EAST JORDAN IRON WORKS CATCH BASIN CURB INLET 7035 WITH TYPE M6 GRATE OR EQUIVALENT.



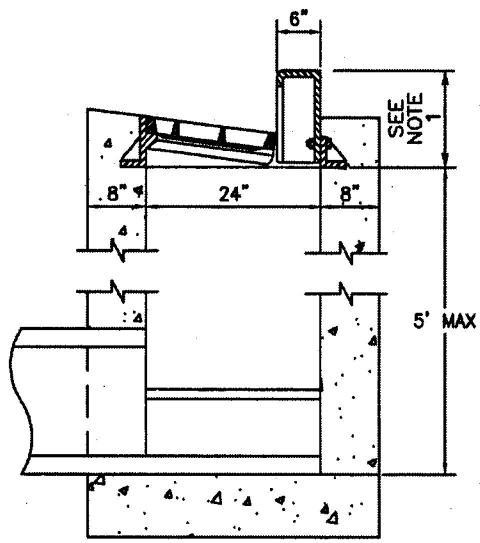
ISOMETRIC VIEW



GRATE DETAIL



SECTION C–C



SECTION D–D

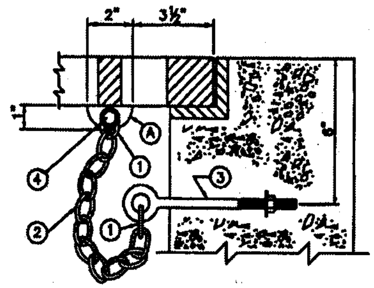
NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

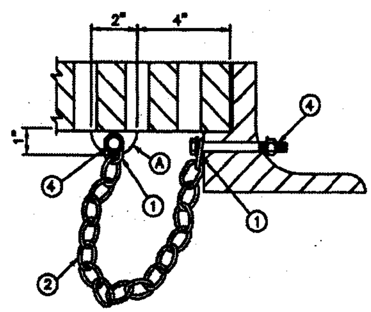
CURB BOX INLET
TYPE "D"

STANDARD DRAWING NO. 125
APPROVED 5/1/08
URBAN COUNTY ENGINEER
COMMISSIONER DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



GRATE CONNECTED TO WALL

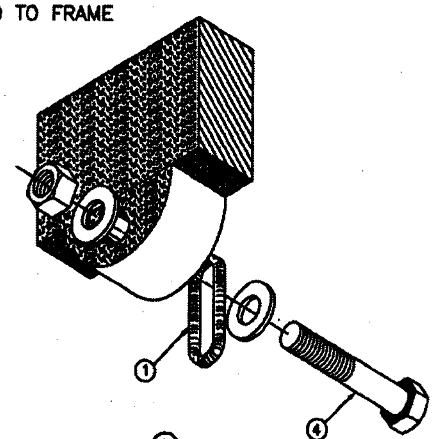


GRATE CONNECTED TO FRAME

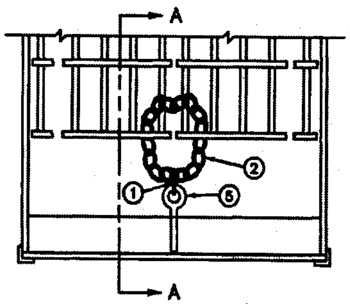
TYPICAL ILLUSTRATIONS FOR CASTINGS

NOTES:

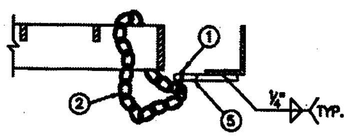
1. CHAIN SHACKLE, OR COLD SHUT OF AN APPROVED TYPE.
2. ⅜" PROOF COIL CHAIN OF SUFFICIENT LENGTH TO ALLOW REMOVAL AND DISPLACEMENT OF GRATE, 18" MIN.
3. ⅜" x 6" EYE BOLT, NUT, AND WASHER.
4. ⅜" HEX HEAD CAP SCREW (GRADE 2), NUT AND WASHERS. LENGTH DETERMINED BY THICKNESS OF FRAME OR GRATE. 7/16" DIA. HOLE FOR CAP SCREW. BATTER THREADS ON CAP SCREW TO PREVENT REMOVAL OF NUT.
5. ⅜" EYE BOLT (LENGTH DETERMINED BY THE FRAME DIMENSION).
6. ALL EYE BOLTS SHALL HAVE A CONTINUOUS OR SOLID EYE.
7. ALL HARDWARE SHALL BE GALVANIZED AND OF COMMERICAL QUALITY AND SHALL BE APPROVED BY THE ENGINEER.
8. THE COST OF THE COMPLETE SECURITY DEVICE, INSTALLED, SHALL BE INCIDENTAL TO THE COST OF THE STRUCTURE.
9. THE DESIGNS SHOWN ARE ACCEPTABLE; HOWEVER ARE SUBJECT TO CHANGE IF APPROVED IN WRITING BY THE ENGINEER.



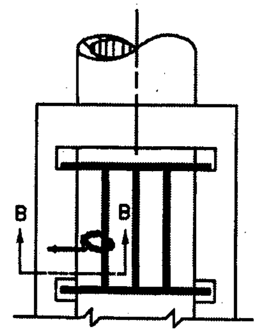
(A) LUG ON CENTER CROSS MEMBER AND BOLT ASSEMBLY (AXONOMETRIC VIEW)



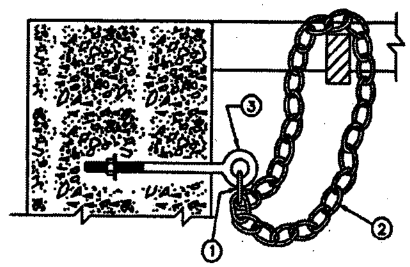
PLAN VIEW



SECTION A–A
GRATE CONNECTED TO FRAME

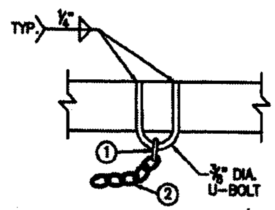


PLAN VIEW



SECTION B–B

GRATE CONNECTED TO WALL



ALTERNATE FOR STRUCTURAL STEEL MEMBERS

TYPICAL ILLUSTRATIONS FOR STRUCTURAL STEEL UNITS

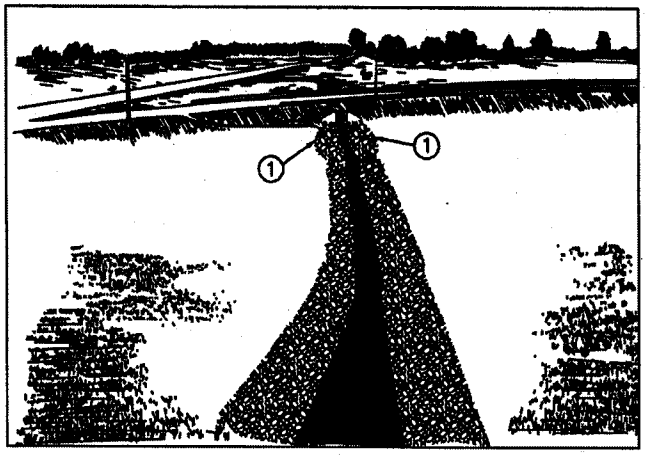
LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

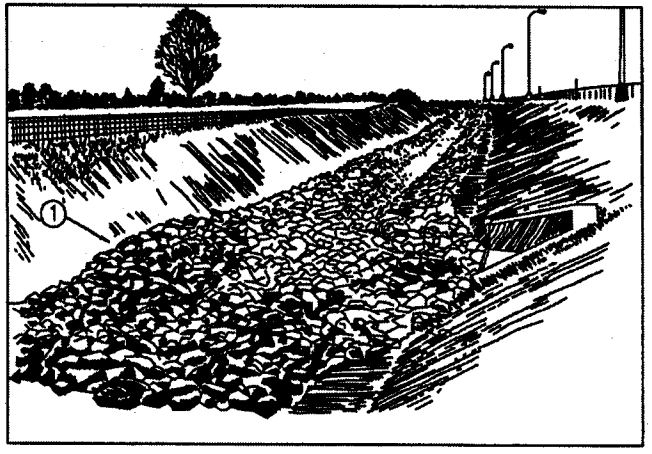
NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

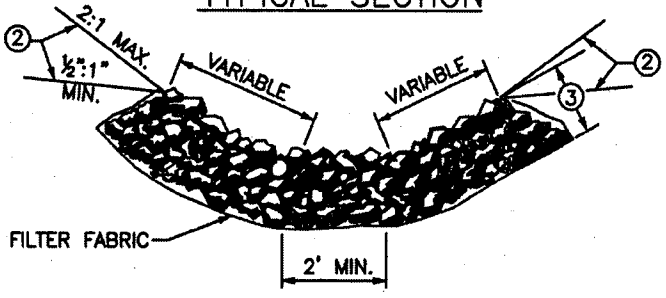
SECURITY DEVICES FOR FRAMES AND GRATES

STANDARD DRAWING NO. 128
APPROVED 5/1/08
URBAN COUNTY ENGINEER
COMMISSIONER
DATE





TYPICAL SECTION



NOTES:

1. AGGREGATE CHANNEL LINING WILL NOT BE REQUIRED IN THE BOTTOM OF THE DITCH WHERE SOLID ROCK IS ENCOUNTERED. SIDE SLOPES SHALL BE LINED.
2. AGGREGATE ESTIMATED ON THE BASIS OF 0.50 TON/SQ. YD. PER FOOT OF DEPTH.

SHEET NOTES:

① WIDEN CHANNEL LINING AT STRUCTURES TO PREVENT EROSION.

② ALTERNATE LOCATION OF GROUNDLINE.

③ MINIMUM DEPTH OF CHANNEL LINING SHALL BE 24". LESSER DEPTHS SHALL HAVE APPROVAL FROM THE ENGINEER. STONE SHALL BE WELL GRADED SO THAT OPENINGS BETWEEN LARGER STONES ARE FILLED WITH SMALLER STONES.

SHEET 1 OF 2

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

AGGREGATE CHANNEL LINING

STANDARD DRAWING NO. 130-1

APPROVED: DIRECTOR, DIVISION OF ENGINEERING — DATE 5/1/08

COMMISSIONER — DATE 5/1/08

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

NOTES:

1. BEDDING MATERIAL SHOULD NOT BE SMALLER THAN KDOT NO. 2 COARSE AGGREGATE STONE. THE REQUIREMENTS FOR KDOT NO. 2 COARSE AGGREGATE STONE ARE AS FOLLOWS:

SIEVE SIZE (INCHES)	PERCENT PASSING
3 ½	100
2 ½	70–85
1 ½	0–10

2. BEDDING SHOULD BE AT LEAST THREE INCHES AND SPREAD UNIFORMLY.

3. PLASTIC FILTER FABRIC MAY BE USED IN PLACE OF OR IN CONJUNCTION WITH GRAVEL FILTERS. THE FOLLOWING PARTICLE SIZE RELATIONSHIPS MUST EXIST:

A. FOR FILTER FABRIC ADJACENT TO GRANULAR MATERIALS CONTAINING 50 PERCENT OR LESS (BY WEIGHT) OF FINE PARTICLES (LESS THAN 0.074 mm):

1.) $\frac{\text{D (PARTICLE DIAMETER) 85 BASE (mm)}}{\text{EOS* FILTER FABRIC (mm)}} > 1$

2.) TOTAL OPEN AREA OF FILTER IS LESS THAN 36 PERCENT.

B. FOR FILTER FABRIC ADJACENT TO ALL OTHER SOILS:

1.) EOS* LESS THAN U.S. STANDARD SIEVE NO. 70

2.) TOTAL OPEN AREA OF FILTER IS LESS THAN 10 PERCENT.

4. NO FILTER FABRIC SHOULD BE USED WITH LESS THAN 4 PERCENT OPEN AREA OR AN EOS* LESS THAN U.S. STANDARD SIEVE NO. 100.

5. *EOS – EQUIVALENT OPENING SIZE TO A U.S. STANDARD SIEVE SIZE.

6. THE FOLLOWING CHART SHOWS HOW TO DETERMINE THE DIAMETER OF STONE IN RELATION TO DESIGN VELOCITY.

VELOCITY (FEET/SECOND)	STONE DIAMETER (INCHES)
4	2½
6	5
8	9
10	14

SHEET 2 OF 2

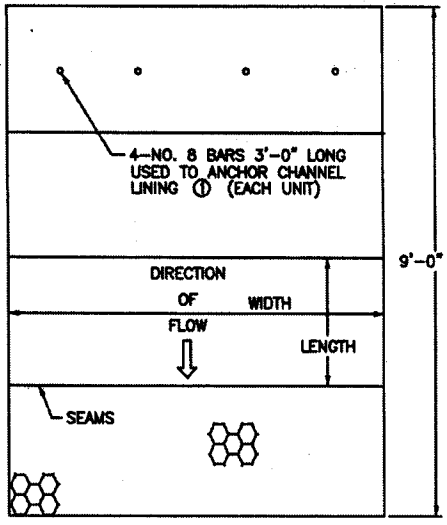
NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

AGGREGATE
CHANNEL LINING

STANDARD DRAWING NO. 130-2
APPROVED 5/1/08
URBAN COUNTY ENGINEER DATE
COMMISSIONER DATE 5/1/08

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



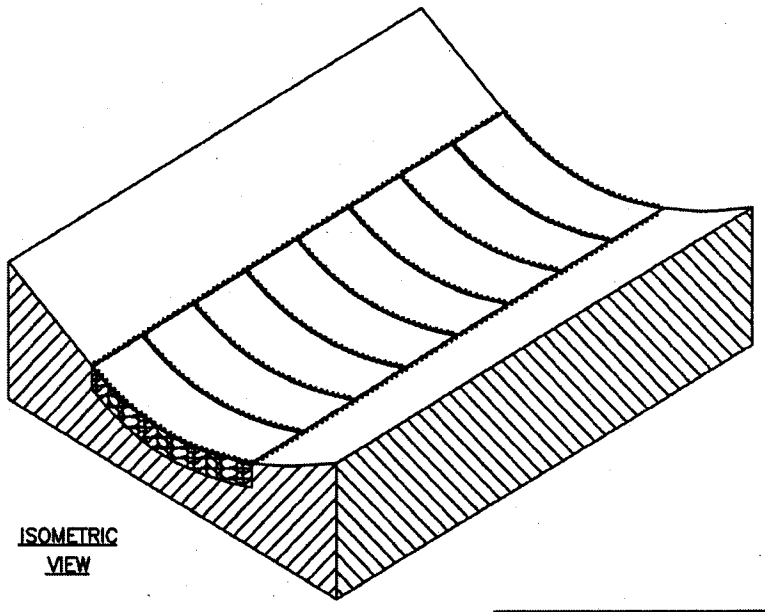
PLAN

SHEET NOTES:

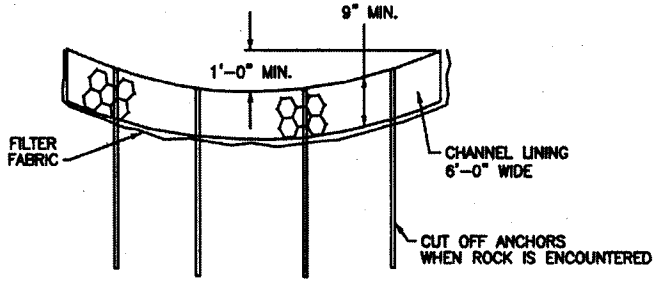
① ANCHORS REQUIRED WHEN LINING IS PLACED ON 5% GRADE OR GREATER.

NOTES:

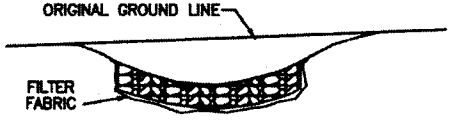
1. SECURE THE LACING WIRE AT THE CORNER OF THE BASKET BY LOOPING AND TWISTING, CONTINUE LACING THROUGHOUT WITH DOUBLE LOOPS AT APPROXIMATELY 5 INCH INTERVALS. EACH UNIT SHALL CONSIST OF LININGS SUPPLIED IN WIDTHS OF 6'–0" AS SHOWN AND LENGTHS IN MULTIPLES OF 3'–0".
2. AGGREGATE ESTIMATED ON THE BASIS OF 0.375 TONS PER SQ. YD.
3. MATTRESS SHALL BE MANUFACTURED FROM WIRE WITH A MINIMUM TENSILE STRENGTH OF 40,000 PSI.
4. STONE SIZE PER MANUFACTURER SPECIFICATIONS.



ISOMETRIC VIEW



ELEVATION



NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

MATTRESS CHANNEL LINING

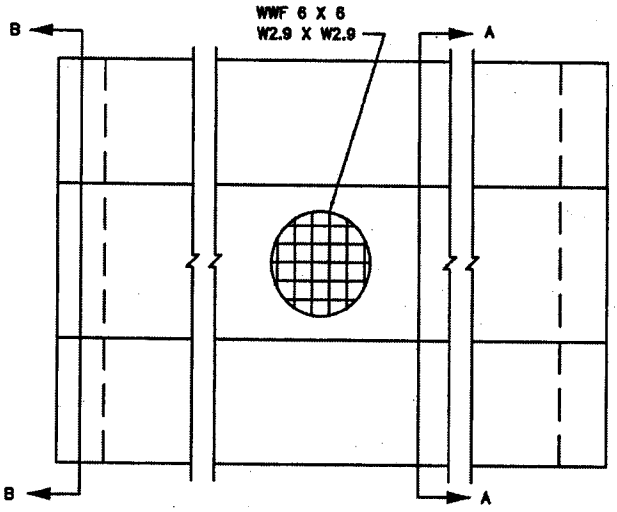
STANDARD DRAWING NO. 131

APPROVED 5/1/08

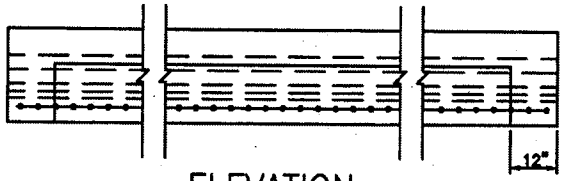
URBAN COUNTY ENGINEER DATE

COMMISSIONER DATE

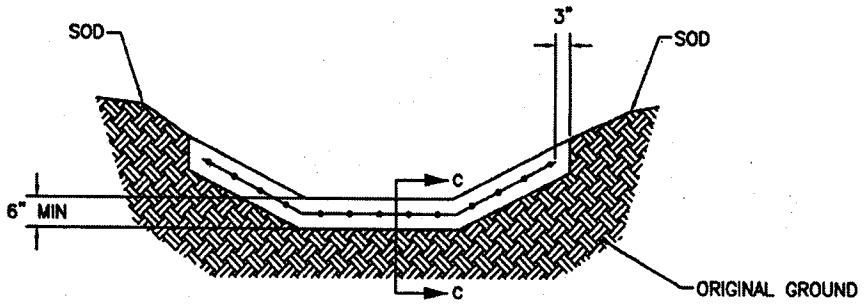
LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



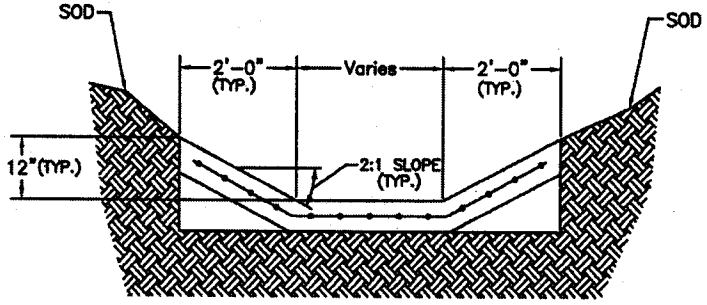
PLAN



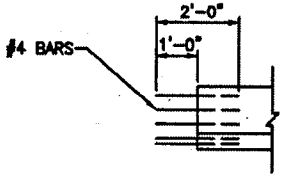
ELEVATION



SECTION A–A



SECTION B–B



SECTION C–C
(● CONSTRUCTION JOINT)

NOTES:

1. USE "CLASS A" CONCRETE THROUGHOUT.
2. COMPACTION, FINISHING AND CURING SHALL BE THE SAME AS REQUIRED FOR CONCRETE SIDEWALK (USE WHITE COMPOUND).
3. IF THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT IN THE POURING OF THE PAVED DITCH, NO. 4 TIE BARS SPACED 6" O.C. SHALL BE USED (SEE SECTION C–C).
4. INTERMEDIATE ANCHORS MAY BE REQUIRED BY THE ENGINEER FOR SPECIAL CASES. A SPECIAL DESIGN WILL BE REQUIRED IN THIS SITUATION.
5. SHOULD THE TERRAIN OF THE EXISTING GROUND BE SO THAT WATER WOULD DRAIN INTO THE DITCH FROM ONE SIDE ONLY, THEN SODDING WILL BE REQUIRED ON THAT ONE SIDE ONLY OF THE DITCH.
6. EXPANSION JOINTS & SEALER REQUIRED ON ENDS ABUTTING STRUCTURES AND ANCHORS ON ENDS NOT ABUTTING STRUCTURES.
7. IF FIBER REINFORCED CONCRETE IS USED THE WWF 6 x 6 MAY BE ELIMINATED.
8. DO NOT PLACE PAVED DITCH ON DISTURBED SOIL.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

PAVED DITCH

STANDARD DRAWING NO. 132

APPROVED 5/1/08 DATE

URBAN COUNTY ENGINEER

COMMISSIONER 5/1/08 DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

HEADWALL TYPE	DIA. OF PIPE	HEADWALL DIMENSIONS				
		A	B	C	D	E
④ STANDARD	15"	1'-8 ½"	1'-2 ½"	4'-3"	2'-9"	6'-9"
	18"	1'-9"	1'-3"	4'-6"	3'-0"	7'-6"
	21"	1'-9 ½"	1'-3 ½"	4'-9"	3'-3"	8'-3"
	24"	1'-10"	1'-4"	5'-0"	3'-6"	9'-0"
	27"	1'-10 ½"	1'-4 ½"	5'-3"	3'-9"	9'-9"
⑤ RAISED	15"	1'-8 ½"	1'-2 ½"	4'-9"	3'-3"	8'-3"
	18"	1'-9"	1'-3"	5'-0"	3'-6"	9'-0"
	21"	1'-9 ½"	1'-3 ½"	5'-3"	3'-9"	9'-9"
	24"	1'-10"	1'-4"	5'-6"	4'-0"	10'-6"
	27"	1'-10 ½"	1'-4 ½"	5'-9"	4'-3"	11'-3"

NOTES:

① HEIGHT OF FOOTER SHALL BE 18" FOR SOIL AND 12" IN ROCK.

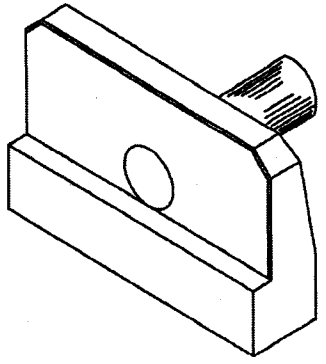
2. ALL EXPOSED EDGES TO BE CHAMFERED ¾".

3. ALL EXPOSED SURFACES TO HAVE A RUBBED FINISH.

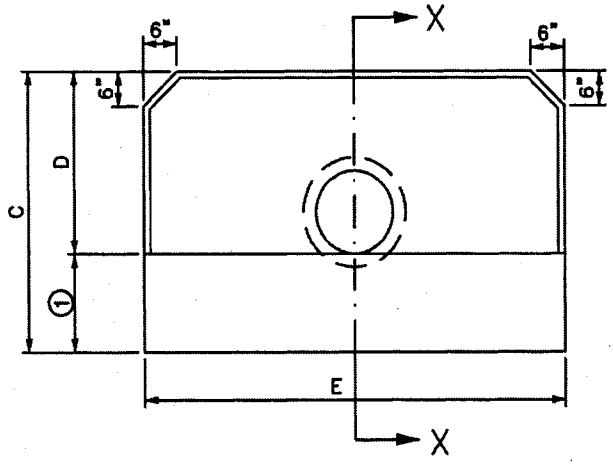
④ STANDARD HEADWALLS ARE FLUSH WITH SOIL FILL.

⑤ RAISED HEADWALLS PROTRUDE 6" ABOVE SOIL FILL.

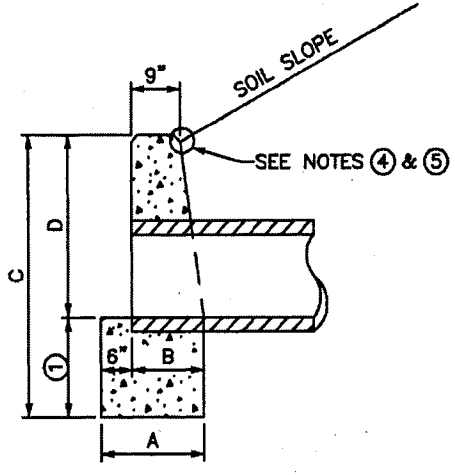
6. CHAIN LINK FENCE IS REQUIRED ON ALL HEADWALLS WHEN VERTICAL FACE "D" IS GREATER THAN 30".



ISOMETRIC VIEW



PLAN ELEVATION



SECTION X–X

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

STRAIGHT HEADWALLS

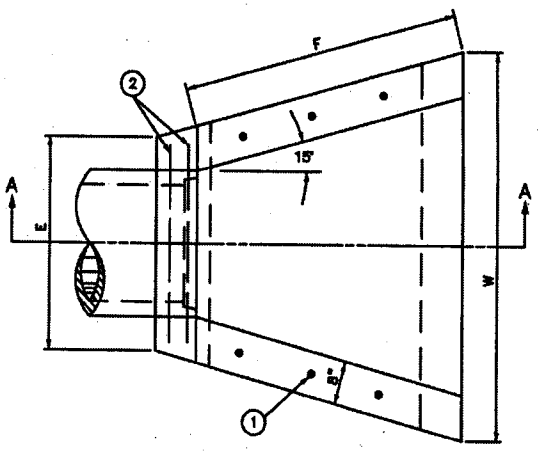
STANDARD DRAWING NO. 150

APPROVED 5/1/08

URBAN COUNTY ENGINEER DATE

COMMISSIONER DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



PLAN VIEW

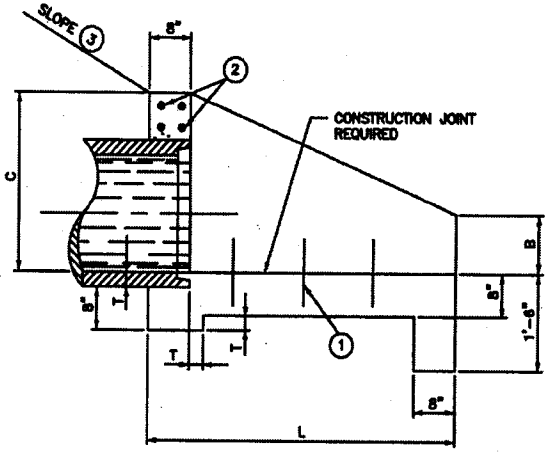
PIPE DIA.	DIMENSIONS							CLASS A CONC.	REINF. STEEL
	B	C	E	F	L	W	T	C.Y.	LBS.
15"	0'-7½"	2'-0"	2'-9"	3'-5⅜"	4'-0"	4'-10¾"	2¼"	0.90	10
18"	0'-9"	2'-3"	3'-0"	3'-11⅝"	4'-6"	5'-4 15/16"	2½"	0.97	11
21"	0'-10½"	2'-6"	3'-3"	4'-5 13/16"	5'-0"	5'-11⅛"	2¾"	1.17	12
24"	1'-0"	2'-9"	3'-6"	5'-0"	5'-6"	6'-5⅜"	3"	1.38	12
27"	1'-1½"	3'-0"	3'-9"	5'-6 3/16"	6'-0"	6'-11 9/16"	3¼"	1.62	13

SHEET NOTES:

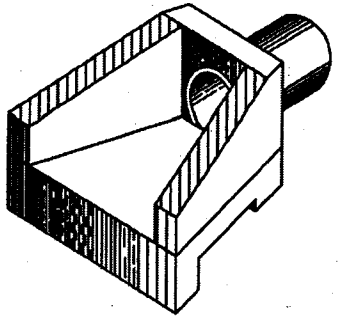
1. 6 #4 x 1'-0" DOWELS
2. 4 #4 x ("E" DIMENSION MINUS 4")
3. SLOPE SHALL BE WARPED TO FIT HEADWALL WHEN PIPE IS SKEWED AND / OR NORMAL SLOPE VARIES FROM 2:1.

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 ¾" CHAMFER.
7. SKEWED PIPE REQUIRES SPECIAL DESIGN.



SECTION A–A



ISOMETRIC VIEW

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

PIPE CULVERT HEADWALLS
0° SKEW
15"–27" CIRCULAR PIPE

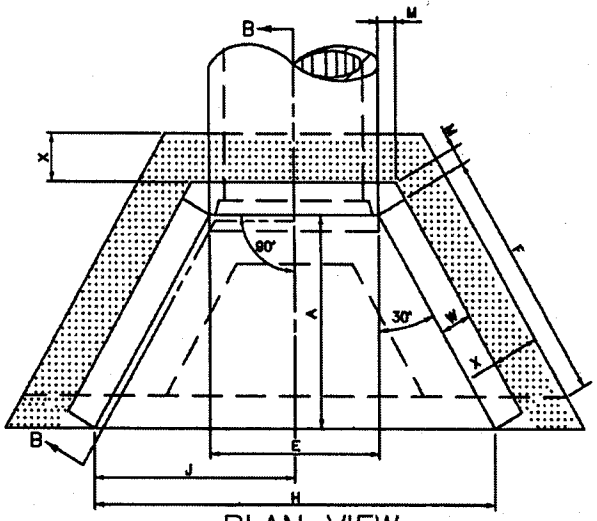
STANDARD DRAWING NO. 153

APPROVED: [signature] DATE 5/1/08

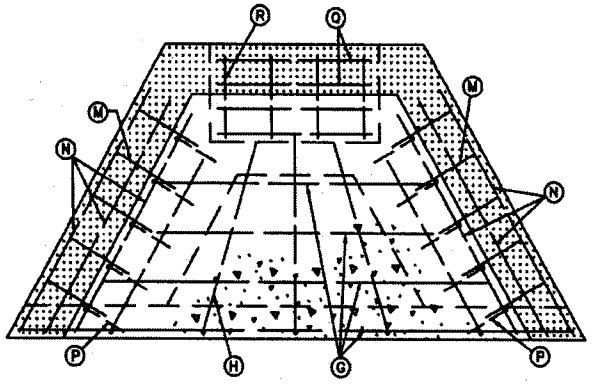
URBAN COUNTY ENGINEER [signature] DATE 5/1/08

COMMISSIONER

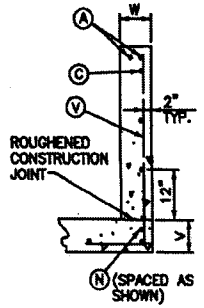
LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



PLAN VIEW

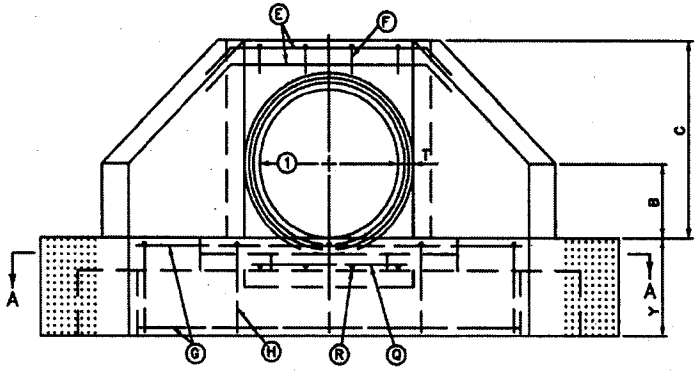


SECTION A–A

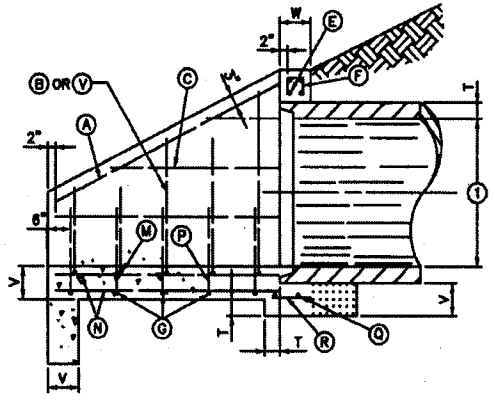


WING SECTION

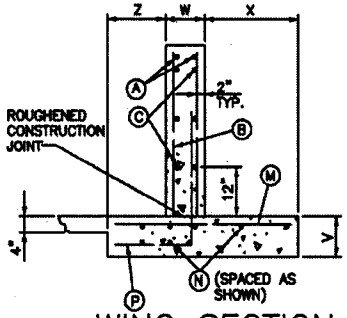
30"–60" CIRCULAR PIPE



FRONT ELEVATION



SECTION B–B



WING SECTION

66"–108" CIRCULAR PIPE

SHEET NOTE: ①

① DIAMETER OF PIPE

NOTES:

1. [dotted] APPLIES TO 66" DIAMETER AND GREATER. (CIRCULAR PIPE)
2. SEE SHEETS 2, 3, AND 4 OF CURRENT STD. DWG. 154 FOR DIMENSIONS, QUANTITIES, AND BILL OF REINFORCEMENT.
3. DIMENSIONS FROM FACE OF CONCRETE TO STEEL SHALL BE 2" CLEAR DISTANCE UNLESS OTHERWISE NOTED.
4. ENCIRCLED LETTERS, Ⓐ, INDICATE STEEL BAR LOCATIONS.
5. BARS Ⓑ, Ⓒ, Ⓖ, Ⓟ, Ⓜ, Ⓥ ARE SPACED 1'–0" O.C. ALL OTHER BARS SHALL BE EVENLY SPACED.
6. BARS Ⓑ AND Ⓥ ARE PLACED IN ORDER OF INCREASING LENGTHS, BEGINNING AT THE END OF EACH WING.
7. BARS Ⓒ ARE PLACED IN ORDER OF INCREASING LENGTHS, BEGINNING AT TOP OF EACH WING.
8. HEADWALLS LOCATED AT EDGE OF SHOULDER SHALL BE PARALLEL TO CENTERLINE OF THE ROAD.
9. APRON BETWEEN WINGS SHALL BE SLOPED IN DIRECTION OF FLOW EQUAL TO SLOPE OF PIPE, NOT TO EXCEED 5%.
10. FRONT OF HEADWALL AND ENDS OF WINGS SHALL REMAIN VERTICAL.
11. FENCE AND / OR HANDRAIL IS REQUIRED FOR ALL HEADWALLS, SEE STD. DWG. 308.
12. ALL EXPOSED EDGES ARE TO HAVE ¾" CHAMFER.

SHEET 1 OF 4

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

PIPE CULVERT HEADWALLS
0° SKEW
30"–108" PIPE

STANDARD DRAWING NO. 154–1

APPROVED [signature] 5/1/08

URBAN COUNTY ENGINEER / COMMISSIONER [signature] DATE 5/1/08

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

DIMENSION	DIAMETER OF PIPE														DIMENSION
	30"	36"	42"	48"	54"	60"	66"	72"	78"	84"	90"	96"	102"	108"	
A	3'-9"	4'-4"	4'-11"	5'-6"	6'-1"	6'-8"	7'-5"	8'-0"	8'-7"	9'-2"	9'-9"	10'-4"	10'-11"	11'-6"	A
B	1'-3"	1'-6"	1'-9"	2'-0"	2'-3"	2'-6"	2'-9"	3'-0"	3'-3"	3'-6"	3'-9"	4'-0"	4'-3"	4'-6"	B
C	3'-6"	4'-0"	4'-7"	5'-1"	5'-8"	6'-2"	7'-0"	7'-5"	8'-0"	8'-6"	9'-1"	9'-7"	10'-2"	10'-8"	C
E	3'-1"	3'-8"	4'-3"	4'-10"	5'-5"	6'-0"	6'-7"	7'-2'	7'-9"	8'-4"	8'-11"	9'-6"	10'-1"	10'-8"	E
F	4'-4"	5'-0"	5'-8"	6'-4"	7'-0"	7'-8"	8'-7"	9'-3"	9'-11"	10'-7"	11'-3"	11'-11"	12'-7"	13'-3"	F
H	7'-6"	8'-8"	10'-0"	11'-2"	12'-6"	13'-8"	15'-2"	16'-6"	17'-8"	19'-0"	20'-2"	21'-6"	22'-8"	24'-0"	H
J	3'-9"	4'-4"	5'-0"	5'-7"	6'-3"	6'-10"	7'-7"	8'-3"	8'-10"	9'-6"	10'-1"	10'-9"	11'-4"	12'-0"	J
M	0'-5"						0'-6"								M
T	0'-3.5"	0'-4.0"	0'-4.5"	0'-5.0"	0'-5.5"	0'-6.0"	0'-6.5"	0'-7.0"	0'-7.5"	0'-8.0"	0'-8.5"	0'-9.0"	0'-9.5"	0'-10.0"	T
V	0'-8"						1'-0"								V
W	0'-8"						0'-10"								W
X	–						2'-0"				2'-6"				X
Y	2'-0"						2'-6"				3'-0"				Y
Z	–						1'-3"				1'-9"				Z
CU.YDS.CONC. HEADWALLS	3.36	4.30	5.35	6.53	7.82	9.22	18.76	20.95	23.25	25.67	31.48	34.31	37.25	40.32	CU.YDS.CONC. HEADWALLS
LBS.STEEL HEADWALLS	281	363	430	496	583	687	1320	1571	1815	2043	2451	2753	3050	3379	LBS.STEEL HEADWALLS

SHEET 2 OF 4

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

DIMENSIONS AND QUANTITIES
30"–108" HEADWALLS
CIRCULAR PIPE
0° SKEW

STANDARD DRAWING NO. 154-2

5/1/02
DATE

5/1/02
DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

30"

MARK	SIZE	NO ①	LGTH FT	LGTH IN	K FT	K IN
A	5	4	4	8		
C1	4	2	2	4		
C2	4	2	4	2		
E1	5	2	6	4	3	4
E2	5	2	6	8	3	8
F	4	3	1	3	0	4
G1	4	2	3	10		
G2	4	3	6	2		
H	4	4	5	1	3	5
N	4	6	4	2		
Q	4	2	2	9		
R	4	3	0	8		
V1	5	4	3	1	1	10
V2	5	4	4	1	2	10

36"

MARK	SIZE	NO ①	LGTH FT	LGTH IN	K FT	K IN
A	5	4	5	5		
C1	4	2	1	7		
C2	4	2	3	8		
C3	4	2	4	10		
E1	5	2	6	11	3	11
E2	5	2	7	3	4	3
F	4	4	1	3	0	4
G1	4	3	5	0		
G2	4	3	7	4		
H	4	5	5	8	4	0
N	4	6	4	10		
Q	4	2	3	4		
R	4	4	0	8		
V1	5	4	3	4	2	1
V2	5	4	4	4	3	1
V3	5	2	5	4	4	1

42"

MARK	SIZE	NO ①	LGTH FT	LGTH IN	K FT	K IN
A	5	4	6	2		
C1	4	2	2	9		
C2	4	2	4	9		
C3	4	2	5	6		
E1	5	2	7	6	4	6
E2	5	2	7	10	4	10
F	4	4	1	3	0	4
G1	4	3	6	4		
G2	4	3	8	7		

42" (CONTINUED)

MARK	SIZE	NO ①	LGTH FT	LGTH IN	K FT	K IN
H	4	5	6	3	4	7
N	4	6	5	6		
Q	4	2	3	11		
R	4	4	0	9		
V1	5	4	3	6	2	3
V2	5	4	4	6	3	3
V3	5	4	5	6	4	3

48"

MARK	SIZE	NO ①	LGTH FT	LGTH IN	K FT	K IN
A	5	4	8	11		
C1	4	2	1	10		
C2	4	2	3	10		
C3	4	2	5	10		
C4	4	2	6	2		
E1	5	2	8	1	5	1
E2	5	2	8	5	5	5
F	4	5	1	3	0	4
G1	4	1	4	0		
G2	4	3	7	5		
G3	4	3	9	9		
H	4	6	6	10	5	2
N	4	6	6	2		
Q	4	2	4	6		
R	4	5	0	9		
V1	5	4	3	9	2	6
V2	5	4	4	9	3	6
V3	5	4	5	9	4	6

54"

MARK	SIZE	NO ①	LGTH FT	LGTH IN	K FT	K IN
A	5	4	7	7		
C1	4	2	0	11		
C2	4	2	3	0		
C3	4	2	5	1		
C4	4	4	6	10		
E1	5	2	8	8	5	8
E2	5	2	9	0	6	0
F	4	6	1	3	0	4
G1	4	1	5	3		
G2	4	3	8	9		
G3	4	3	11	0		
H	4	6	7	5	5	9
N	4	6	6	10		
Q	4	2	5	1		
R	4	6	0	10		
V1	5	4	4	0	2	9

54" (CONTINUED)

MARK	SIZE	NO ①	LGTH FT	LGTH IN	K FT	K IN
V2	5	4	5	0	3	9
V3	5	4	6	0	4	9
V4	5	2	7	0	5	9

60"

MARK	SIZE	NO ①	LGTH FT	LGTH IN	K FT	K IN
A	5	4	8	4		
C1	4	2	2	1		
C2	4	2	4	2		
C3	4	2	6	3		
C4	4	4	7	7		
E1	5	2	9	3	6	3
E2	5	2	9	7	6	7
F	4	6	1	3	0	4
G1	4	2	6	6		
G2	4	3	10	0		
G3	4	3	12	4		
H	4	7	8	0	6	4
N	4	6	7	7		
Q	4	2	5	8		
R	4	6	0	10		
V1	5	4	4	3	3	0
V2	5	4	5	3	4	0
V3	5	4	6	2	4	11
V4	5	4	7	2	5	11

66"

MARK	SIZE	NO ①	LGTH FT	LGTH IN	K FT	K IN
A	5	4	9	4		
B1	5	8	2	10		
B2	5	8	3	10		
B3	5	8	4	9		
B4	5	8	5	9		
C1	4	4	1	5		
C2	4	4	3	5		
C3	4	4	5	6		
C4	4	4	7	7		
C5	4	8	8	4		
E1	5	2	11	9	6	10
E2	5	2	12	3	7	4
F	4	7	1	9	0	6
G1	4	3	8	0		
G2	4	3	11	4		
G3	4	3	13	10		
H	4	7	9	3	7	1
M	4	16	3	9		
N	4	14	8	4		

66" (CONTINUED)

MARK	SIZE	NO ①	LGTH FT	LGTH IN	K FT	K IN
P	5	16	5	0	3	3
Q	5	3	6	2		
R	5	7	2	7		

72"

MARK	SIZE	NO ①	LGTH FT	LGTH IN	K FT	K IN
A	5	4	10	1		
B1	5	8	3	0		
B2	5	8	4	0		
B3	5	8	4	11		
B4	5	8	5	11		
B5	5	4	6	10		
C1	4	4	2	7		
C2	4	4	4	8		
C3	4	4	6	9		
C4	4	4	8	10		
C5	4	8	9	1		
E1	5	2	12	5	7	5
E2	5	2	12	11	7	11
F	4	8	1	9	0	6
G1	4	3	9	2		
G2	4	3	12	6		
G3	4	3	14	10		
H	4	9	9	10	7	8
M	4	18	3	9		
N	4	14	9	1		
P	5	18	5	3	3	6
Q	5	3	6	10		
R	5	7	2	7		

78"

MARK	SIZE	NO ①	LGTH FT	LGTH IN	K FT	K IN
A	5	4	10	10		
B1	5	8	3	4		
B2	5	8	4	3		
B3	5	8	5	3		
B4	5	8	6	2		
B5	5	8	7	2		
C1	4	4	1	7		
C2	4	4	3	8		
C3	4	4	5	10		
C4	4	4	7	11		
C5	4	12	9	9		
E1	5	2	13	0	8	0
E2	5	2	13	6	8	6
F	4	8	1	9	0	6
G1	4	1	7	1		

78" (CONTINUED)

MARK	SIZE	NO ①	LGTH FT	LGTH IN	K FT	K IN
G2	4	3	10	6		
G3	4	3	14	0		
G4	4	3	16	4		
H	4	9	10	5	8	3
M	4	20	3	9		
N	4	14	9	9		
P	5	20	5	6	3	9
Q	5	3	7	5		
R	5	8	2	8		

84"

MARK	SIZE	NO ①	LGTH FT	LGTH IN	K FT	K IN
A	5	4	11	7		
B1	5	8	3	6		
B2	5	8	4	6		
B3	5	8	5	5		
B4	5	8	6	5		
B5	5	8	7	4		
B6	5	4	8	4		
C1	4	4	2	10		
C2	4	4	4	11		
C3	4	4	7	0		
C4	4	4	9	1		
C5	4	12	10	5		
E1	5	2	13	7	8	7
E2	5	2	14	2	9	2
F	4	9	1	9	0	6
G1	4	1	9	6		
G2	4	3	11	10		
G3	4	3	15	2		
G4	4	3	17	6		
H	4	9	11	0	8	10
M	4	22	3	9		
N	4	14	10	5		
P	5	22	5	9	4	0
Q	5	3	8	0		
R	5	9	2	8		

90"

MARK	SIZE	NO ①	LGTH FT	LGTH IN	K FT	K IN
A	5	4	12	3		
B1	5	8	3	10		
B2	5	8	4	9		
B3	5	8	5	9		
B4	5	8	6	8		
B5	5	8	7	7		
B6	5	4	8	6		
C1	4	4	1	11		
C2	4	4	4	0		
C3	4	4	6	1		
C4	4	4	8	3		
C5	4	4	10	4		
C6	4	12	11	1		
E1	5	2	14	2	9	2
E2	5	2	14	8	9	8
F	4	9	1	9	0	6
G1	4	2	9	6		
G2	4	3	13	0		
G3	4	3	16	5		
G4	4	3	18	9		
H	4	10	12	1	9	5
M	4	22	4	9		
N	4	16	11	1		
P	6	22	6	6	4	3
Q	5	4	8	7		
R	5	9	3	3		

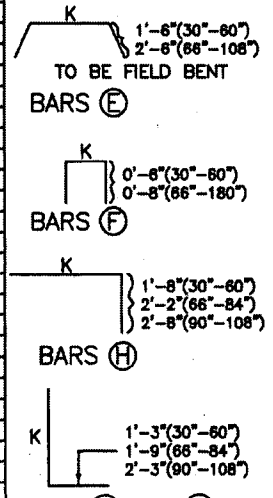
NOTES:

① NUMBER OF BARS IN ONE HEADWALL.

2. DIMENSIONS ARE OUT TO OUT OF BARS.

3. ALL BARS ARE STRAIGHT EXCEPT THOSE SHOWN BELOW.

BENT BAR SHAPES



SHEET 3 OF 4

NO.	DATE	REVISION DESCRIPTION	BY

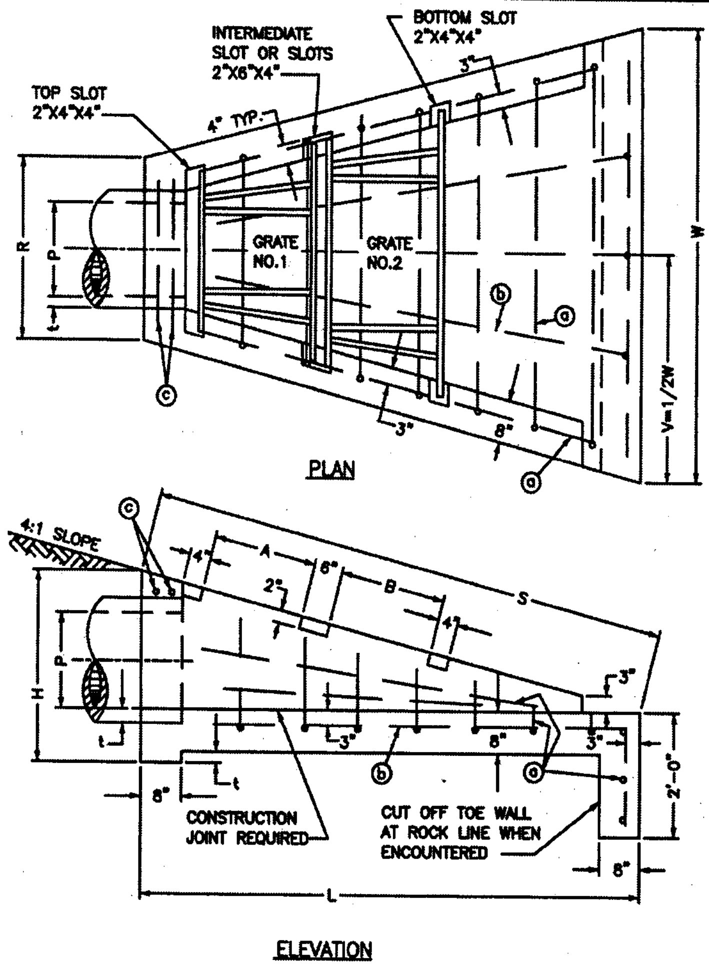
DIVISION OF ENGINEERING

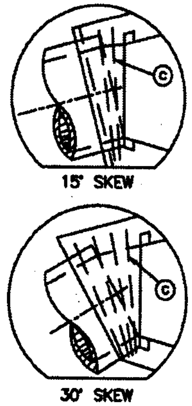
BILL OF REINFORCEMENT
30"-90" DIAMETER
CIRCULAR PIPE HEADWALLS
0° SKEW

STANDARD DRAWING NO. 154-3

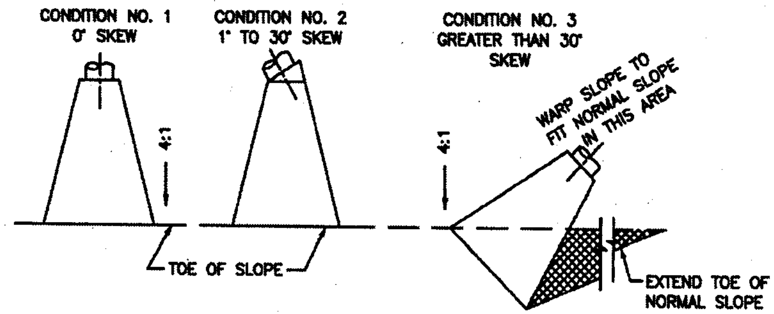
APPROVED: [signature] 5/1/08
DIRECTOR, DIVISION OF ENGINEERING
COMMISSIONER
DATE

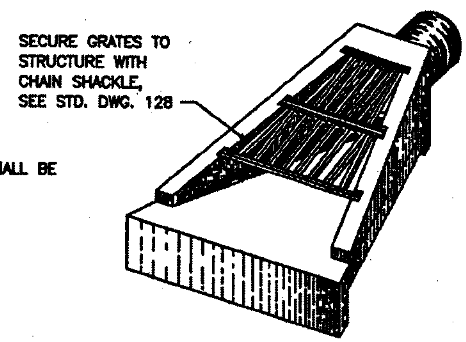
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT





PLAN VIEW OF STRUCTURE LOCATIONS

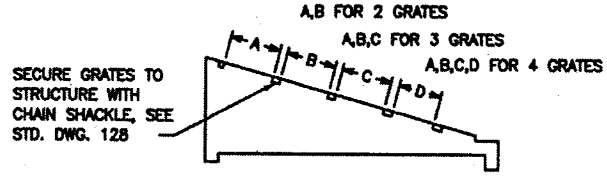




18"–24"
TRIMETRIC VIEW

NOTES:
1. THE MINIMUM REQUIREMENT FOR REINFORCING STEEL SHALL BE GRADE 40. FIELD BENDING WILL BE PERMITTED.
2. ONE ADDITIONAL (c) 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. 163 FOR
GRATE DETAILS.

NO.	DATE	REVISION DESCRIPTION	BY

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'-9"	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				CLASS "A" CONC.
NUMBER–LENGTH AND WEIGHT				
(a)	(b)	(2) (c)	LBS.	CU.YD.
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

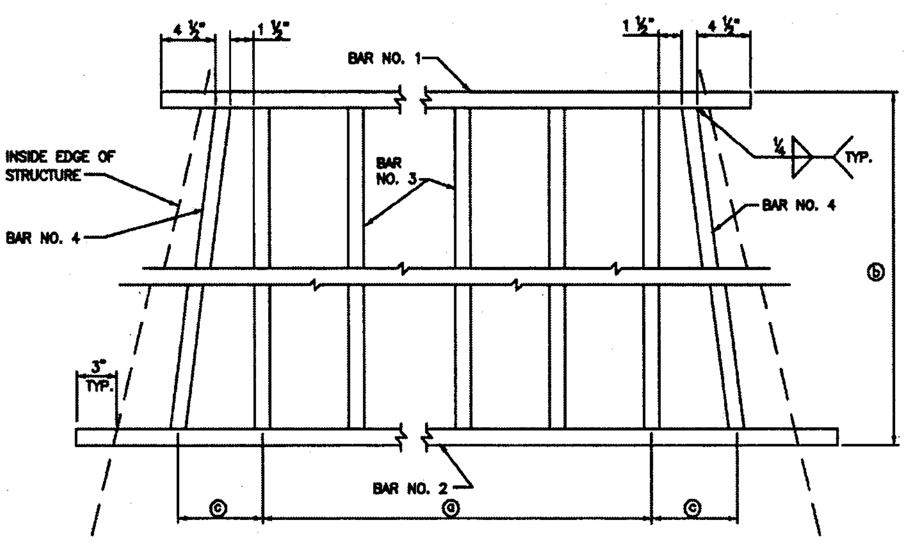
DIVISION OF ENGINEERING

SLOPED AND FLARED
BOX INLET–OUTLET
18"–24"–30"–36"
ALL SKEWS

STANDARD DRAWING NO. 162
APPROVED
URBAN COUNTY ENGINEER 5/1/08
COMMISSIONER DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

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 ½"	3'-5 ¾"	4	1'-10"	1'-10 ¼"	116	272
	2	2'-0"	3'-7 ⅝"	4'-6 ⅞"	6	1'-10"	1'-10 ¼"	156	
24"	1	3'-0"	3'-1 ½"	4'-6 ⅝"	5	2'-10"	2'-10 ⅜"	187	454
	2	3'-0"	4'-8 ½"	6'-1 ⅝"	8	2'-10"	2'-10 ⅜"	267	
30"	1	3'-0"	3'-8 ½"	5'-1 ½"	6	2'-10"	2'-10 ⅜"	215	796
	2	3'-0"	5'-3 ½"	6'-8 ⅝"	9	2'-10"	2'-10 ⅜"	294	
	3	2'-0"	6'-10 ½"	7'-9 ¾"	13	1'-10"	1'-10 ¼"	287	
36"	1	3'-0"	4'-3 ½"	5'-8 ½"	7	2'-10"	2'-10 ⅜"	242	1218
	2	3'-0"	5'-10 ½"	7'-3 ⅝"	10	2'-10"	2'-10 ⅜"	321	
	3	2'-0"	7'-5 ½"	8'-4 ¾"	14	1'-10"	1'-10 ¼"	308	
	4	2'-0"	8'-6 ¾"	9'-5 ⅞"	16	1'-10"	1'-10 ¼"	347	



TYPICAL GRATE

NOTES:

ⓐ EQUALLY SPACE BARS NO. 3.

ⓑ SIZE OF GRATE EITHER 2'-0" OR 3'-0".

ⓒ 5 ½" 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.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

GRATES FOR SLOPED AND FLARED BOX INLET–OUTLET

STANDARD DRAWING NO. 163

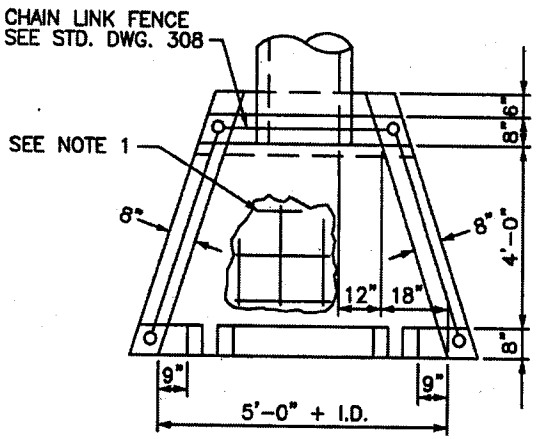
APPROVED: [signature] 5/1/02

URBAN COUNTY ENGINEER

COMMISSIONER [signature] DATE 5/1/02

DATE

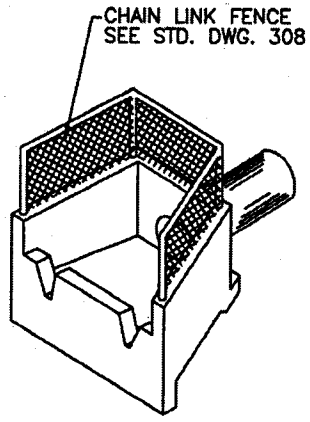
LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



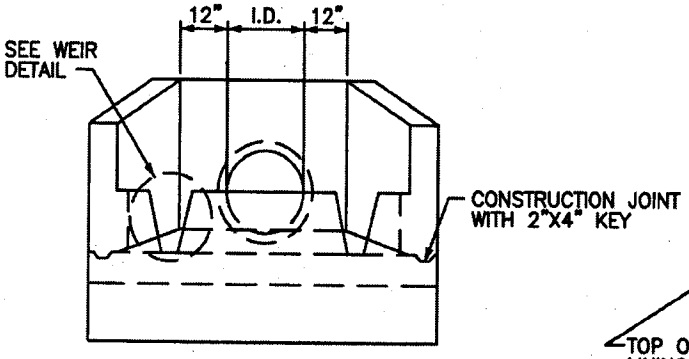
PLAN ELEVATION

NOTES:

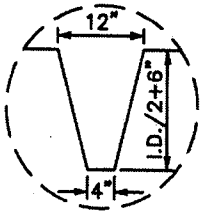
1. NO. 5 STEEL BARS TO BE USED THROUGHOUT ON 12" CENTERS.
2. HEIGHT OF WALL SHALL BE DETERMINED BY THE AMOUNT OF FILL BEHIND PIPE. TOP OF WALL SHALL BE 18" ABOVE TOP O.D. OF PIPE.
3. TOP OF END SILL SHALL BE LEVEL WITH CENTERLINE OF PIPE.
4. CHANNEL LINING TO BE WIDTH OF END SILL, 18" MINIMUM THICKNESS, AND COMPOSED OF CLASS III CHANNEL LINING.
5. ALL VERTICAL OR SLOPED EXPOSED SURFACES SHALL HAVE A RUBBED FINISH.
6. ALL EXPOSED FLAT WORK TO HAVE A HAND FLOATED AND BROOMED FINISH.
7. ALL EXPOSED EDGES SHALL HAVE A ¾" CHAMFER.
8. ALL STEEL SHALL HAVE 2" MINIMUM CLEARANCE TO THE CONCRETE FACE ON THE BACKFILL SIDE OF THE WALLS.
9. FENCES REQUIRED ON HEADWALLS.



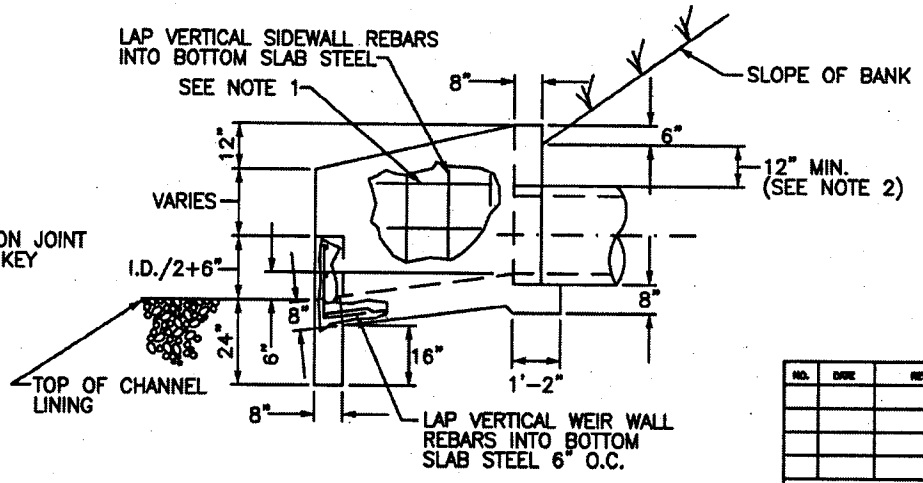
ISOMETRIC VIEW



FRONT ELEVATION



WEIR DETAIL



SIDE ELEVATION

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

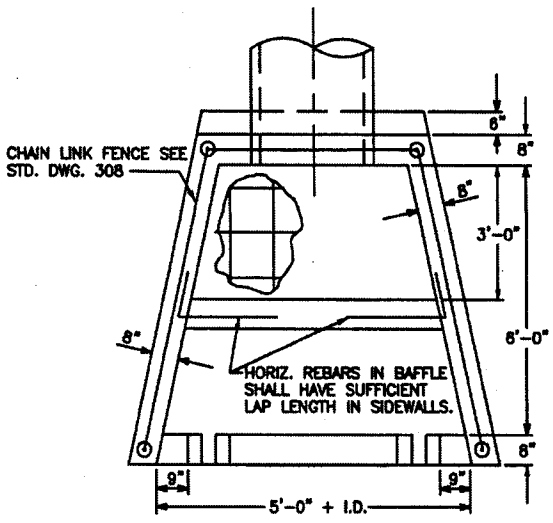
IMPACT STILLING BASIN
15"–24" PIPES

STANDARD DRAWING NO. 164

APPROVED 5/1/02
DIRECTOR, DIVISION OF ENGINEERING
DATE

APPROVED
COMMISSIONER
DATE

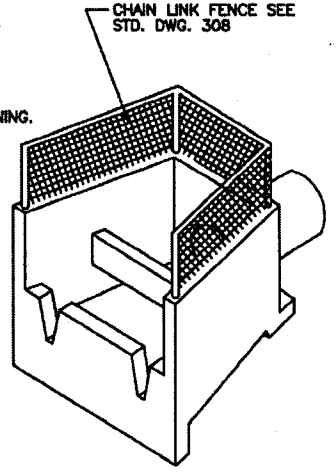
LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



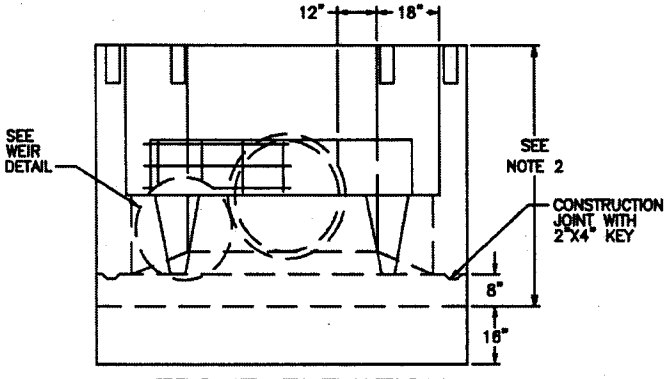
PLAN ELEVATION

NOTES:

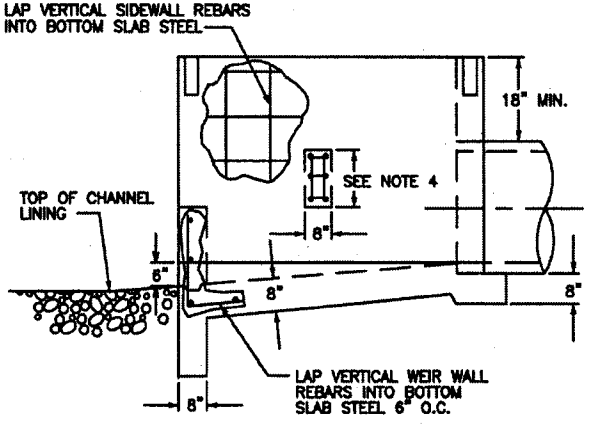
1. NO. 5 STEEL BARS SHALL BE USED THROUGHOUT ON 12" CENTERS EXCEPT ON BAFFLE WHERE HORIZONTAL AND VERTICAL STEEL WILL BE ON 6" CENTERS.
2. HEIGHT OF WALL SHALL BE DETERMINED BY THE AMOUNT OF FILL BEHIND PIPE. TOP OF WALL SHALL BE 18" ABOVE TOP O.D. OF PIPE.
3. TOP OF END SILL SHALL BE LEVEL WITH CENTERLINE OF PIPE.
4. TOP OF BAFFLE SHALL BE LEVEL WITH CROWN OF PIPE, AND THE BOTTOM SHALL BE LEVEL WITH CENTERLINE OF PIPE.
5. CHANNEL LINING TO BE 2 TIMES THE WIDTH OF THE END SILL AND EXTEND A MINIMUM OF 4' BEYOND THE STILLING BASIN WITH AN 18" MINIMUM THICKNESS AND COMPOSED OF CLASS III CHANNEL LINING.
6. CHANNEL LINE SPILL SLOPES BEYOND SIDES OF HEADWALL WITH CLASS III CHANNEL LINING. CHANNEL LINING SHALL EXTEND 4' IN WIDTH ON SLOPES AT WINGWALL AND TO DOWNSTREAM END OF CHANNEL.
7. ALL VERTICAL OR SLOPED EXPOSED SURFACES SHALL HAVE A RUBBED FINISH.
8. ALL EXPOSED FLATWORK SHALL HAVE A HANDFLOATED AND BROOMED FINISH.
9. ALL EXPOSED EDGES SHALL HAVE A ¾" CHAMFER.
10. ALL STEEL SHALL HAVE A 2" MINIMUM CLEARANCE TO THE CONCRETE FACE ON THE BACKFILL SIDE OF THE STRUCTURE.
11. CHAIN LINK FENCE IS REQUIRED ON ALL HEADWALLS WHEN THE VERTICAL FACE IS GREATER THAN 30".
12. ALL LARGER PIPES SHALL HAVE A SPECIAL DESIGN STILLING BASIN.
13. ALL LONGITUDINAL REINFORCING BARS IN BAFFLE SHALL HAVE SUFFICIENT ANCHORAGE LENGTH IN SIDEWALLS.



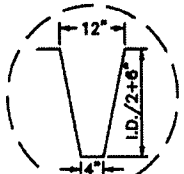
ISOMETRIC VIEW



FRONT ELEVATION



SIDE ELEVATION



WEIR DETAIL

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

IMPACT STILLING BASIN
27"–48" PIPES

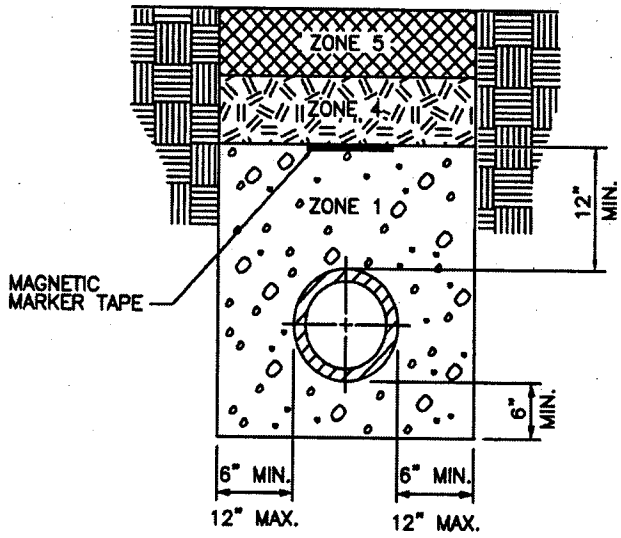
STANDARD DRAWING NO. 165

APPROVED: DATE 5/1/08

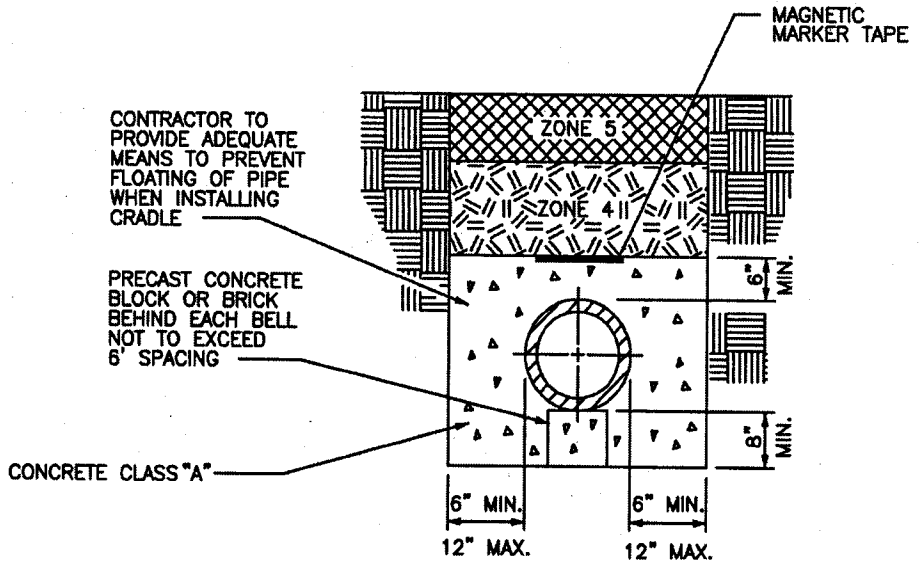
URBAN COUNTY ENGINEER

COMMISSIONER DATE 5/1/08

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



PIPE LAID IN ROCK OR SOIL TRENCH



STANDARD CONCRETE ENCASEMENT (NOTE: AS REQUIRED BY DESIGN)

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.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

TRENCHING, LAYING, BACKFILLING AND BEDDING OUTSIDE R/W LIMITS

STANDARD DRAWING NO. 200

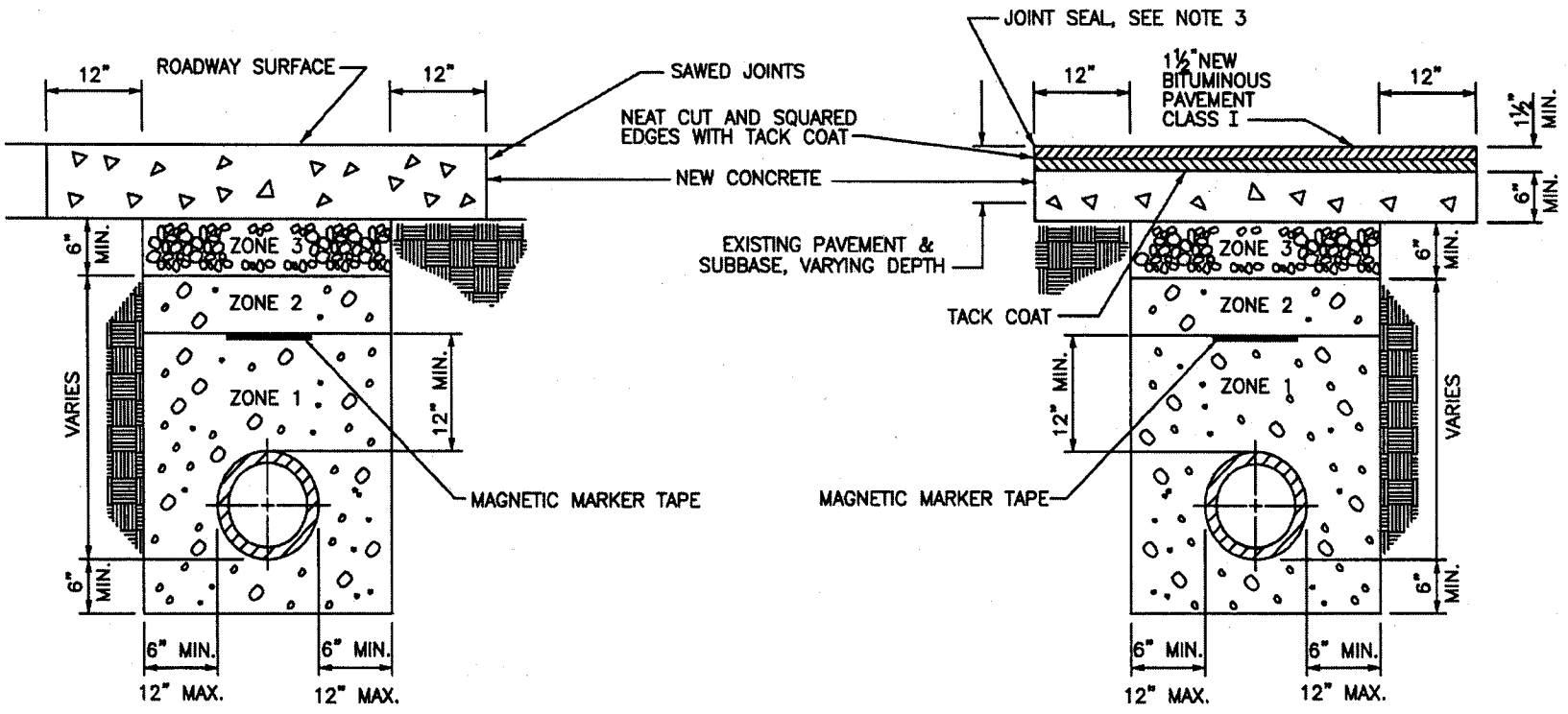
APPROVED 5/1/08 DATE

URBAN COUNTY ENGINEER

DIRECTOR

COMMISSIONER DATE

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



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. REPLACE CONCRETE PAVEMENT WITH NEW CONCRETE PAVEMENT, 6"MINIMUM OR EXISTING THICKNESS, WHICHEVER IS GREATER.
2. JOINT SEAL PERIMETER OF CUT PAVEMENT WITH FLEXMASTER POURABLE CRACK SEALANT 1109 OR APPROVED EQUAL.
3. MAGNETIC MARKER TAPE FOR SANITARY SEWER ONLY.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

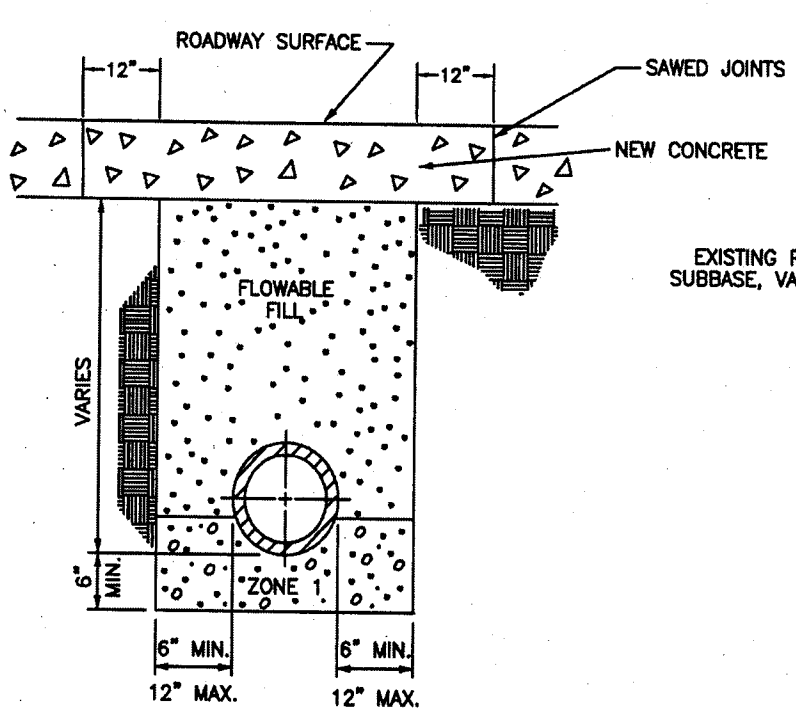
TRENCHING, LAYING, BACKFILLING AND BEDDING UNDER STREET PAVEMENT

STANDARD DRAWING NO. 201-1

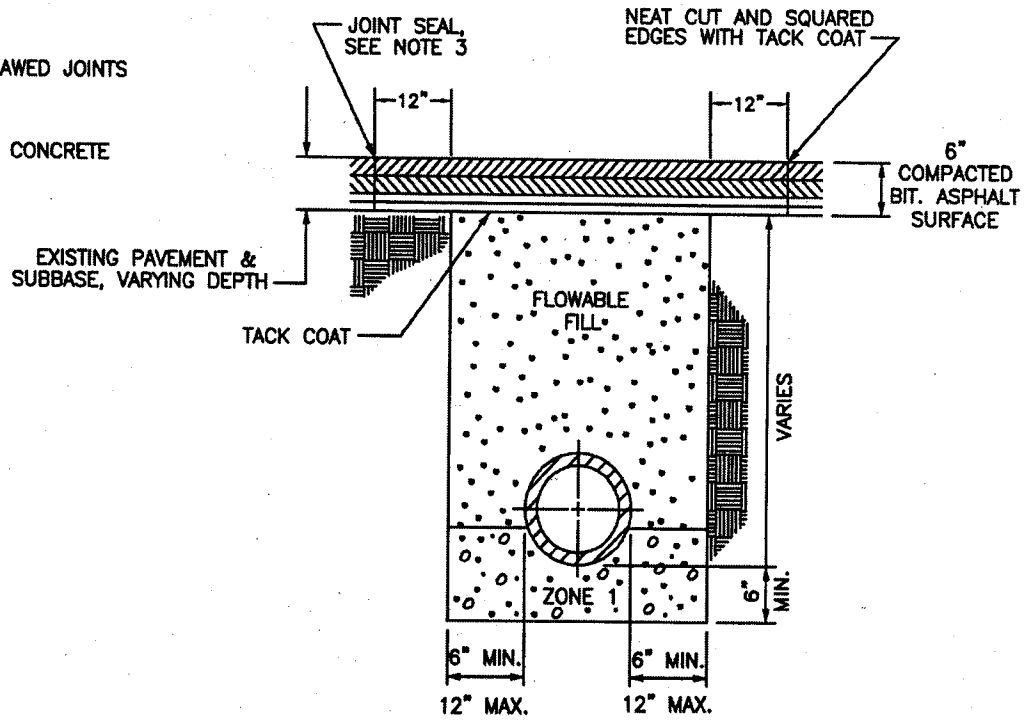
APPROVAL — URBAN COUNTY ENGINEER — DATE 5/1/08

COMMISSIONER — DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



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. PER KYTC SPECIFICATION 601.03.03 FROM STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION EDITION 2004, OR MOST RECENT.
2. REPLACE CONCRETE PAVEMENT WITH NEW CONCRETE PAVEMENT, 6" MINIMUM OR EXISTING THICKNESS, WHICHEVER IS GREATER.
3. JOINT SEAL PERIMETER OF CUT PAVEMENT WITH FLEXMASTER POURABLE CRACK SEALANT 1109 OR APPROVED EQUAL.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

TRENCHING, LAYING, BACKFILLING, AND BEDDING UNDER STREET PAVEMENT USING FLOWABLE FILL

STANDARD DRAWING NO. 201-2

APPROVED: 5/1/08 DATE

DIRECTOR, DIVISION OF ENGINEERING

COMMISSIONER DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

TABLE OF:

MAXIMUM ALLOWABLE FILL HEIGHTS

(LIVE LOAD NOT INCLUDED)

DIAMETER (INCHES)	DUCTILE IRON PIPE	POLYVINYL CHLORIDE (PVC) PIPE	
	CLASS 50 *	SDR-35	SDR-26 HEAVY WALL
	MAXIMUM DEPTH OF COVER (FEET)	MAXIMUM DEPTH OF COVER (FEET)	MAXIMUM DEPTH OF COVER (FEET)
4	–	–	–
6	20	15	–
8	20	15	–
10	20	15	–
12	20	15	–
14	20	–	–
15	–	15	–
16	20	–	–
18	20	–	20
20	18	–	–
21	–	–	20
24	17	–	20
27	–	–	20
30	14	–	–
36	14	–	–
42	13	–	–
48	13	–	–

* LIGHTEST CLASS OF DUCTILE IRON PIPE

NOTES:

1. DEPTH IS BASED ON LAYING CONDITION UTILIZING NO. 9 STONE ENCASING PIPE FROM 6" MINIMUM BELOW PIPE TO A PLANE, LEVEL WITH THE TOP OF THE PIPE AND 6" TO 12" NO. 9 STONE TO EDGE OF TRENCH.
2. WEIGHT OF SOIL AND ROCK COVER MIX IS ASSUMED TO BE APPROXIMATELY 120 LB./CU. FT.
3. DUCTILE IRON PIPE HAS FLEXIBLE LINING.
4. DESIGN ENGINEERS SHOULD USE THIS STANDARD DRAWING FOR GENERAL GUIDELINES AND SHOULD CHECK THEIR DESIGN FOR SAFE, NON-DESTRUCTIVE FILL HEIGHTS FOR ACTUAL BRAND OF PIPE PROPOSED.
5. SPECIAL TRENCHING DETAILS AND PROCEDURES SHOULD BE USED WHERE FILL DEPTHS ARE HIGHER THAN THOSE SHOWN IN TABLE.
6. INSTALLATIONS REQUIRING A DEPTH GREATER THAN 20', MUST BE APPROVED BY THE ENGINEER.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

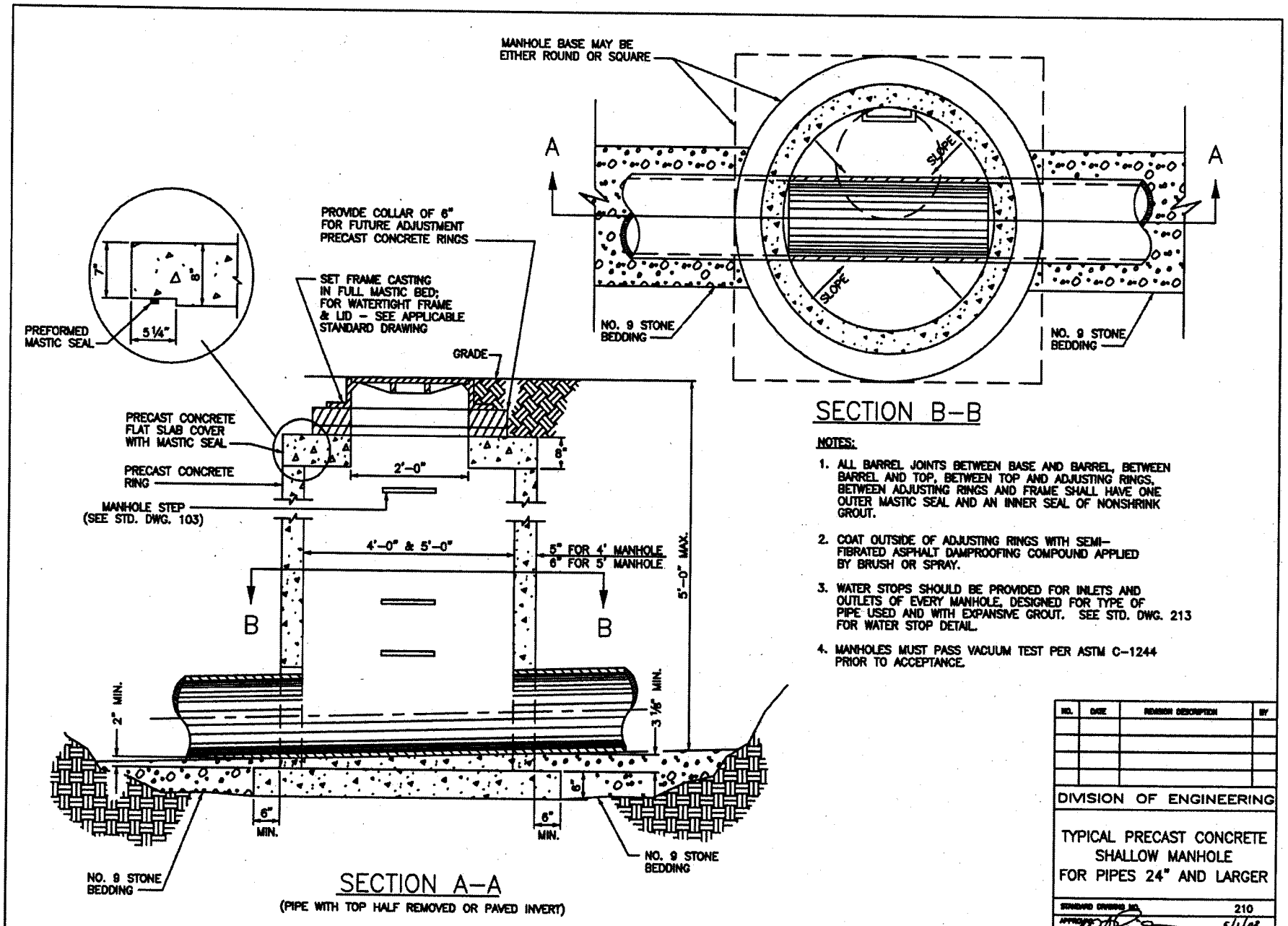
SANITARY SEWER PIPE: TYPES & MAXIMUM ALLOWABLE FILL HEIGHTS

STANDARD DRAWING NO. 204

APPROVAL: URBAN COUNTY ENGINEER — DATE 5/1/08

COMMISSIONER — DATE

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



SECTION A–A

(PIPE WITH TOP HALF REMOVED OR PAVED INVERT)

SECTION B–B

NOTES:

1. ALL BARREL JOINTS BETWEEN BASE AND BARREL, BETWEEN BARREL AND TOP, BETWEEN TOP AND ADJUSTING RINGS, BETWEEN ADJUSTING RINGS AND FRAME SHALL HAVE ONE OUTER MASTIC SEAL AND AN INNER SEAL OF NONSHRINK GROUT.
2. COAT OUTSIDE OF ADJUSTING RINGS WITH SEMI–FIBRATED ASPHALT DAMPROOFING COMPOUND APPLIED BY BRUSH OR SPRAY.
3. WATER STOPS SHOULD BE PROVIDED FOR INLETS AND OUTLETS OF EVERY MANHOLE, DESIGNED FOR TYPE OF PIPE USED AND WITH EXPANSIVE GROUT. SEE STD. DWG. 213 FOR WATER STOP DETAIL.
4. MANHOLES MUST PASS VACUUM TEST PER ASTM C–1244 PRIOR TO ACCEPTANCE.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

TYPICAL PRECAST CONCRETE SHALLOW MANHOLE FOR PIPES 24" AND LARGER

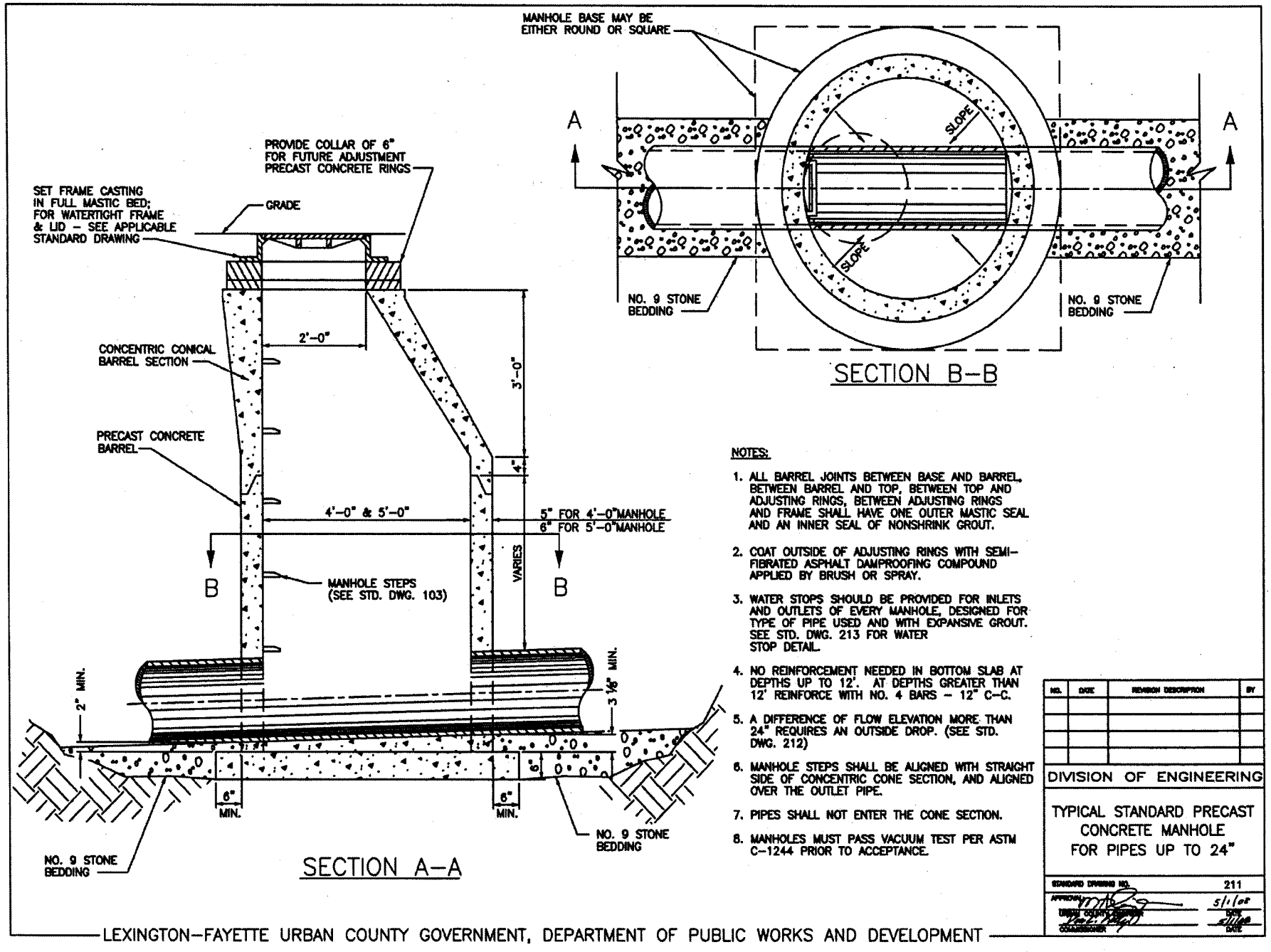
STANDARD DRAWING NO. 210

APPROVED 5/1/08

URBAN COUNTY ENGINEER — DATE

COMMISSIONER — DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



NOTES:

1. ALL BARREL JOINTS BETWEEN BASE AND BARREL, BETWEEN BARREL AND TOP, BETWEEN TOP AND ADJUSTING RINGS, BETWEEN ADJUSTING RINGS AND FRAME SHALL HAVE ONE OUTER MASTIC SEAL AND AN INNER SEAL OF NONSHRINK GROUT.
2. COAT OUTSIDE OF ADJUSTING RINGS WITH SEMI–FIBRATED ASPHALT DAMPROOFING COMPOUND APPLIED BY BRUSH OR SPRAY.
3. WATER STOPS SHOULD BE PROVIDED FOR INLETS AND OUTLETS OF EVERY MANHOLE, DESIGNED FOR TYPE OF PIPE USED AND WITH EXPANSIVE GROUT. SEE STD. DWG. 213 FOR WATER STOP DETAIL.
4. NO REINFORCEMENT NEEDED IN BOTTOM SLAB AT DEPTHS UP TO 12'. AT DEPTHS GREATER THAN 12' REINFORCE WITH NO. 4 BARS – 12" C–C.
5. A DIFFERENCE OF FLOW ELEVATION MORE THAN 24" REQUIRES AN OUTSIDE DROP. (SEE STD. DWG. 212)
6. MANHOLE STEPS SHALL BE ALIGNED WITH STRAIGHT SIDE OF CONCENTRIC CONE SECTION, AND ALIGNED OVER THE OUTLET PIPE.
7. PIPES SHALL NOT ENTER THE CONE SECTION.
8. MANHOLES MUST PASS VACUUM TEST PER ASTM C–1244 PRIOR TO ACCEPTANCE.

NO.	DATE	REVISION DESCRIPTION	BY

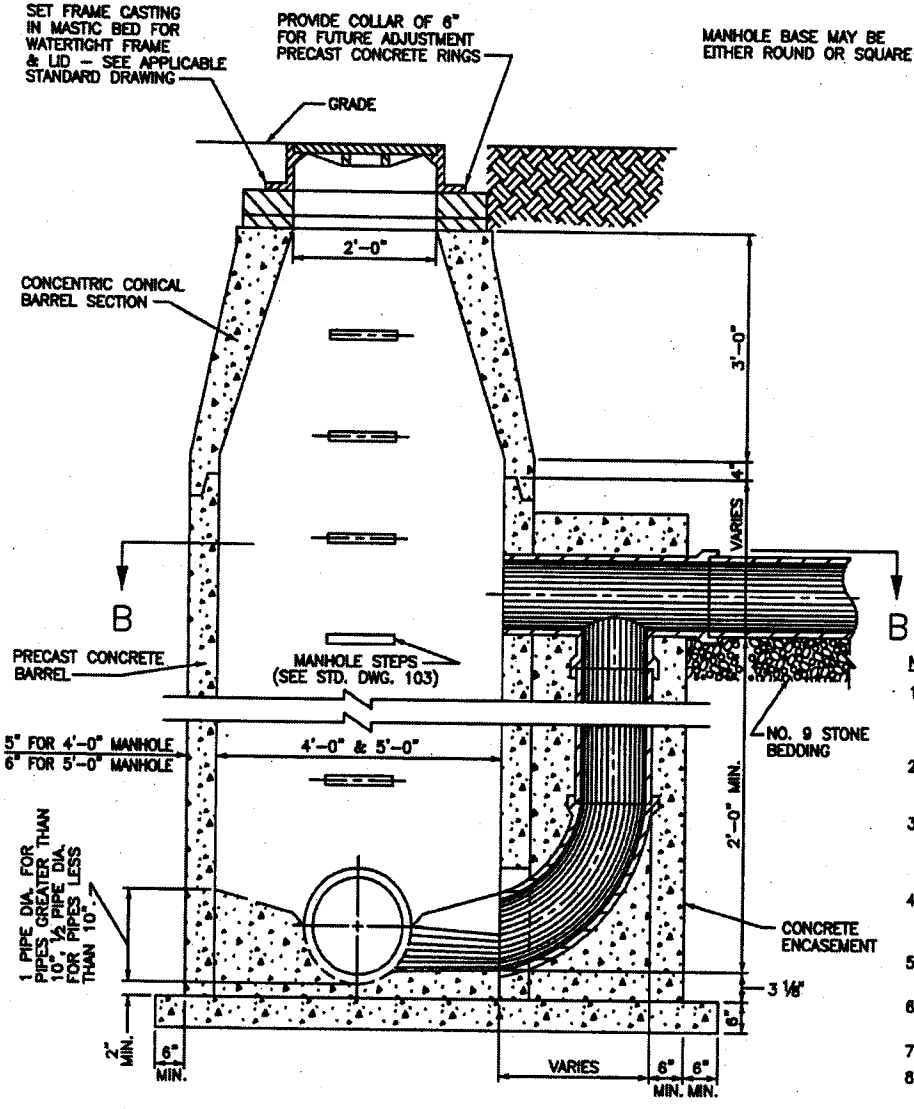
DIVISION OF ENGINEERING

TYPICAL STANDARD PRECAST CONCRETE MANHOLE FOR PIPES UP TO 24"

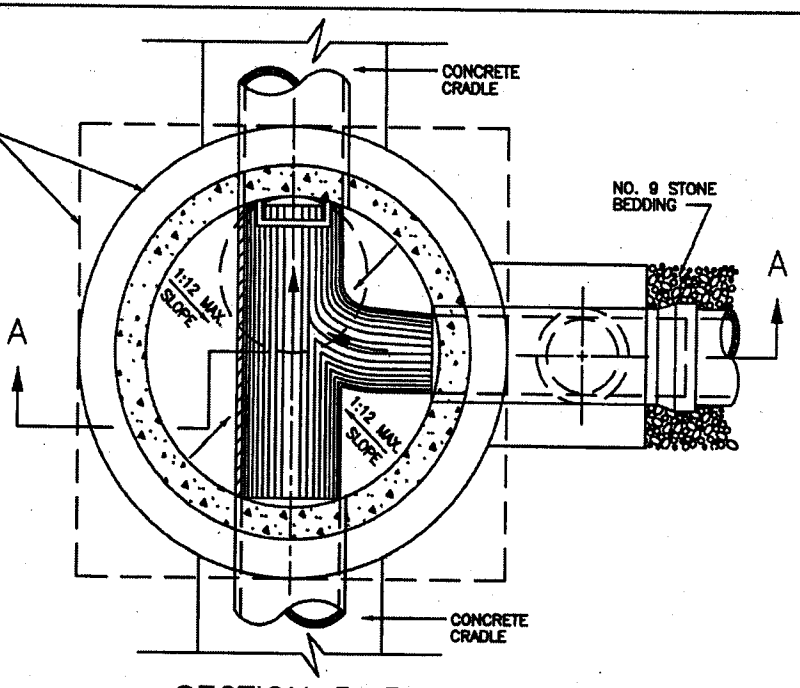
STANDARD DRAWING NO. 211

APPROVED: URBAN COUNTY ENGINEER — DATE 5/1/08
COMMISSIONER — DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



SECTION A–A



SECTION B–B

NOTES:

1. ALL BARREL JOINTS BETWEEN BASE AND BARREL, BETWEEN BARREL AND TOP, BETWEEN TOP AND ADJUSTING RINGS, BETWEEN ADJUSTING RINGS AND FRAME SHALL HAVE ONE OUTER MASTIC SEAL AND AN INNER SEAL OF NONSHRINK GROUT.
2. COAT OUTSIDE OF ADJUSTING RINGS WITH SEMI–FIBRATED ASPHALT DAMPROOFING COMPOUND APPLIED BY BRUSH OR SPRAY.
3. WATER STOPS SHOULD BE PROVIDED FOR INLETS AND OUTLETS OF EVERY MANHOLE, DESIGNED FOR TYPE OF PIPE USED AND WITH EXPANSIVE GROUT. SEE STD. DWG. 213 APPLICABLE FOR WATER STOP DETAIL.
4. NO REINFORCEMENT NEEDED IN BOTTOM SLAB AT DEPTHS UP TO 12'. AT DEPTHS GREATER THAN 12' REINFORCE WITH NO. 4 BARS – 12" C–C.
5. PROVIDE A MINIMUM FALL OF 0.1 FOOT FROM DROP TO MANHOLE OUTLET.
6. MANHOLES SHALL PASS VACUUM TEST PER ASTM C–1244 PRIOR TO ACCEPTANCE.
7. PIPE SHALL NOT ENTER CONE SECTION.
8. MANHOLE STEPS SHALL BE ALIGNED WITH STRAIGHT SIDE OF CONCENTRIC CONE SECTION, AND ALIGNED OVER OUT–LET PIPE.
9. DO NOT USE IN CASES WHERE THE DROP IS 2'–0" OR LESS.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

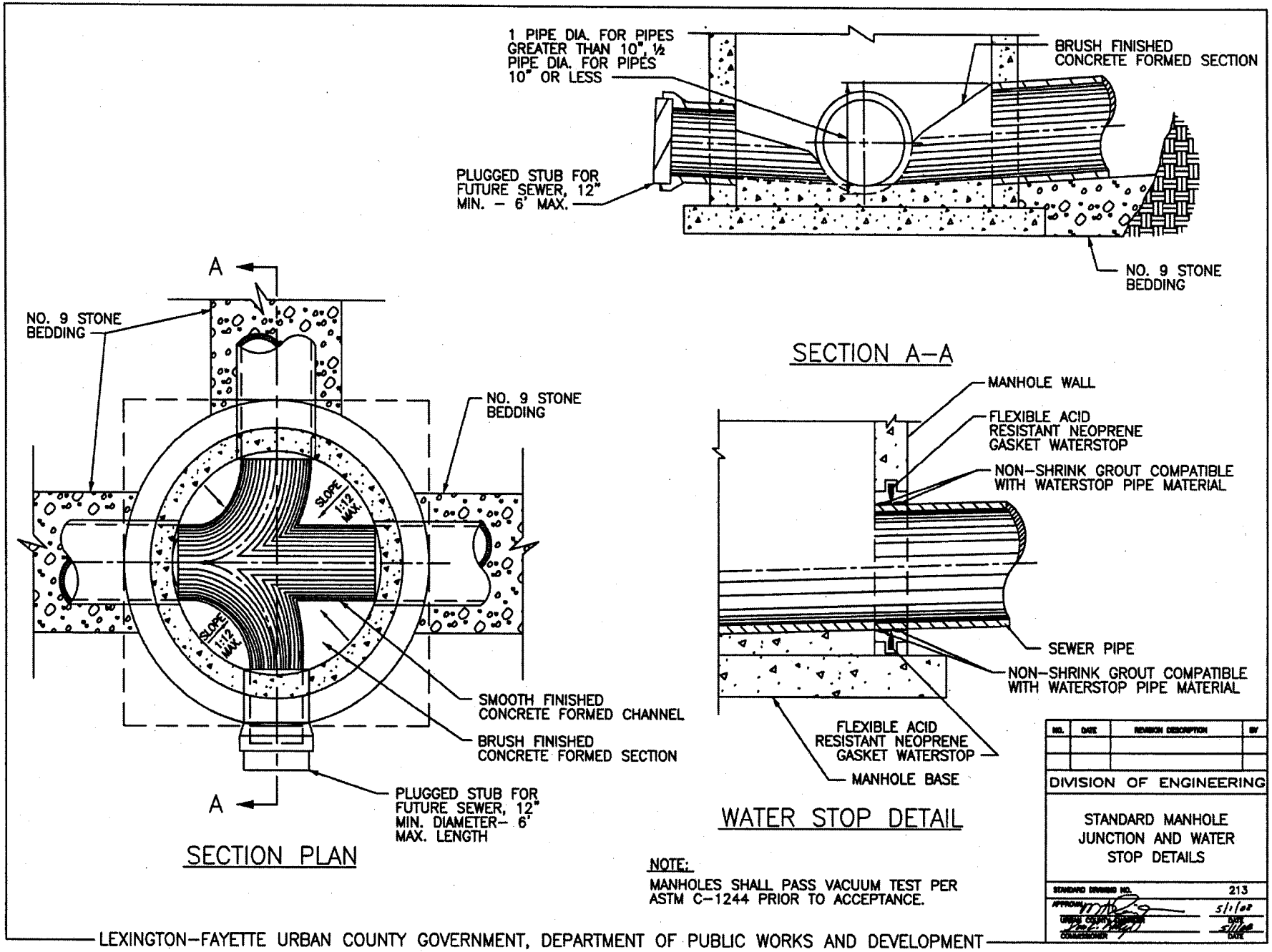
TYPICAL PRECAST CONCRETE DROP MANHOLE FOR PIPES UP TO 36"

STANDARD DRAWING NO. 212

APPROVED 5/1/08
URBAN COUNTY ENGINEER DATE

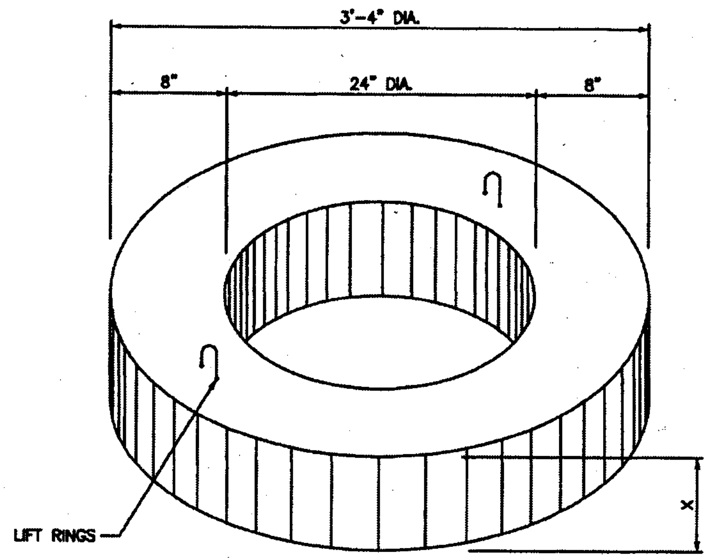
APPROVED
URBAN COUNTY TRAFFIC ENGINEER DATE

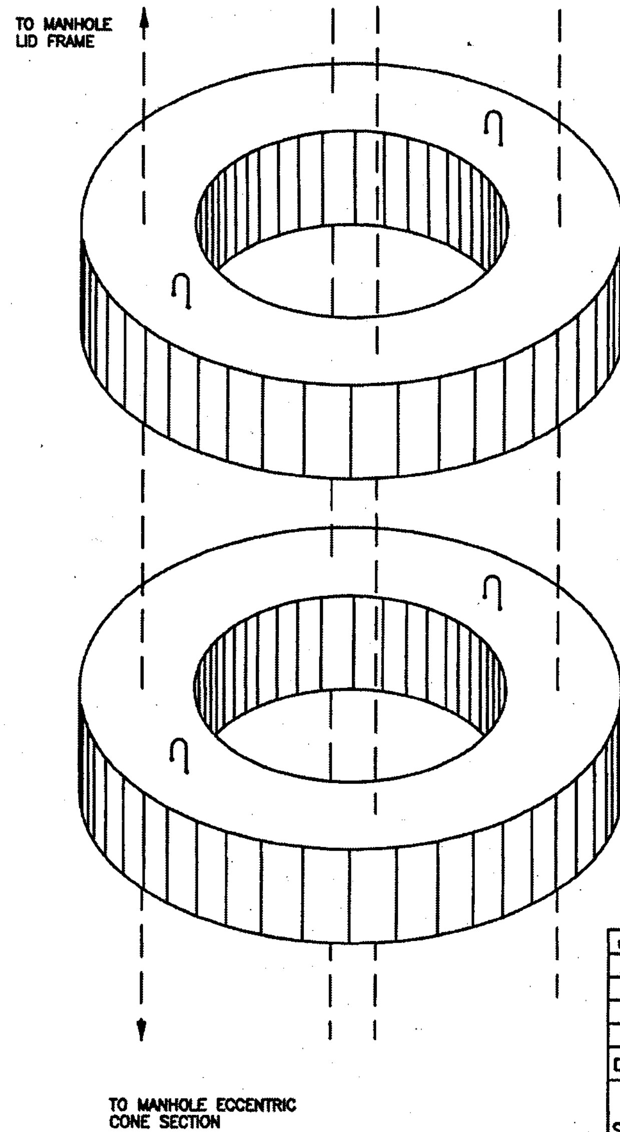
LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT


1 PIPE DIA. FOR PIPES GREATER THAN 10" ½ PIPE DIA. FOR PIPES 10" OR LESS
BRUSH FINISHED CONCRETE FORMED SECTION
PLUGGED STUB FOR FUTURE SEWER, 12" MIN. – 6' MAX.
NO. 9 STONE BEDDING
SECTION A–A
A
NO. 9 STONE BEDDING
NO. 9 STONE BEDDING
SLOPE 1:12 MAX.
SLOPE 1:12 MAX.
SMOOTH FINISHED CONCRETE FORMED CHANNEL
BRUSH FINISHED CONCRETE FORMED SECTION
PLUGGED STUB FOR FUTURE SEWER, 12" MIN. DIAMETER– 6' MAX. LENGTH
A
SECTION PLAN
MANHOLE WALL
FLEXIBLE ACID RESISTANT NEOPRENE GASKET WATERSTOP
NON–SHRINK GROUT COMPATIBLE WITH WATERSTOP PIPE MATERIAL
SEWER PIPE
NON–SHRINK GROUT COMPATIBLE WITH WATERSTOP PIPE MATERIAL
FLEXIBLE ACID RESISTANT NEOPRENE GASKET WATERSTOP
MANHOLE BASE
WATER STOP DETAIL
NOTE:
MANHOLES SHALL PASS VACUUM TEST PER ASTM C–1244 PRIOR TO ACCEPTANCE.
NO.
DATE
REVISION DESCRIPTION
BY
DIVISION OF ENGINEERING
STANDARD MANHOLE JUNCTION AND WATER STOP DETAILS
STANDARD DRAWING NO.
213
APPROVED
URBAN COUNTY ENGINEER
COMMISSIONER
5/1/08
DATE
DATE
LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

NOTES:

1. LIFT RINGS TO BE CUT BEFORE ADDING THE NEXT RING OR TOP.
2. COAT OUTSIDE AND IN BETWEEN ADJUSTING RINGS WITH SEMI-FIBRATED ASPHALT DAMPROOFING COMPOUND APPLIED BY BRUSH OR SPRAY.
3. GRADE RINGS WITH NON-PARALLEL SURFACES MAY BE USED TO ADJUST CASTING TO SLOPED SURFACE.
4. CONCRETE: CLASS "A" 3500 PSI AT 28 DAYS, AND IN ACCORDANCE WITH ASTM C-478, OR LATEST EDITION.
5. NO MORE THAN 2 GRADE RINGS MAY BE USED AT ONE LOCATION AND THE MAXIMUM HEIGHT OF ALL RINGS USED SHALL NOT EXCEED 12 INCHES.
6. APPLY MASTIC BETWEEN ALL JOINTS.





GRADE RING WIDTH CHART

X	WEIGHT LBS.
2"	140
3"	210
4"	279
6"	419
8"	560
12"	730

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

SEWER MANHOLE ADJUSTMENT GRADE RINGS

STANDARD DRAWING NO. 214

APPROVAL: URBAN COUNTY ENGINEER — DATE 5/1/08

COMMISSIONER — DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

GENERAL NOTES

1. SHALLOW MANHOLE TYPE CONSTRUCTION SHOWN ON STD. DWG. 210 MAY BE USED FOR ALL MANHOLES UP TO 5' IN DEPTH.
2. ALL DIMENSIONS ARE BASED ON SIZE OF LARGEST PIPE IN MANHOLE.
3. MANHOLES FOR PIPE LARGER THAN 36" SHALL BE SPECIALLY DESIGNED.
4. BOTTOM SLAB OF MANHOLES SHALL BE SPECIALLY DESIGNED WITH REGARD TO AREA, THICKNESS, AND REINFORCING IN SITUATIONS WHERE HIGH WATER TABLE OR UNSTABLE SOIL CONDITIONS EXIST.
5. MANHOLE STEPS SHALL BE INSTALLED IN A VERTICAL LINE AND SHALL COMPLY WITH OSHA STANDARDS IN ALL RESPECTS.
6. ALL FLOORS OF MANHOLES SHALL SLOPE AT LEAST 1" PER FT. FROM WALL TO CHANNELS AND SHALL HAVE SMOOTH FLOAT AND BRUSH FINISH.
7. CHANNEL SURFACE OF MANHOLES FROM INLET TO OUTLET SHALL HAVE SMOOTH FLOAT FINISH.
8. ELEVATIONS OF PIPES IN MANHOLES SHALL BE SUCH THAT THE TOP OF ALL INFLUENT PIPES WILL BE AT AN EL-EVATION EQUAL TO OR GREATER THAN THE TOP OF THE EFFLUENT PIPE.
9. A MINIMUM FALL OF 0.10 FOOT SHALL BE PROVIDED.
10. BASE OF MANHOLES GREATER THAN 12' DEEP TO BE REINFORCED WITH NO. 4 BARS AT 12" BOTH WAYS.
11. ASPHALT DAMPROOFING COMPOUND IS REQUIRED ON PRECAST MANHOLES IN WET AREAS OR OTHERWISE AS DIRECTED BY THE ENGINEER.
12. LEAKS IN MANHOLES OBSERVED DURING CONSTRUCTION OR INSPECTION SHALL BE CORRECTED IMMEDIATELY.
13. MANHOLES SHALL PASS VACUUM TEST PER ASTM C-1244 PRIOR TO ACCEPTANCE.
14. ALL INLETS, INCLUDING LATERALS, MUST HAVE FLOW CHANNELS.
15. NEW CONNECTIONS TO EXISTING SANITARY SEWER MANHOLES MUST REPLACE EXISTING BRICK MANHOLES OR DAMAGED MANHOLES AT NO EXPENSE TO THE LFUCG.
16. FIELD POURED BASES (DOGHOUSE MANHOLES) SHALL ONLY BE ALLOWED WITH PRIOR APPROVAL OF THE LFUCG.

SPECIFICATIONS

1. CASTINGS SHALL BE ASTM A-48, CLASS 35.
2. CONCRETE FOR MANHOLES, CRADLE ENCASEMENT, ETC. SHOWN IN THESE DETAILS SHALL BE CLASS "A".
3. CONCRETE MANHOLE BARREL CONSTRUCTION SHALL CONFORM TO ASTM C-478 OR ITS LATEST REVISION.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

MANHOLE SIZE STANDARDS AND GENERAL NOTES FOR DEEP MANHOLES

STANDARD DRAWING NO. 216

APPROVED: [signature] DATE 5/1/08

URBAN COUNTY ENGINEER

[signature] DATE

COMMISSIONER

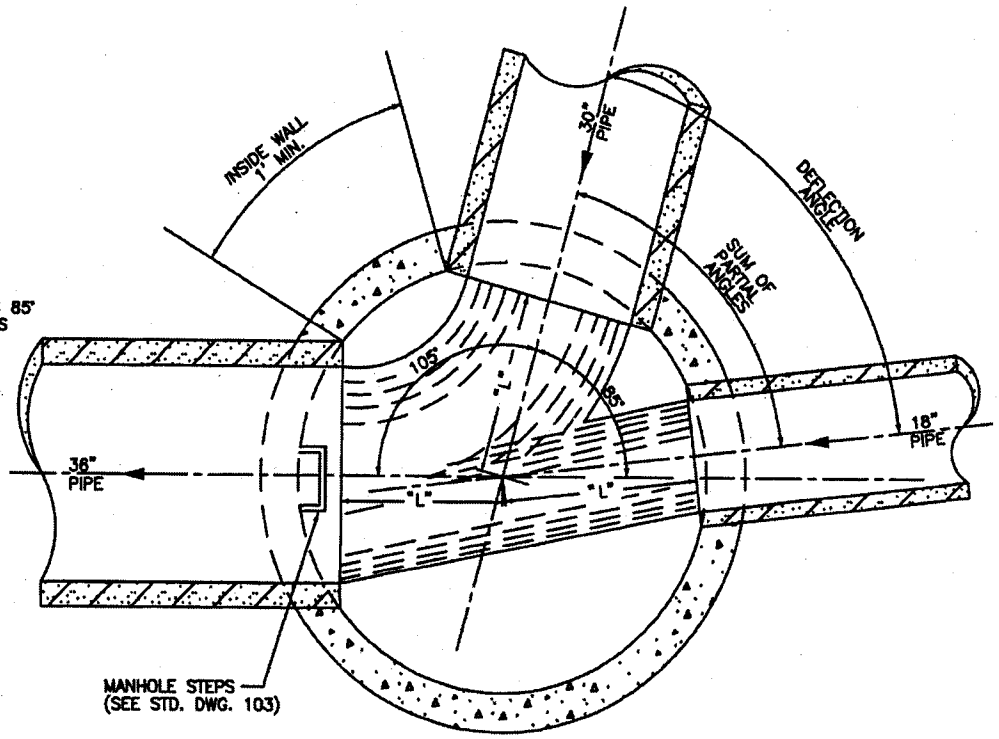
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

CIRCULAR MANHOLE NOTES:

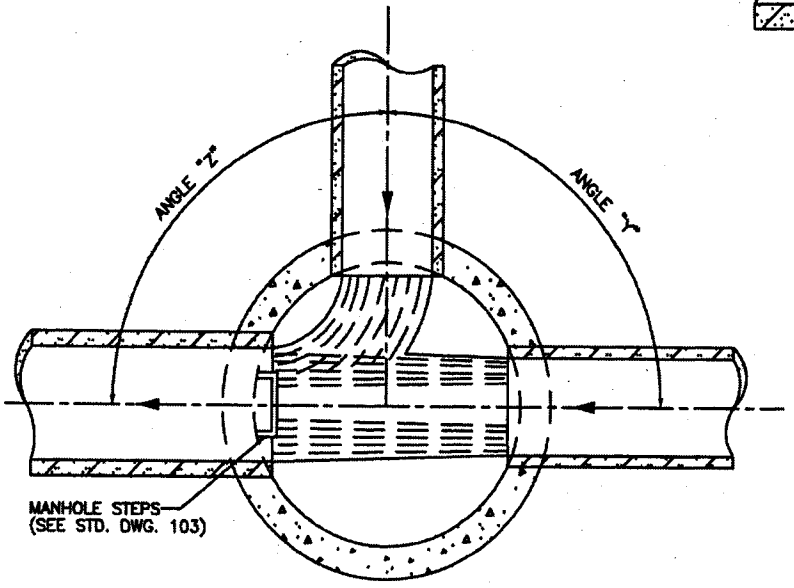
1. THE ANGLE BETWEEN ANY TWO PIPES (e.g. ANGLE "Y" OR "Z") MUST BE GREATER THAN THE SUM OF THE PARTIAL ANGLES. REFER TO SEPARATE STANDARD DRAWINGS FOR TABLE OF MINIMUM PARTIAL ANGLES. ANGLES SMALLER THAN LISTED ON TABLE SHALL REQUIRE LARGER MANHOLE SELECTION.
2. THE MAXIMUM DEFLECTION ANGLE BETWEEN ANY INCOMING PIPE AND THE CENTERLINE EXTENSION OF THE DISCHARGE PIPE SHALL BE NO MORE THAN 90° FOR PIPES UP TO 24" IN DIAMETER. THE MAXIMUM DEFLECTION ANGLE FOR 27" TO 36" PIPES SHALL BE 75°.

EXAMPLE FOR SANITARY MANHOLE SIZE SELECTION:

FOR MANHOLE SHOWN AT RIGHT, THE ANGLE BETWEEN THE 18" AND 30" PIPES IS 85° AND THE ANGLE BETWEEN THE 30" AND 36" PIPES IS 105°. THE TABLE INDICATES THAT FOR A 5'-0" DIAMETER MANHOLE THE MINIMUM PARTIAL ANGLE FOR AN 18" PIPE IS 34° AND FOR A 30" PIPE IS 50°. THE SUM OF THE PARTIAL ANGLES IS 84°, THIS SUM IS LESS THAN THE 85° THEREFORE, A 5'-0" MANHOLE DIAMETER IS ACCEPTABLE.



PLAN SECTION



PLAN SECTION

TABLE OF MINIMUM PARTIAL ANGLES FOR SANITARY MANHOLES

PIPE SIZE	MANHOLE SIZE 4'-0" P. ANGLE	4'-0" L. DIST.	5'-0" P. ANGLE	5'-0" L. DIST.
15"	38°	1'-10"	30°	2'-3"
18"	43°	1'-8"	34°	2'-3"
24"	53°	1'-6"	39°	2'-2"
27"	–	–	45°	2'-0"
30"	–	–	50°	1'-11"

NO.	DATE	REVISION DESCRIPTION	BY

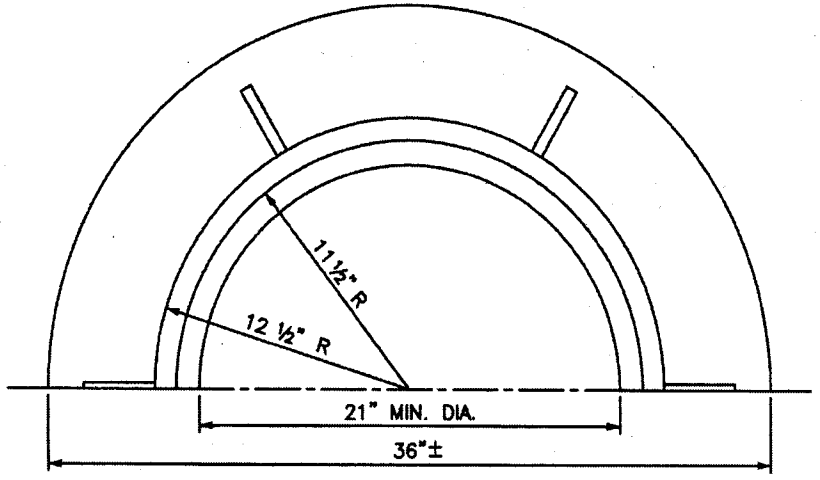
DIVISION OF ENGINEERING

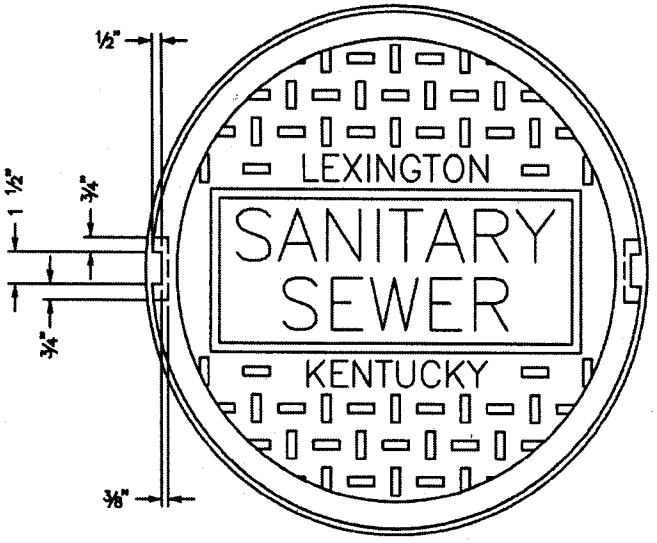
DEFLECTION ANGLE CRITERIA FOR SANITARY MANHOLES

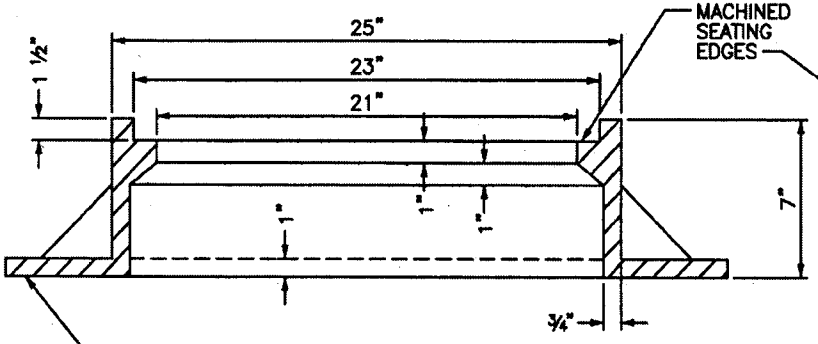
STANDARD DRAWING NO. 217

APPROVED: URBAN COUNTY ENGINEER / COMMISSIONER — DATE 5/1/08

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT







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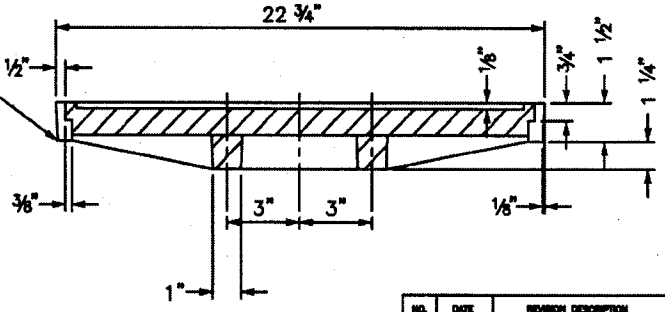


COVER DETAIL

NOTE:

MANHOLE FRAME & LID ASSEMBLY SHALL HAVE A MINIMUM LID WEIGHT OF 120 LBS. AND A TOTAL MINIMUM FRAME & LID WEIGHT OF 305 LBS. WITH ALL STEEL IN ACCORDANCE WITH ASTM A-48 CLASS 35 SPEC.

NO.	DATE	REVISION DESCRIPTION	BY

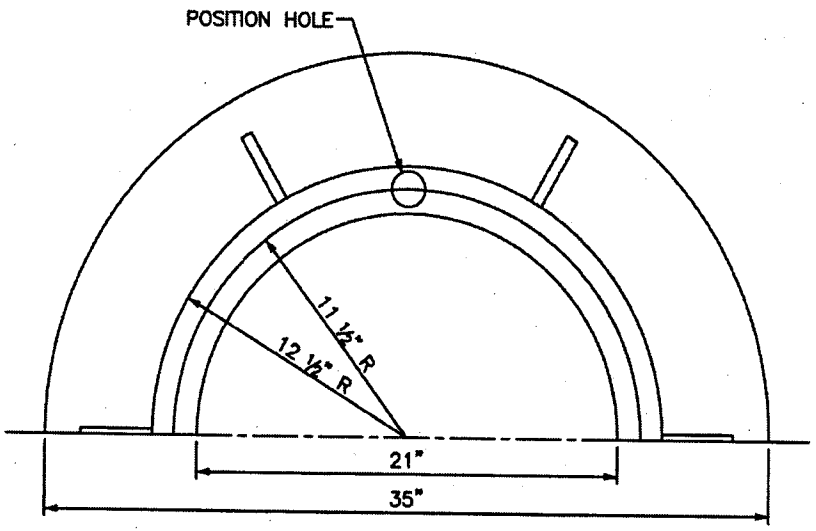
DIVISION OF ENGINEERING

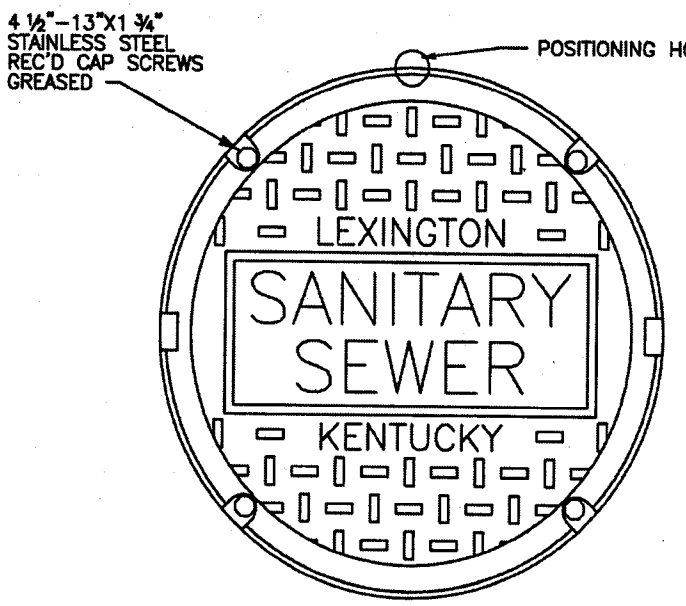
STANDARD CIRCULAR
MANHOLE FRAME & COVER

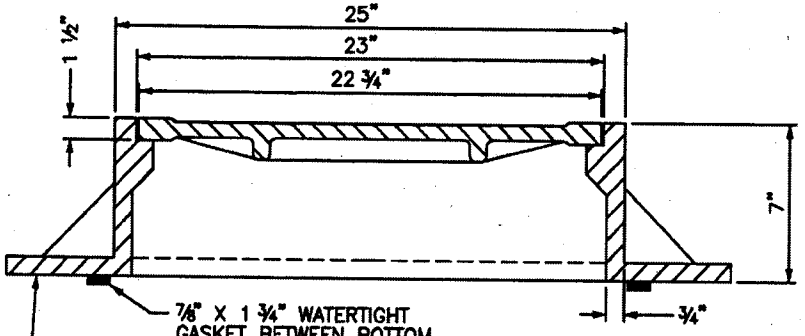
STANDARD DRAWING NO. 220

APPROVED: URBAN COUNTY ENGINEER — DATE 5/1/08
URBAN COUNTY COMMISSIONER — DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT







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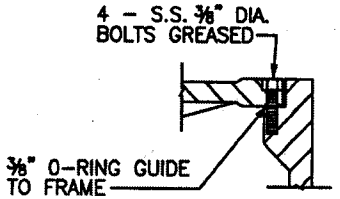
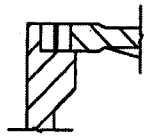


WATERTIGHT DETAIL



POSITIONING HOLE

COVER DETAIL

NOTE:

MANHOLE FRAME & LID ASSEMBLY SHALL BE NEENAH #R-1916-D OR APPROVED EQUAL, HAVE A MINIMUM LID WEIGHT OF 150 LBS. AND A TOTAL MINIMUM FRAME & LID WEIGHT OF 335 LBS. WITH ALL STEEL IN ACCORDANCE WITH ASTM A-48 CLASS 35 SPEC. OR HIGHER.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

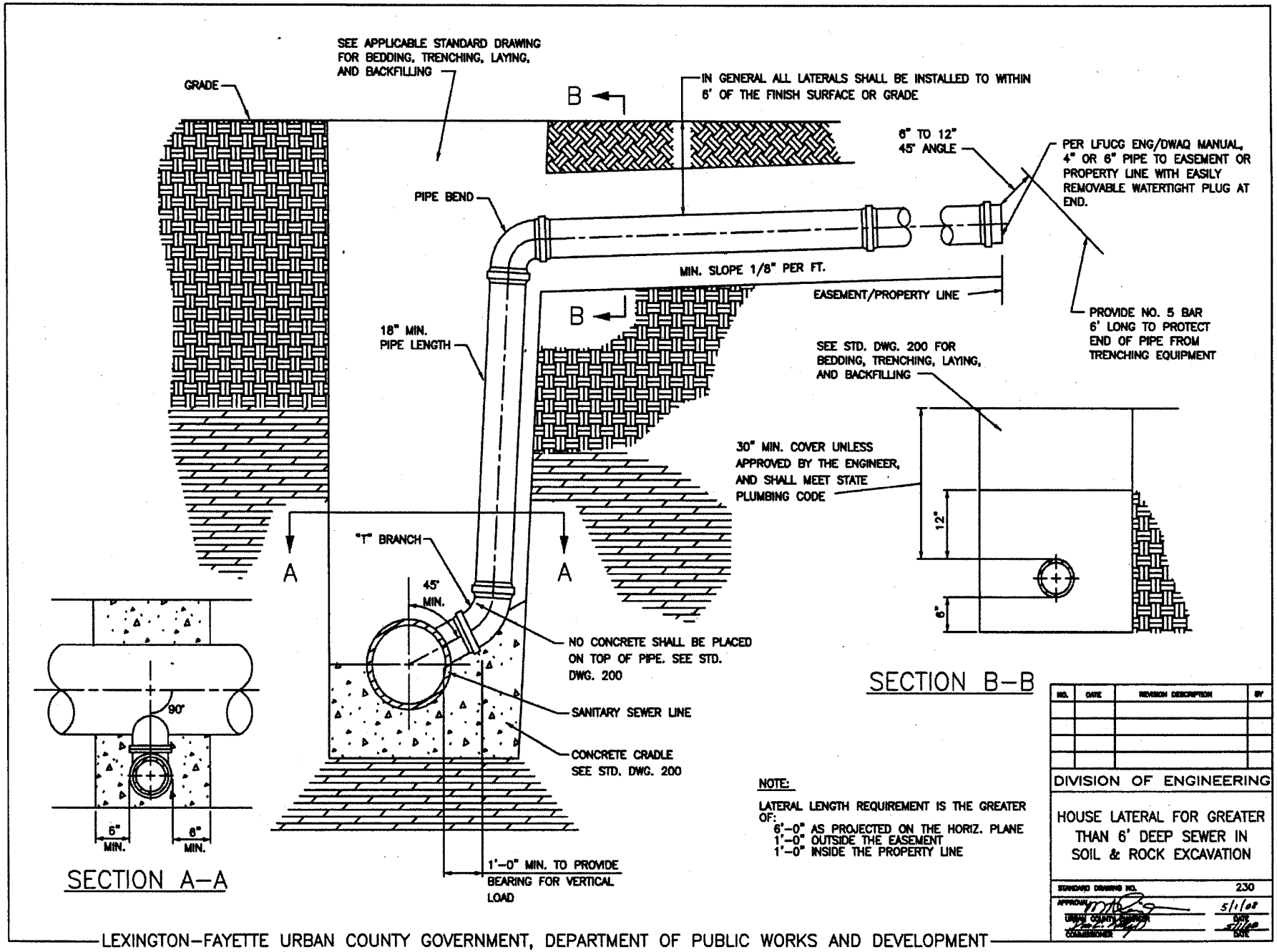
STANDARD WATERTIGHT MANHOLE FRAME & COVER

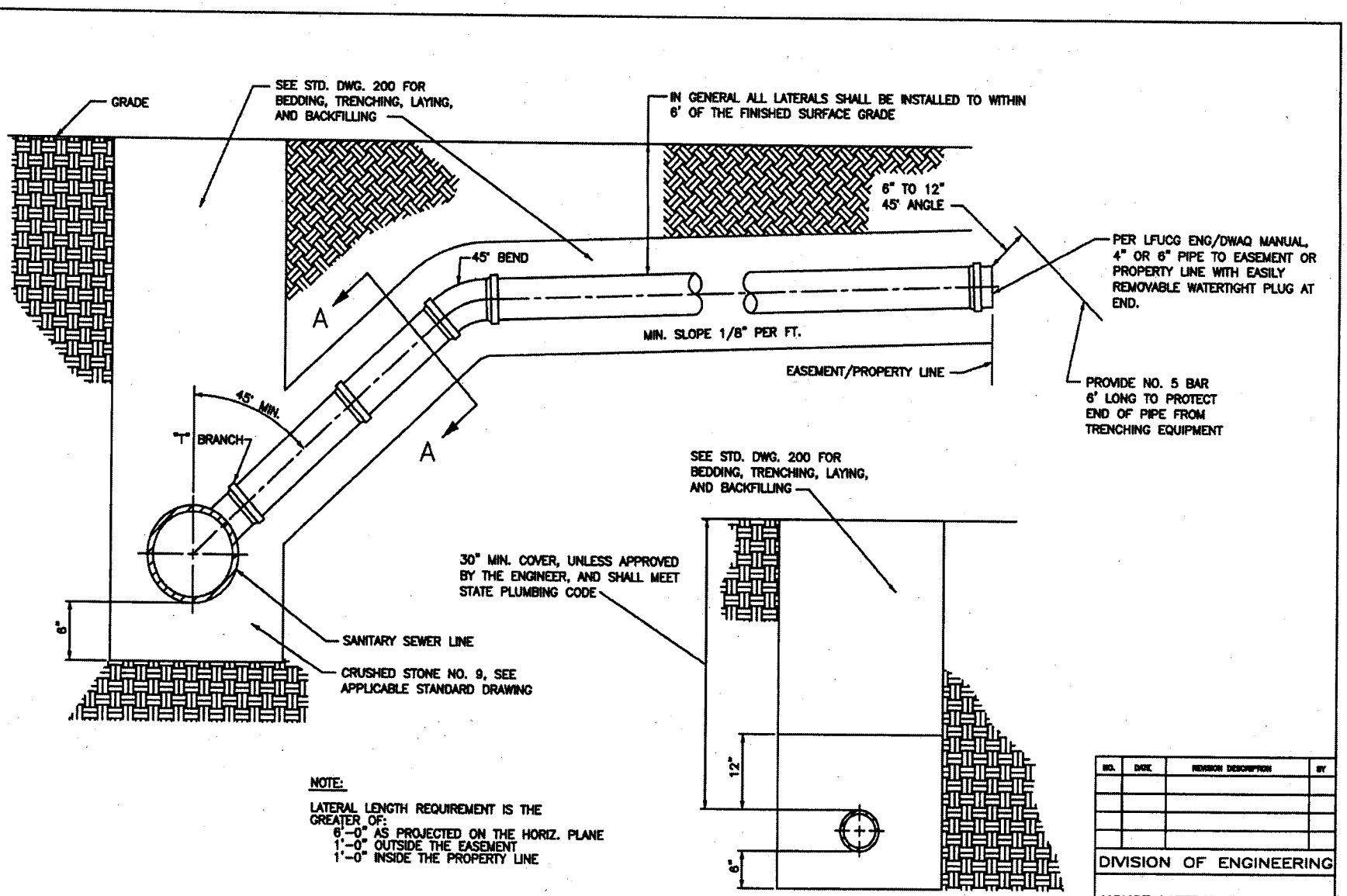
STANDARD DRAWING NO. 222

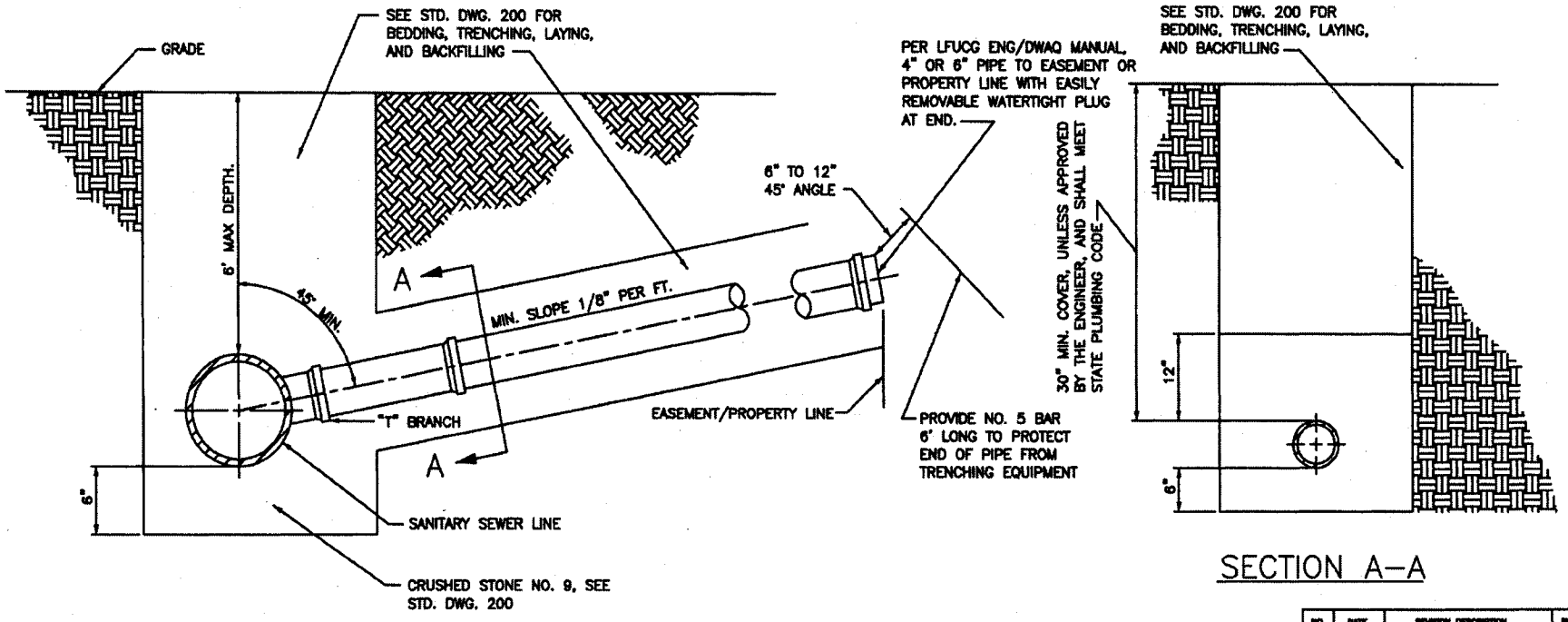
APPROVED 5/1/08 DATE

URBAN COUNTY ENGINEER 5/1/08 DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT


SEE APPLICABLE STANDARD DRAWING FOR BEDDING, TRENCHING, LAYING, AND BACKFILLING
GRADE
B
IN GENERAL ALL LATERALS SHALL BE INSTALLED TO WITHIN 6' OF THE FINISH SURFACE OR GRADE
6" TO 12" 45° ANGLE
PER LFUCG ENG/DWAQ MANUAL, 4" OR 6" PIPE TO EASEMENT OR PROPERTY LINE WITH EASILY REMOVABLE WATERTIGHT PLUG AT END.
PIPE BEND
MIN. SLOPE 1/8" PER FT.
EASEMENT/PROPERTY LINE
PROVIDE NO. 5 BAR 6' LONG TO PROTECT END OF PIPE FROM TRENCHING EQUIPMENT
18" MIN. PIPE LENGTH
SEE STD. DWG. 200 FOR BEDDING, TRENCHING, LAYING, AND BACKFILLING
30" MIN. COVER UNLESS APPROVED BY THE ENGINEER, AND SHALL MEET STATE PLUMBING CODE
12"
6"
"T" BRANCH
A
A
45° MIN.
NO CONCRETE SHALL BE PLACED ON TOP OF PIPE. SEE STD. DWG. 200
SANITARY SEWER LINE
CONCRETE CRADLE SEE STD. DWG. 200
90°
6" MIN.
6" MIN.
1'-0" MIN. TO PROVIDE BEARING FOR VERTICAL LOAD
SECTION A-A
SECTION B-B
NOTE:
LATERAL LENGTH REQUIREMENT IS THE GREATER OF:
6'-0" AS PROJECTED ON THE HORIZ. PLANE
1'-0" OUTSIDE THE EASEMENT
1'-0" INSIDE THE PROPERTY LINE
NO.
DATE
REVISION DESCRIPTION
BY
DIVISION OF ENGINEERING
HOUSE LATERAL FOR GREATER THAN 6' DEEP SEWER IN SOIL & ROCK EXCAVATION
STANDARD DRAWING NO. 230
APPROVED
URBAN COUNTY ENGINEER
COMMISSIONER
5/1/08
DATE
DATE
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT


GRADE
SEE STD. DWG. 200 FOR BEDDING, TRENCHING, LAYING, AND BACKFILLING
IN GENERAL ALL LATERALS SHALL BE INSTALLED TO WITHIN 6' OF THE FINISHED SURFACE GRADE
6" TO 12" 45' ANGLE
45' BEND
PER LFUCG ENG/DWAQ MANUAL, 4" OR 6" PIPE TO EASEMENT OR PROPERTY LINE WITH EASILY REMOVABLE WATERTIGHT PLUG AT END.
A
MIN. SLOPE 1/8" PER FT.
EASEMENT/PROPERTY LINE
PROVIDE NO. 5 BAR 6' LONG TO PROTECT END OF PIPE FROM TRENCHING EQUIPMENT
45' MIN.
"T" BRANCH
A
SEE STD. DWG. 200 FOR BEDDING, TRENCHING, LAYING, AND BACKFILLING
30" MIN. COVER, UNLESS APPROVED BY THE ENGINEER, AND SHALL MEET STATE PLUMBING CODE
6"
SANITARY SEWER LINE
CRUSHED STONE NO. 9, SEE APPLICABLE STANDARD DRAWING
12"
6"
NOTE:
LATERAL LENGTH REQUIREMENT IS THE GREATER OF:
6'-0" AS PROJECTED ON THE HORIZ. PLANE
1'-0" OUTSIDE THE EASEMENT
1'-0" INSIDE THE PROPERTY LINE
SECTION A-A
NO.
DATE
REVISION DESCRIPTION
BY
DIVISION OF ENGINEERING
HOUSE LATERAL FOR GREATER THAN 6' DEEP SEWER IN SOIL
STANDARD DRAWING NO.
231
APPROVED
DATE
DATE
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



SECTION A–A

NOTE:

LATERAL LENGTH REQUIREMENT IS THE GREATER OF:
- 6'–0" AS PROJECTED ON THE HORIZ. PLANE
- 1'–0" OUTSIDE THE EASEMENT
- 1'–0" INSIDE THE PROPERTY LINE

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

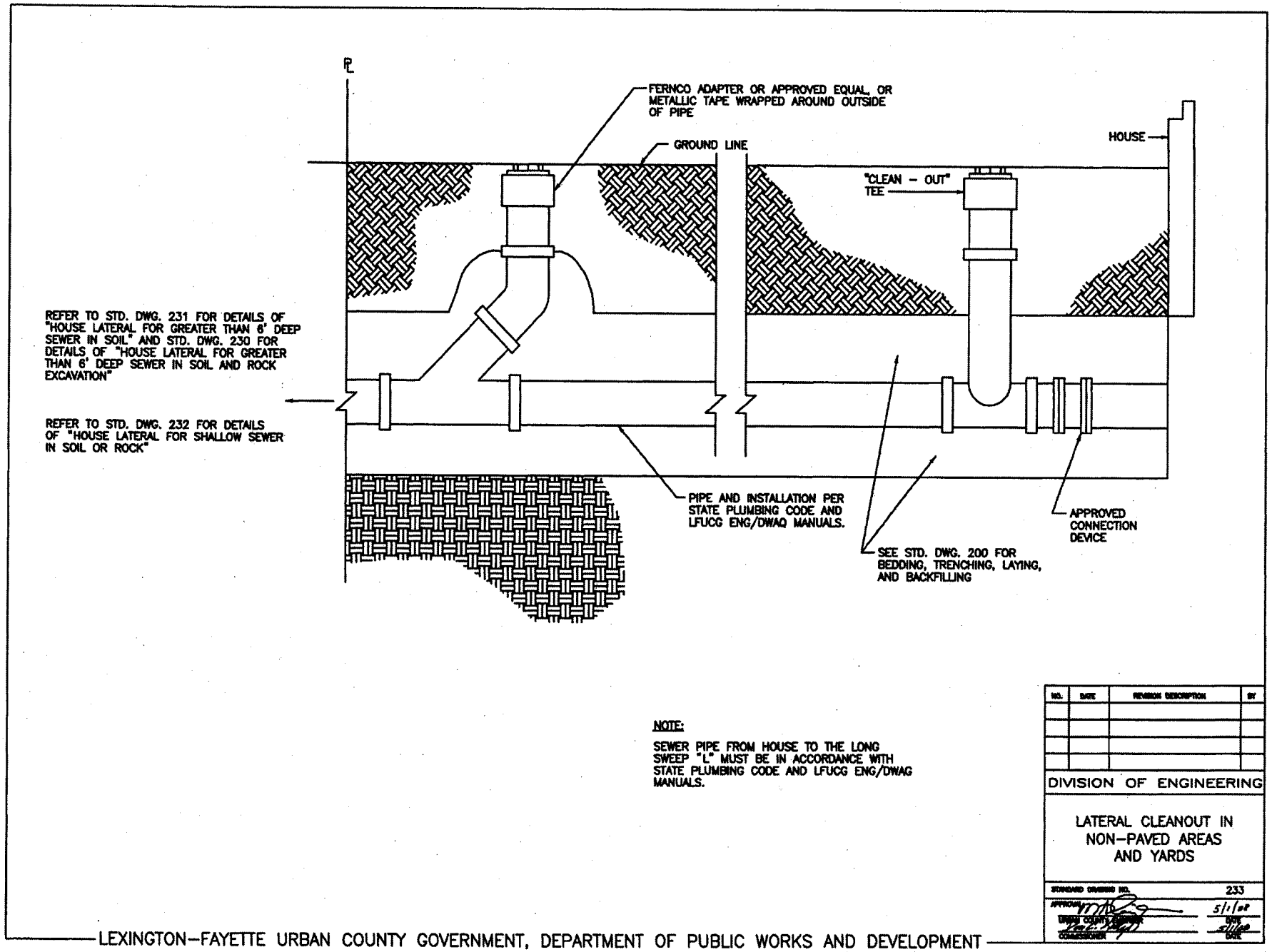
HOUSE LATERAL FOR SHALLOW SEWER IN SOIL OR ROCK

STANDARD DRAWING NO. 232

APPROVAL — URBAN COUNTY ENGINEER — DATE 5/1/08

COMMISSIONER — DATE 5/1/08

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



NOTE:

SEWER PIPE FROM HOUSE TO THE LONG SWEEP "L" MUST BE IN ACCORDANCE WITH STATE PLUMBING CODE AND LFUCG ENG/DWAG MANUALS.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

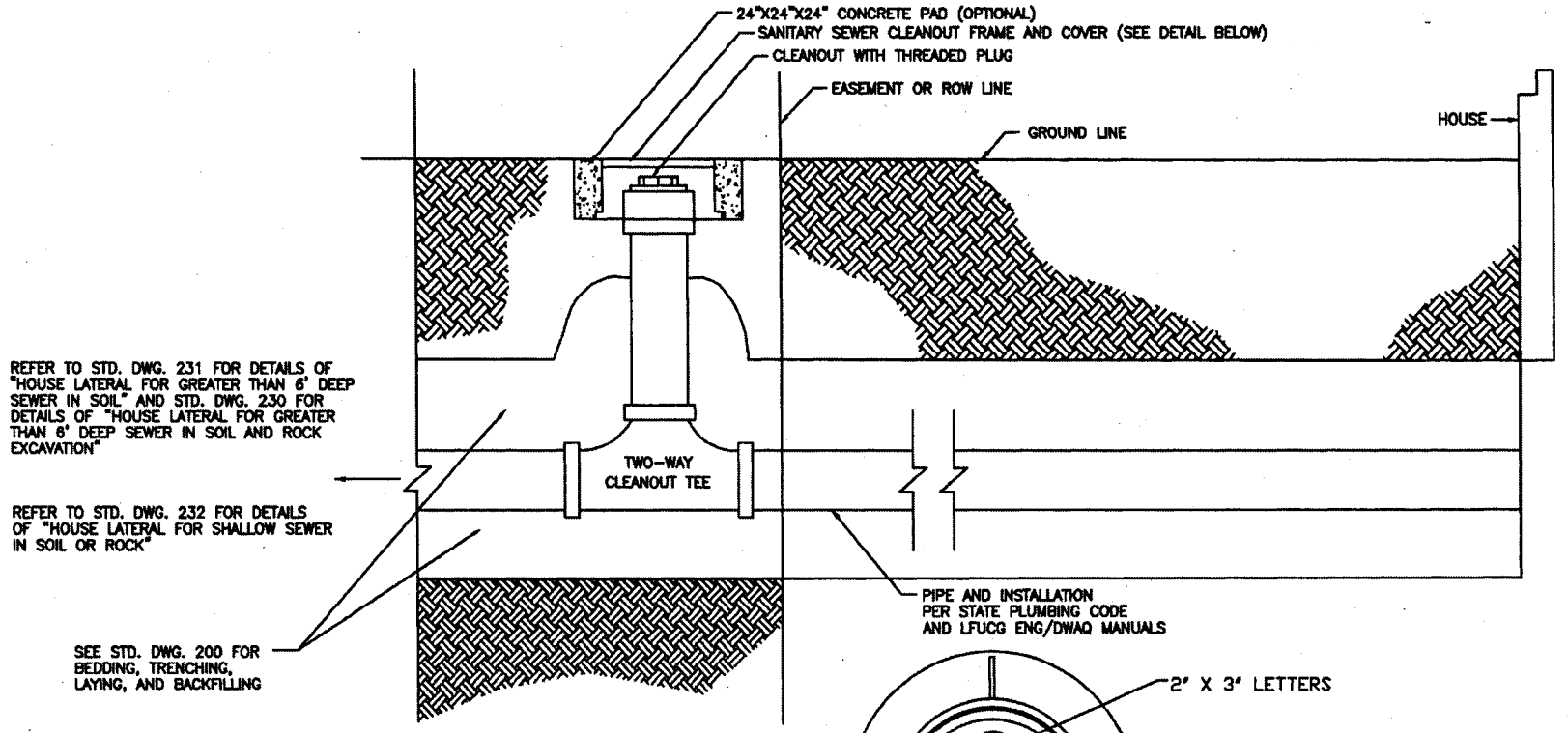
LATERAL CLEANOUT IN NON–PAVED AREAS AND YARDS

STANDARD DRAWING NO. 233

APPROVED: URBAN COUNTY ENGINEER — DATE 5/1/08

COMMISSIONER — DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



NOTES:

SEWER PIPE FROM HOUSE TO CLEANOUT MUST BE IN ACCORDANCE WITH STATE PLUMBING CODE AND LFUCG ENG/DWAQ MANUALS.

TWO-WAY CLEANOUT TEE IS TO BE INSTALLED BY THE PLUMBER AND OR CONTRACTOR PRIOR TO CONNECTION OF THE LATERAL TO PUBLIC SANITARY SEWER LINE.

CLEANOUT TO BE INSTALLED AT THE END OF PUBLICLY MAINTAINED SEWER. POINT TO BE DETERMINED BY THE DIVISION OF ENGINEERING.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

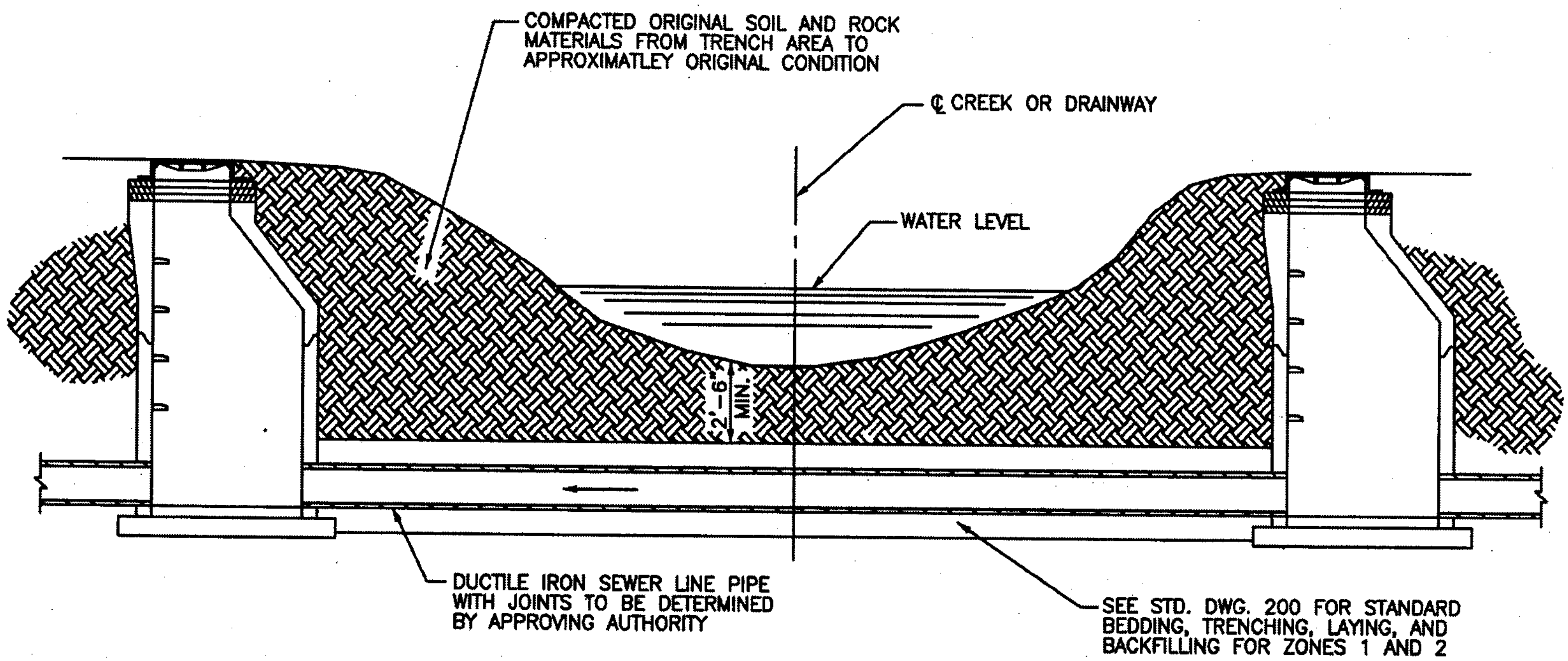
RIGHT OF WAY OR EASEMENT
LATERAL CLEANOUT
IN NON-PAVED
AREAS AND YARDS

STANDARD DRAWING NO. 234

APPROVED: 5/1/08 DATE
URBAN COUNTY ENGINEER

5/1/08 DATE
COMMISSIONER

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



NOTES:

1. A WATERSTOP SHALL BE PROVIDED ON THE UPSTREAM SIDE OF THE DOWNSTREAM MANHOLE.
2. SPECIAL DESIGN REQUIRED WHEN COVER IS 30" OR LESS.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

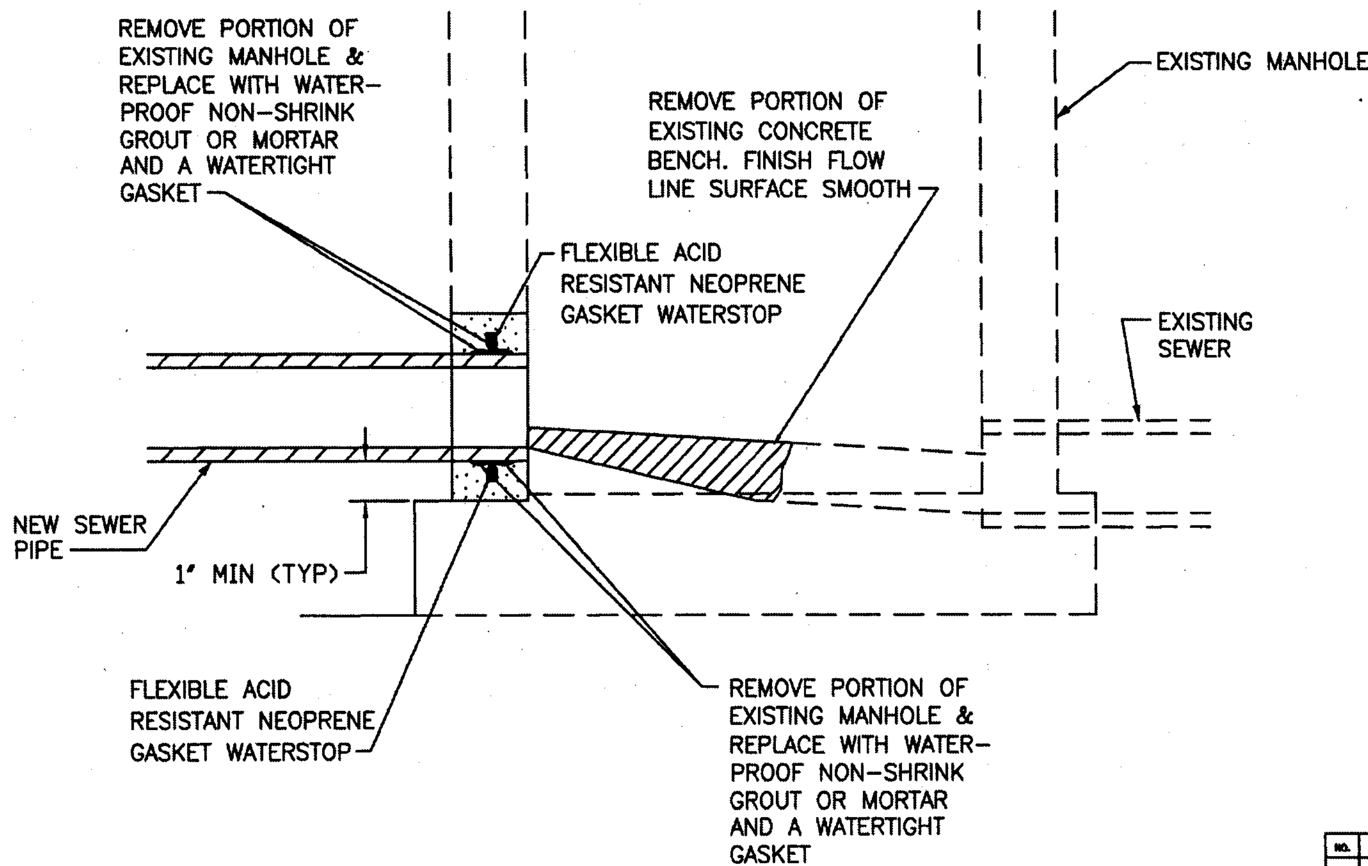
TYPICAL CREEK CROSSING FOR SANITARY SEWER LINE

STANDARD DRAWING NO. 240

APPROVAL: URBAN COUNTY ENGINEER 5/1/08 DATE

COMMISSIONER 5/1/08 DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



ALL HOLES CUT INTO SEWER MANHOLES SHALL BE CORE DRILLED.

SEWER CONNECTION TO EXISTING MANHOLE

NO.	DATE	REVISION DESCRIPTION	BY

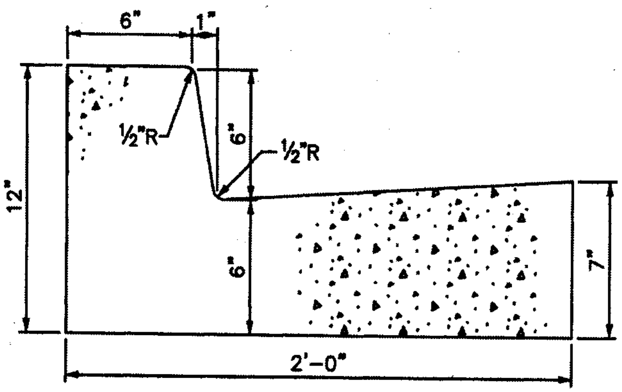
DIVISION OF ENGINEERING

SEWER CONNECTION TO EXISTING CONCRETE MANHOLE

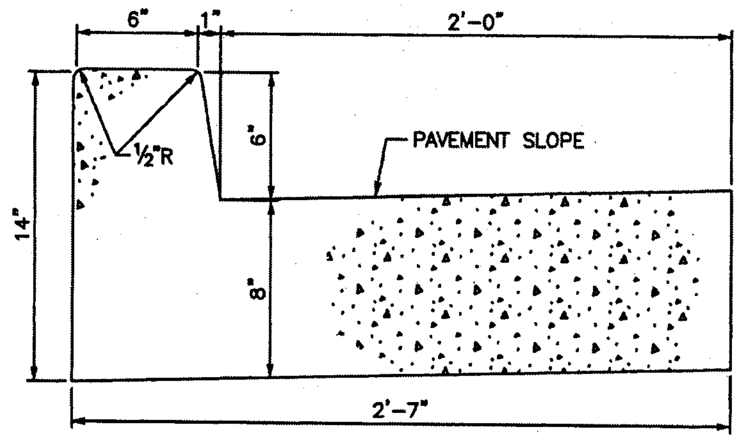
STANDARD DRAWING NO. 260

APPROVAL: URBAN COUNTY ENGINEER — DATE 5/1/08
COMMISSIONER — DATE

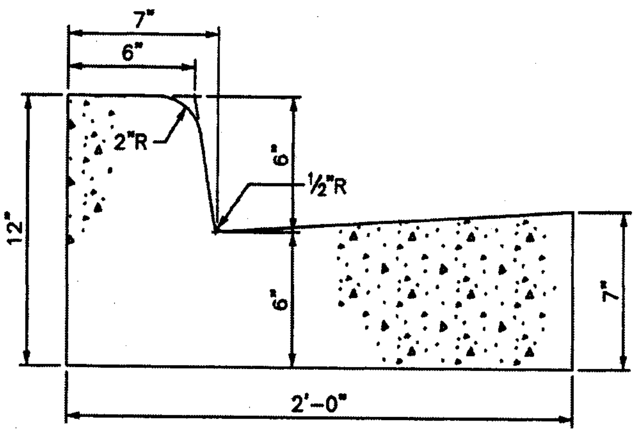
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



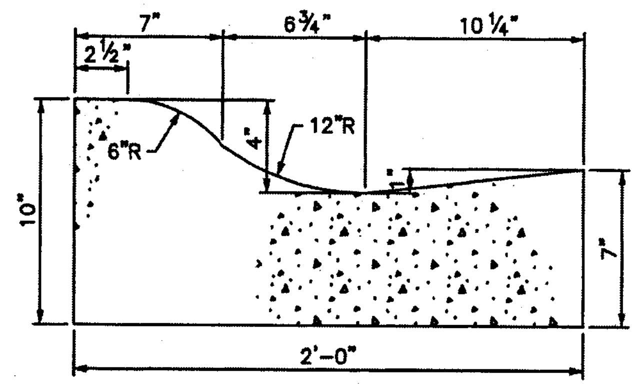
TYPE 1



TYPE 2



TYPE 3



TYPE 4
(RESIDENTIAL LOCAL STREETS ONLY)

NOTES:

1. CONCRETE SHALL BE KDOT CLASS "A".
2. SAWED CONTRACTION JOINTS SHALL BE CONSTRUCTED EVERY 20 FEET, WITH A MIN. DEPTH OF 3", IN ACCORDANCE WITH KDOT STANDARD SPECIFICATION.
3. EXPANSION JOINTS SHALL BE CONSTRUCTED AT ALL BREAKS IN ALIGNMENT, AT CONTACT WITH NEW OR EXISTING CONCRETE, AT ALL DRAINAGE INLETS, AT THE BEGINING AND ENDING POINTS OF CURVES, AND NOT TO EXCEED 200' MAXIMUM SPACING FOR SLIP FORM APPLICATION AND 30' MAXIMUM SPACING FOR HAND PLACED.
4. ALL CONCRETE SHALL BE CURED WITH WHITE PIGMENTED MEMBRANE FORMING COMPOUND (AASHTO M 148, TYPE 2).

NO.	DATE	REVISION DESCRIPTION	BY

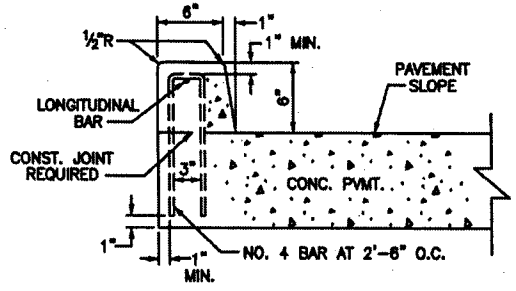
DIVISION OF ENGINEERING

CURB & GUTTER

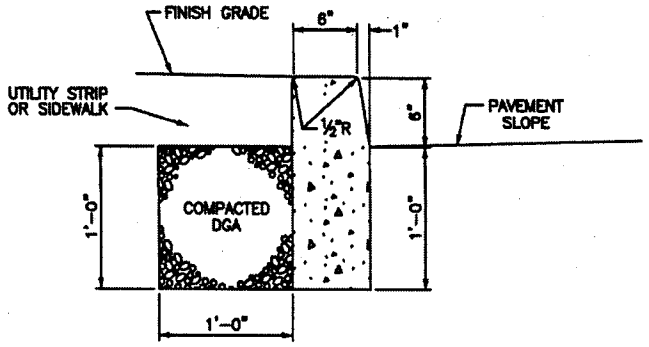
STANDARD DRAWING NO. 301

APPROVAL: URBAN COUNTY ENGINEER — DATE 5/1/08
COMMISSIONER — DATE

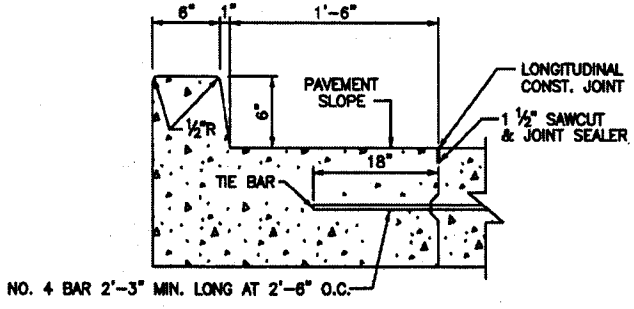
LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



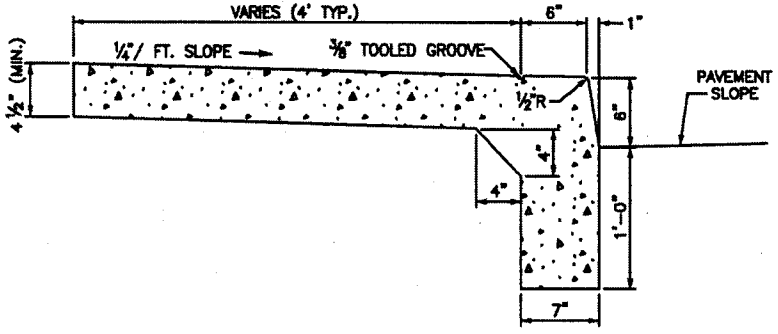
INTEGRAL CURB, TYPE 1



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. 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).

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

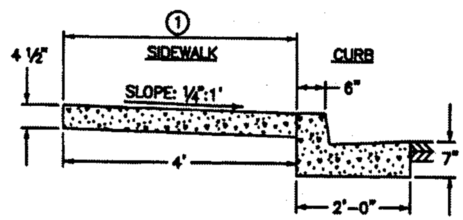
INTEGRAL CURB, HEADER CURB, MONOLITHIC CURB & SIDEWALK

STANDARD DRAWING NO. 302

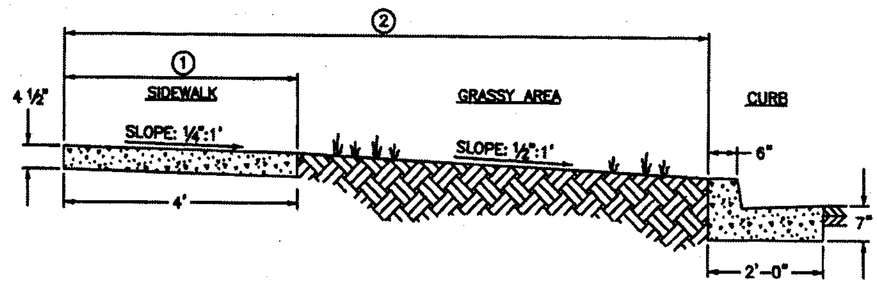
APPROVED: URBAN COUNTY ENGINEER — DATE 5/1/08

URBAN COUNTY COMMISSIONER — DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



SIDEWALK/CURB AND GUTTER



SIDEWALK/CURB AND GUTTER
WITH GRASS UTILITY STRIP

NOTES:

1. CONCRETE SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED ON A THOROUGHLY COMPACTED SUB-GRADE AND SHALL BE FOUR AND ONE HALF (4 ½) INCHES IN THICKNESS AND A MINIMUM WIDTH OF FOUR (4) FEET. CONCRETE SHALL HAVE SPECIFICATIONS FOR CLASS "A", KENTUCKY DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS, CURRENT EDITION. WHITE PIGMENTED (TYPE 2, CLASS "A" OR "B") CURING COMPOUND IS REQUIRED (ALSO KENTUCKY DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS, CURRENT EDITION).

2. EXPANSION JOINTS SHALL BE PLACED AT THIRTY-TWO (32) FOOT INTERVALS. IN EXISTING NEIGHBORHOODS, EXPANSION MATERIAL SHALL BE PLACED AT THE BEGINNING AND END OF NEWLY CONSTRUCTED AREAS.

3. THE SIDEWALKS SHALL BE PLACED ADJACENT TO THE STREET RIGHT-OF-WAY LINE. SLOPE TOWARD CURB SHALL BE ONE QUARTER (¼) 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.

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.

NO.	DATE	REVISION DESCRIPTION	BY

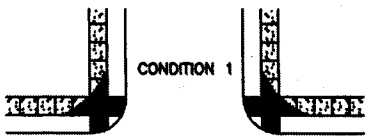
DIVISION OF ENGINEERING

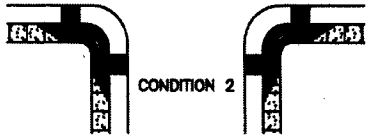
SIDEWALK CONSTRUCTION SPECIFICATIONS

STANDARD DRAWING NO. 303

APPROVAL: URBAN COUNTY ENGINEER — DATE 5/1/08
COMMISSIONER — DATE

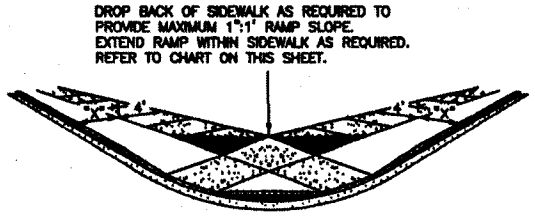
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



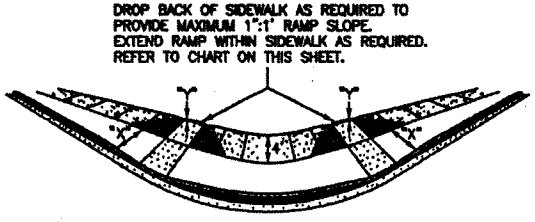


RAMP TYPE 1

NORMAL TREATMENT FOR ARTERIALS AND SIGNALIZED INTERSECTIONS



RAMP TYPE 1 CONDITION 1



RAMP TYPE 1 CONDITION 2

NOTE:
FOR USE WITH 6" HEADER CURB OR 6" CURB AND GUTTER

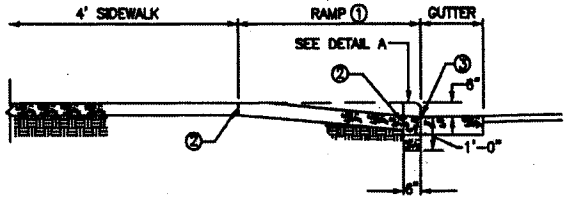
① UTILITY STRIP WIDTH "X"	② BACK OF 4' SIDEWALK DROP FROM NORMAL "Y"*
0	3"
1	2 ½"
2	2"
3	1 ½"
4	1"
5	½"
≥6	0

① ½":1' CROSS SLOPE ② ¼":1' CROSS SLOPE
*WHERE ROLL CURB IS USED, "Y" DOES NOT APPLY.

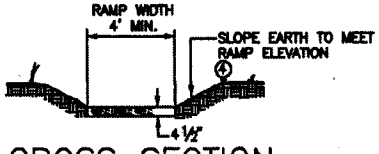
NOTES:

1. INLET LOCATIONS WILL VARY, DEPENDENT ON CROSSWALK AND RAMP LOCATION.
2. THE RAMP SHALL BE CONSTRUCTED OF CLASS "A" CONCRETE. STEP-SAFE® TRANSPO INDUSTRIES TILE OR ENGINEER APPROVED EQUIVALENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
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.

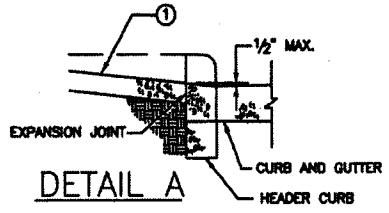
SHEET NOTES:
① MAXIMUM RAMP SLOPE 1":1'.
② ½" EXPANSION JOINT AT BACK OF CURBLINE AND SIDEWALK LINE.
③ NO BUMP PERMITTED.
④ SLOPE VARIES UNIFORMLY TO A MAXIMUM OF 1":1' AT GUTTER LINE.



PROFILE RAMP TYPE 1



CROSS SECTION RAMP TYPE 1



DETAIL A

NO.	DATE	REVISION DESCRIPTION	BY

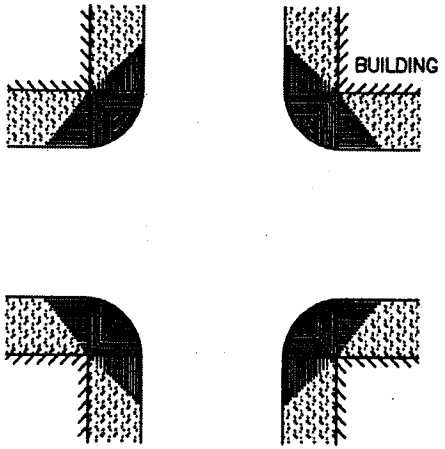
DIVISION OF ENGINEERING

SIDEWALK
RAMP TYPE 1

STANDARD DRAWING NO. 304

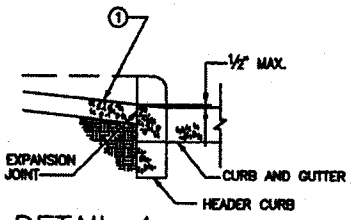
APPROVED: [signature] DATE 5/1/08
URBAN COUNTY ENGINEER
DIRECTOR: [signature] DATE 5/1/08
COMMISSIONER

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

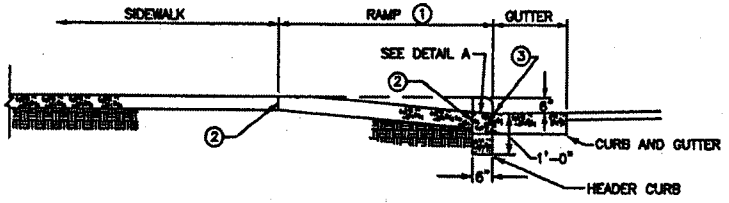


RAMP TYPE 3

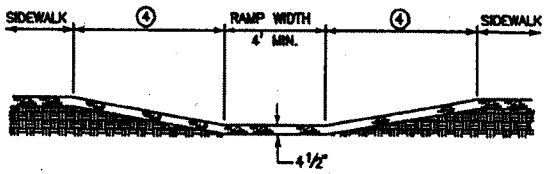
NORMAL TREATMENT FOR SIDEWALK ADJACENT TO CURB



DETAIL A



PROFILE RAMP TYPE 3



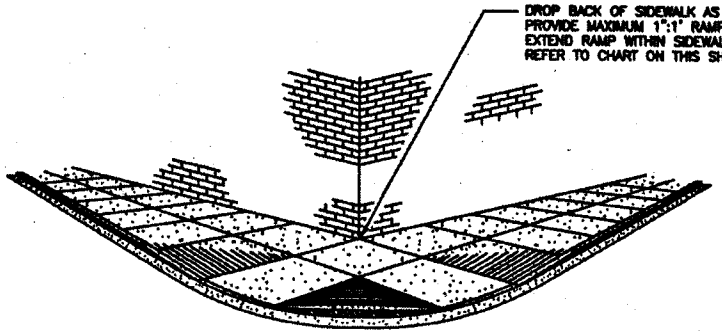
CROSS SECTION RAMP TYPE 3

NOTES:

1. INLET LOCATIONS WILL VARY, DEPENDENT ON CROSSWALK AND RAMP LOCATION.
2. THE RAMP SHALL BE CONSTRUCTED OF CLASS "A" CONCRETE. STEP-SAFE® TRANSPO INDUSTRIES TILE OR ENGINEER APPROVED EQUIVALENT SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
3. THE NORMAL GUTTER LINE SHOULD BE MAINTAINED THROUGH THE RAMP.
4. RAMPS SHOULD BE LOCATED WITHIN MARKED LIMITS OF CROSSWALKS.

SHEET NOTES:

① MAXIMUM RAMP SLOPE 1":1'.
② ½" EXPANSION JOINT AT BACK OF CURBLINE AND SIDEWALK LINE.
③ NO BUMP PERMITTED.
④ SLOPE VARIES UNIFORMLY TO A MAXIMUM OF 1":1'. AT GUTTER LINE.



RAMP TYPE 3

NOTE:
FOR USE WITH 6" HEADER CURB OR 6" CURB AND GUTTER

SIDEWALK WIDTH ① "X"	BACK OF SIDEWALK DROP FROM NORMAL "Y"*
4'	3"
5'	2¼"
6'	1½"
7'	¾"
≥ 8'	0

① ¼":1' CROSS SLOPE
* WHERE ROLL CURB IS USED, "Y" DOES NOT APPLY.

NO.	DATE	REVISION DESCRIPTION	BY

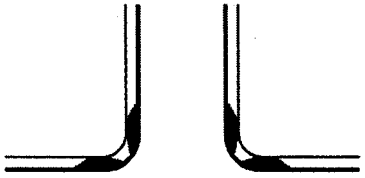
DIVISION OF ENGINEERING

SIDEWALK
RAMP TYPE 2

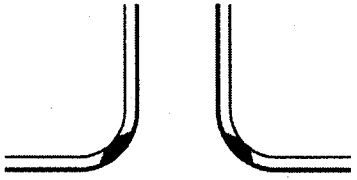
STANDARD DRAWING NO. 305

APPROVED: 5/1/08
URBAN COUNTY ENGINEER — DATE
COMMISSIONER — DATE

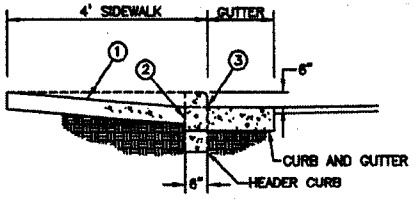
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



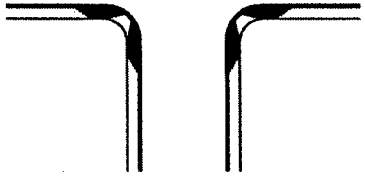
CONDITION 1



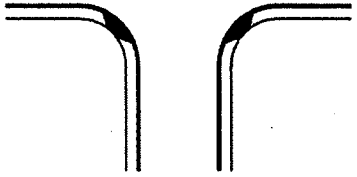
CONDITION 2



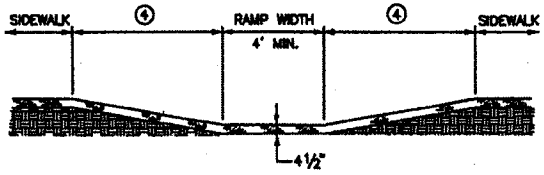
RAMP PROFILE



4' SIDEWALK ADJACENT TO CURB



4' SIDEWALK ADJACENT TO CURB



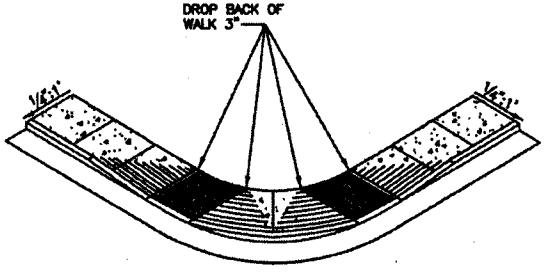
RAMP CROSS-SECTION

NOTES:

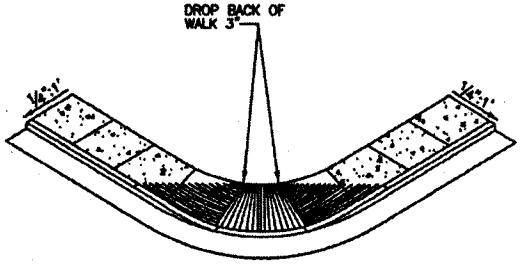
1. INLET LOCATIONS WILL VARY, DEPENDENT ON CROSSWALK AND RAMP LOCATION
2. THE RAMP SHALL BE CONSTRUCTED OF CLASS "A" CONCRETE. STEP-SAFE® TRANSPO INDUSTRIES TILE OR ENGINNEERS APPROVED EQUIVALENT SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
3. THE NORMAL GUTTER LINE SHOULD BE MAINTAINED THROUGH THE RAMP.
4. RAMPS SHOULD BE LOCATED WITHIN MARKED LIMITS OF CROSSWALKS.

SHEET NOTES:

1. MAXIMUM RAMP SLOPE 1":1'.
2. ½" EXPANSION JOINT AT BACK OF CURBLINE AND SIDEWALK LINE.
3. NO BUMP PERMITTED.
4. SLOPE VARIES UNIFORMLY TO A MAXIMUM OF 1":1' AT GUTTER LINE.



CONDITION 1



CONDITION 2

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

SIDEWALK RAMP
TYPE 3

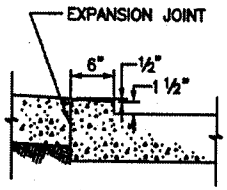
STANDARD DRAWING NO. 306

APPROVED: URBAN COUNTY ENGINEER — DATE 5/1/08
APPROVED: COMMISSIONER — DATE 5/1/08

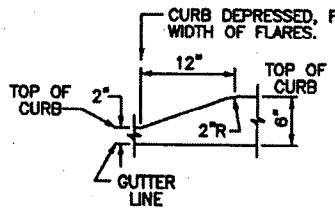
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

MAXIMUM ALLOWABLE APRON AND DRIVEWAY WIDTHS

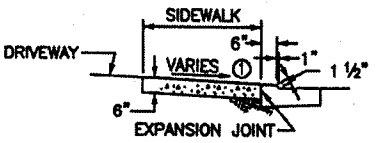
CLASSIFICATION	DRIVEWAY	APRON
SINGLE RESIDENTIAL	12'	18'
DOUBLE OR JOINT RESIDENTIAL	20'	26'



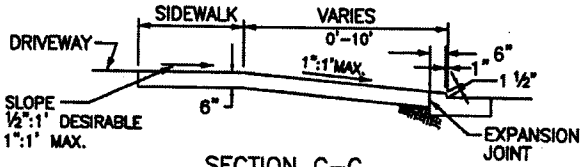
SECTION A–A



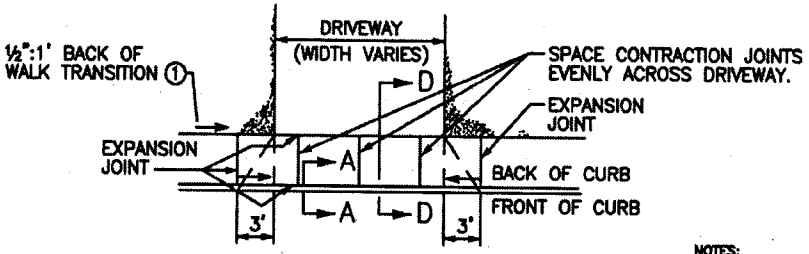
SECTION B–B



SECTION D–D



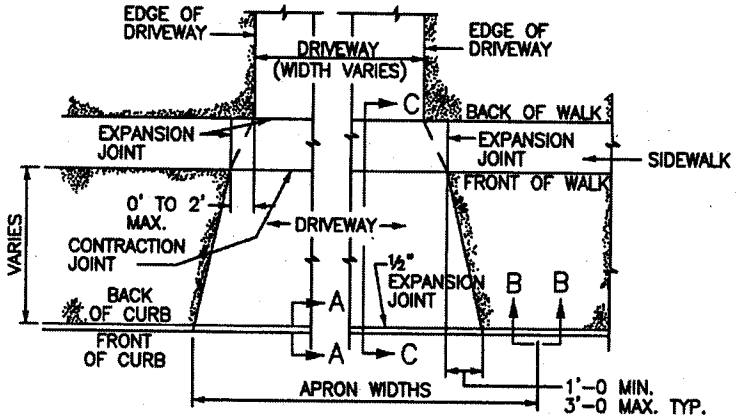
SECTION C–C



ENTRANCE WITHOUT UTILITY STRIP

STREET WITH PARKING LANE

STREET WITHOUT PARKING LANE



ENTRANCE WITH UTILITY STRIP

NOTE:
FOR USE WITH 6" HEADER CURB OR 6" CURB AND GUTTER

BASED ON UTILITY STRIP WITH ½":1' CROSS SLOPE

UTILITY STRIP WIDTH	DROP BACK OF 4' SIDEWALK	SIDEWALK SLOPE	SLOPE ON APRON
0'	1½"	7.29%	N/A
2'	1½"	5.21%	8.33%
4'	1½"	3.12%	8.33%
5'	1½"	2.08%	8.33%
6'	1"	2.08%	8.33%
8'	0"	2.08%	8.33%
10'	0"	2.08%	7.50%

BASED ON UTILITY STRIP WITH ¼":1' CROSS SLOPE

UTILITY STRIP WIDTH	DROP BACK OF 4' SIDEWALK	SIDEWALK SLOPE	SLOPE ON APRON
0'	1½"	7.29%	N/A
2'	1½"	4.17%	8.33%
3'	1½"	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%

NOTES:

① DROP BACK OF SIDEWALK GRADE 1 ½" OVER 3' TO PROVIDE A MAXIMUM SLOPE OF 1":1'.

2. PROVIDE A SAWED JOINT ALONG CENTER LINE OF APRON.
3. MAXIMUM DROP AT BACK OF SIDEWALK SHALL NOT EXCEED 1 ½".
4. MAXIMUM CROSS SLOPE ON SIDEWALK SHALL NOT EXCEED 1":1' (8.3%).
5. MAXIMUM SLOPE ON APRON SHALL NOT EXCEED 1":1' (8.3%).
6. ENTIRE APRON FROM BACK OF CURB TO BACK OF SIDEWALK SHALL BE CONSTRUCTED WITH A SINGLE POUR.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

RESIDENTIAL ENTRANCE DETAILS

STANDARD DRAWING NO. 307

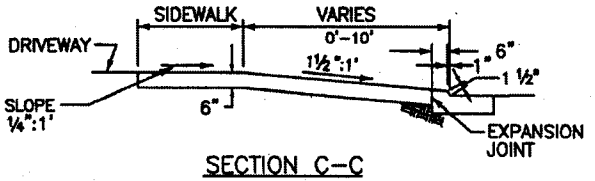
APPROVED: [signature] 5/1/02
DIRECTOR, DIVISION OF ENGINEERING — DATE

[signature] 5/1/02
COMMISSIONER — DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

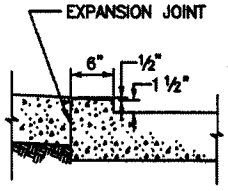
MAXIMUM ALLOWABLE APRON AND DRIVEWAY WIDTHS

CLASSIFICATION	DRIVEWAY	STANDARD APRON	ALTERNATE APRON
NON–RESIDENTIAL	30'	5' STRAIGHT FLARE=40' CURB CUT	10' RADIAL FLARE=50' CURB CUT
COMMERCIAL LOADING	30'	15' STRAIGHT FLARE=60' CURB CUT	20' RADIAL FLARE=70' CURB CUT
INDUSTRIAL	40'	20' STRAIGHT FLARE=80' CURB CUT	25' RADIAL FLARE=90' CURB CUT

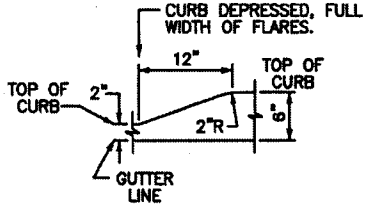


SECTION C–C

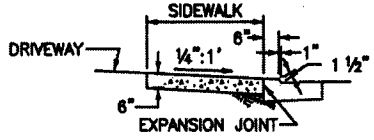
FRONT OF SIDEWALK ELEVATION DETERMINED BY ADDING ½ ": 1' ACROSS UTILITY STRIP FROM TOP OF CURB. IF COMING OFF 1½ " LIP ADD ANOTHER 4½ " TO DETERMINE ELEVATION AT FRONT OF SIDEWALK.



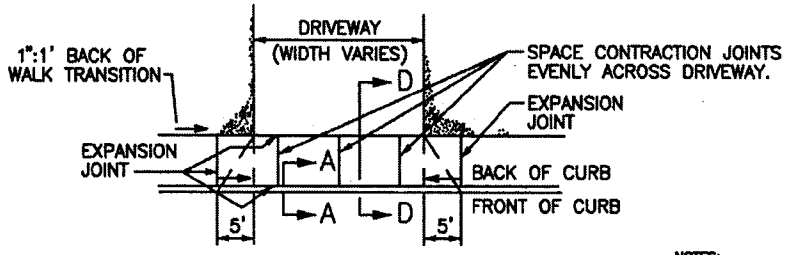
SECTION A–A



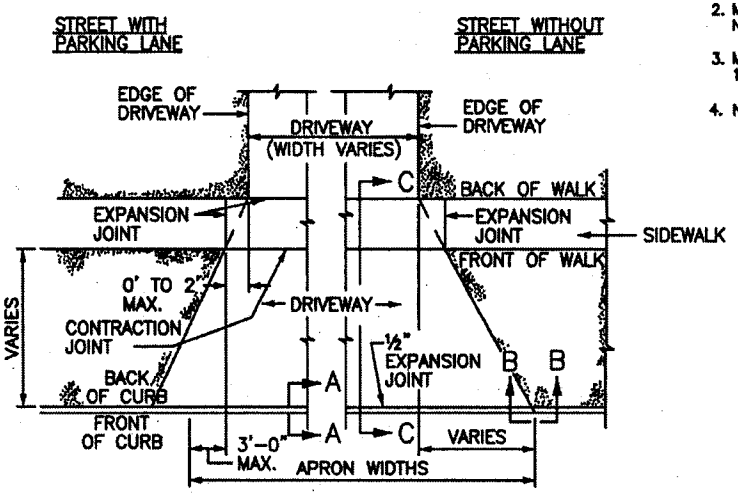
SECTION B–B



SECTION D–D



ENTRANCE WITHOUT UTILITY STRIP



ENTRANCE WITH UTILITY STRIP

NOTES:

1. PROVIDE A SAWED JOINT ALONG CENTER LINE OF APRON.
2. MAXIMUM CROSS SLOPE ON SIDEWALK SHALL NOT EXCEED ¼":1'.
3. MAXIMUM SLOPE ON APRON SHALL NOT EXCEED 1½":1'.
4. NO CATCH BASINS WILL BE PUT IN APRONS.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

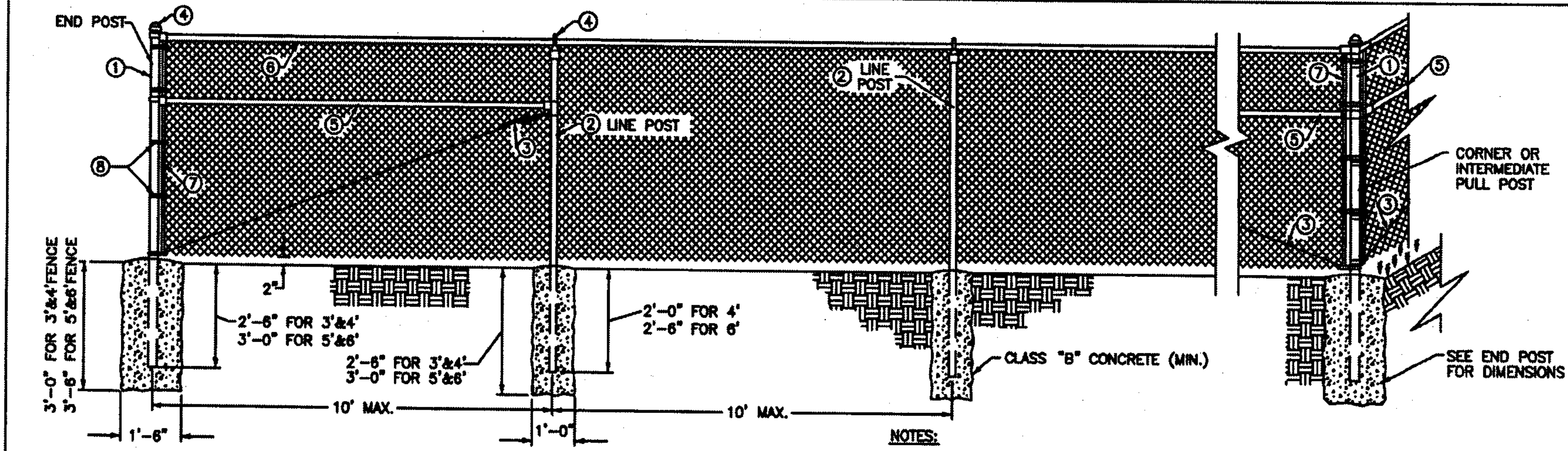
COMMERCIAL ENTRANCE DETAILS

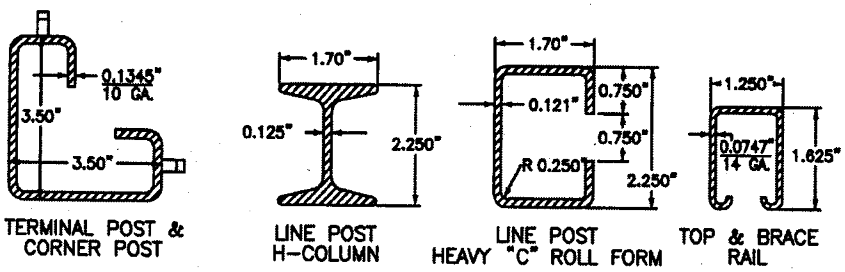
STANDARD DRAWING NO. 307–1

APPROVED 5/1/08 DATE

URBAN COUNTY ENGINEER / COMMISSIONER 5/1/08 DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



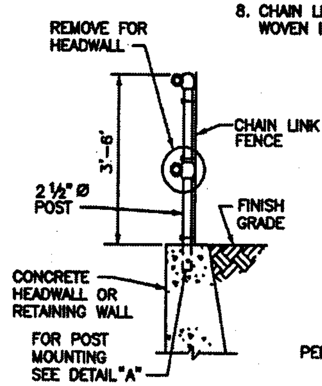


NOTES:

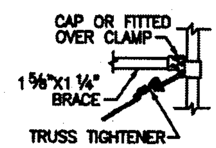
1. ALL POSTS SHALL BE SET IN CONCRETE TO THE DIMENSIONS AS INDICATED ON THIS DRAWING.
2. 3' HIGH FENCE SHALL HAVE 3' FABRIC HEIGHT. 4' HIGH FENCE SHALL HAVE 4' FABRIC HEIGHT. 5' HIGH FENCE SHALL HAVE 5' FABRIC HEIGHT. 6' HIGH FENCE SHALL HAVE 6' FABRIC HEIGHT.
3. BRACE BANDS SHALL BE 7/8"X 1/8" GALVANIZED STEEL 5/16"X1 1/4" CARRIAGE BOLT.
4. POST CAPS AND SOCKET TYPE BRACE END CONNECTIONS SHALL BE GALVANIZED MALLEABLE IRON OR OTHER TYPE AS APPROVED BY THE ENGINEER. THEY SHALL BE DESIGNED IN A MANNER TO EXCLUDE MOISTURE FROM INSIDE POSTS AND RAILS.
5. O.D. DEPICTED FOR TUBULAR POSTS IS NOMINAL–ASTM A-120 SHALL GOVERN.
6. STRUCTURAL SHAPES SHALL CONFORM TO STD. SPEC. 816.07.01 EXCEPT YIELD SHALL BE A MIN. 45,000 P.S.I.
7. INDISCRIMINATE MIXING OF POSTS WILL NOT BE PERMITTED.
8. CHAIN LINK FENCE FABRIC SHALL BE 0.148 INCH NOMINAL DIAMETER (NO. 9 GAGE) WIRE WOVEN IN 2 INCH MESH.

LEGEND–(ALTERNATES)

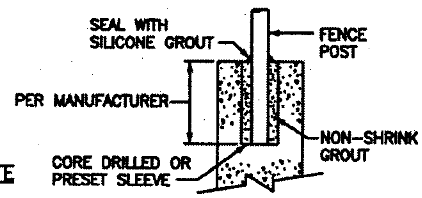
	TUBULAR	ROLL FORMED
①	2 1/2" O.D. @ 3.65#/L.F.	3.5"X3.5" @ 5.14#/L.F.
②	2" O.D. @ 2.72#/L.F.	2.250" H-COL.@ 3.26#/L.F. OR 2.250" C-COL.@ 2.64#/L.F.
③	3/8" Ø TRUSS ROD & TIGHTENER	0.375"Ø TRUSS ROD & TIGHTENER
④	APPROVED CAPS	NOT REQUIRED
⑤	1 5/8" BRACE @ 2.27#/L.F.	1.250"X1.625" @ 1.35#/L.F.
⑥	1 5/8" O.D. @ 2.27#/L.F.	1.250"X1.625" @ 1.35#/L.F.
⑦	3/16"X3/4" FLAT STRETCHER BAR	NOT REQUIRED
⑧	BRACE BAND & TENSION BAND	NOT REQUIRED



CHAIN LINK FENCE MOUNTED TO CONCRETE HEADWALL OR RETAINING WALL



BRACE & TRUSS CONNECTION



DETAIL "A"

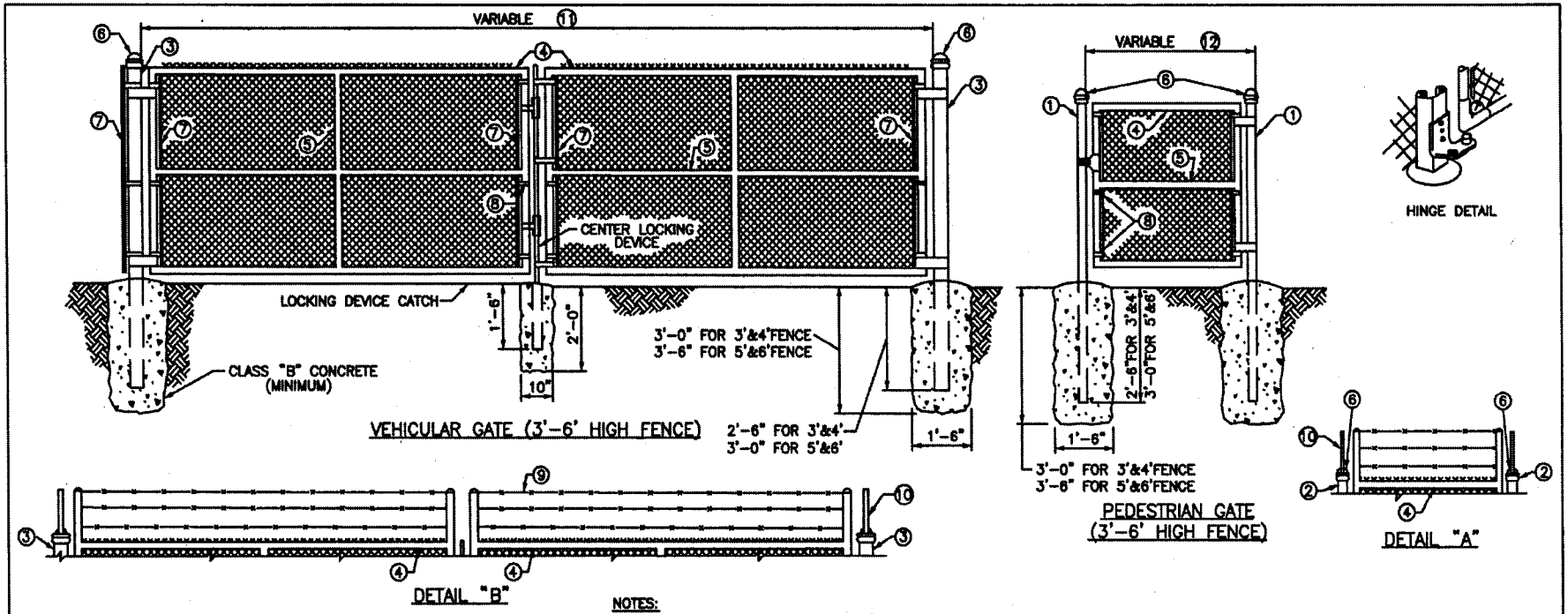
NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

CHAIN LINK FENCE
3'-6'

STANDARD DRAWING NO. 308
APPROVAL: 5/1/08

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



LEGEND – (ALTERNATES)

	TUBULAR	ROLL FORMED
①	END POST 2½" O.D. @ 3.65#/L.F.	3½"X3½" @ 5.14#/L.F.
②	END POST 3" O.D. @ 3.65#/L.F.	3½"X3½" @ 5.14#/L.F.
③	4" O.D. @ 9.1#/L.F. GATE POST	NO ALTERNATE
④	2" O.D. @ 2.72#/L.F. GATE FRAME	NO ALTERNATE
⑤	1⅝" O.D. @ 2.27#/L.F.	NO ALTERNATE
⑥	APPROVED CAPS	NOT REQUIRED
⑦	¾"X⅜" FLAT STRETCHER BAR	NOT REQUIRED
⑧	BRACE BAND & TENSION BAND	NOT REQUIRED
⑨	BARBED WIRE	BARBED WIRE
⑩	BARBED WIRE ARMS	BARBED WIRE ARMS

NOTES:

1. ALL POSTS SHALL BE SET IN CONCRETE TO THE DIMENSIONS AS INDICATED ON THIS DRAWING.
2. VEHICULAR AND PEDESTRIAN GATES SHALL HAVE HEAVY PRESSED STEEL CORNERS SECURELY RIVETED OR SHALL BE MACHINE NOTCHED, AND ELECTRICALLY WELDED SO AS TO BE RIGID AND WATER TIGHT; AND EQUIPPED WITH PADLOCKING DEVICE AND GROUND STOP.
3. ALL WELDED JOINTS SHALL BE CLEANED AND PAINTED WITH TWO (2) COATS OF ALUMINUM PAINT.
4. 3' HIGH GATES SHALL HAVE 3' FABRIC HEIGHT. 4' HIGH GATES SHALL HAVE 4' FABRIC HEIGHT. 5' HIGH GATES SHALL HAVE 5' FABRIC HEIGHT. 6' HIGH GATES SHALL HAVE 6' FABRIC HEIGHT. 8' HIGH GATES SHALL HAVE 7' FABRIC HEIGHT. 9' HIGH GATES SHALL HAVE 8' FABRIC HEIGHT. 10' HIGH GATES SHALL HAVE 9' FABRIC HEIGHT. 11' HIGH GATES SHALL HAVE 10' FABRIC HEIGHT. 12' HIGH GATES SHALL HAVE 11' FABRIC HEIGHT.
5. SEE DETAIL "A" FOR BARBED WIRE INSTALLATION ON 8' TO 12' HIGH PEDESTRIAN GATES.
6. SEE DETAIL "B" FOR BARBED WIRE INSTALLATION ON 8' TO 12' HIGH VEHICULAR GATES.
7. THE CONTRACTOR IS NOT TO ORDER GATES UNTIL THEIR NECESSITY AND LOCATION HAVE BEEN CERTIFIED BY THE ENGINEER.
8. O.D. DEPICTED FOR TUBULAR POSTS IS NOMINAL – ASTM A-120 SHALL GOVERN.
9. CHAIN LINK FENCE FABRIC SHALL BE 0.148 INCH NOMINAL DIAMETER (NO.9 GAGE) WIRE WOVEN 2 INCH MESH.

⑪ 6' TO 13' WIDTH FOR SINGLE GATE OR 12' TO 26' WIDTH FOR DOUBLE GATE.

⑫ 4' TO 6' WIDTH

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

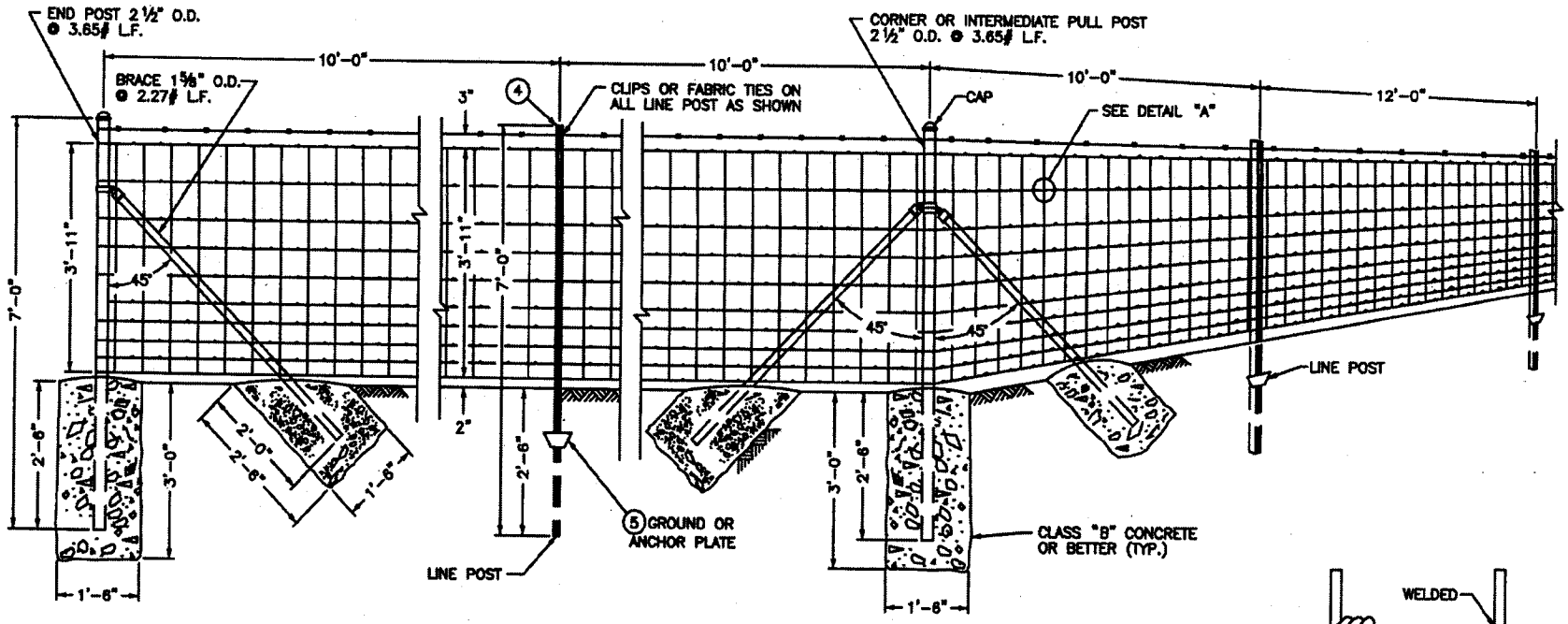
CHAIN LINK GATE

STANDARD DRAWING NO. 310

APPROVED: URBAN COUNTY ENGINEER — DATE 5/1/08

COMMISSIONER — DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



RIGHT-OF-WAY FENCE

NOTES:

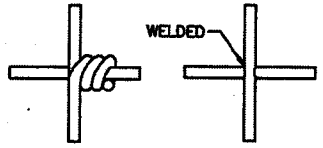
1. WOVEN-WIRE USED FABRIC IN RIGHT-OF-WAY FENCE SHALL BE EITHER ALUMINUM-COATED STEEL NO. 1047-6-9 OR ZINC-COATED STEEL NO. 1047-6-9.
2. ALL FENCE FITTINGS SHALL COMPLY WITH ASTM F 626.
3. O.D. DEPICTED FOR TUBULAR POSTS IS NOMINAL - ASTM F 1083 SHALL GOVERN.

(4) STUDDED "T" POST AT 1.33 LBS. PER FOOT.

- OR -

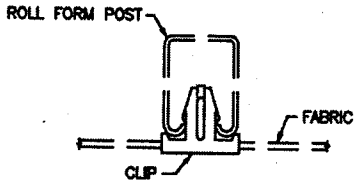
ROLL FORM POST AT 1.35 LBS. PER FOOT. (SEE DETAIL)

(5) NOT REQUIRED FOR ROLL FORM POST.

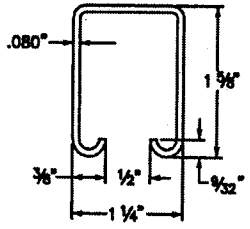


ALTERNATE METHODS OF SECURING VERTICAL STAY WIRE TO THE HORIZONTAL WIRE OF THE FABRIC.

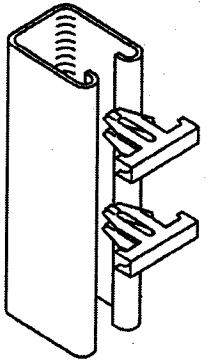
DETAIL "A"



PLAN VIEW OF CLIP
INSTALLED IN ROLL FORM POST



PLAN VIEW OF
ROLL FORM POST



ISOMETRIC EXPLODED VIEW
OF ROLL FORM POST AND CLIPS

CLIPS SHALL BE SPRING STEEL ALUMINUM - FINISHED

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

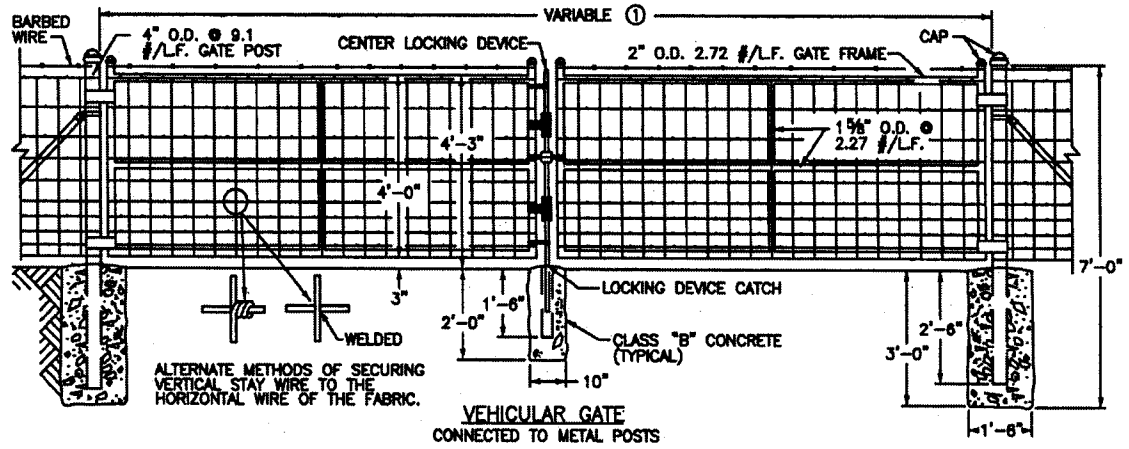
WOVEN WIRE
RIGHT-OF-WAY FENCE
TYPE 1

STANDARD DRAWING NO. 312

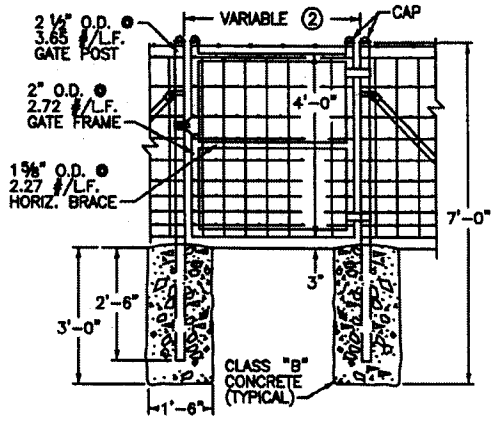
APPROVED 5/1/08
DIRECTOR
COMMISSIONER

DATE

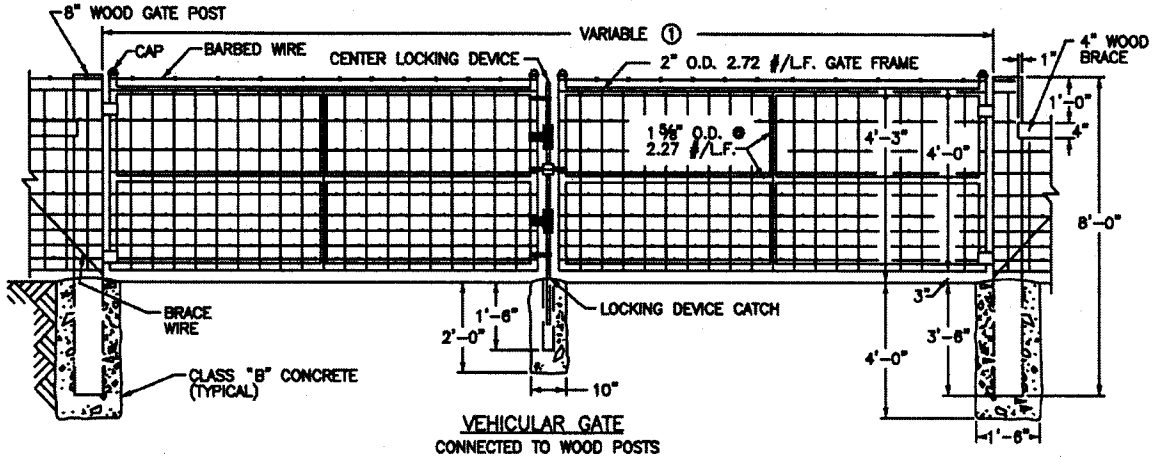
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



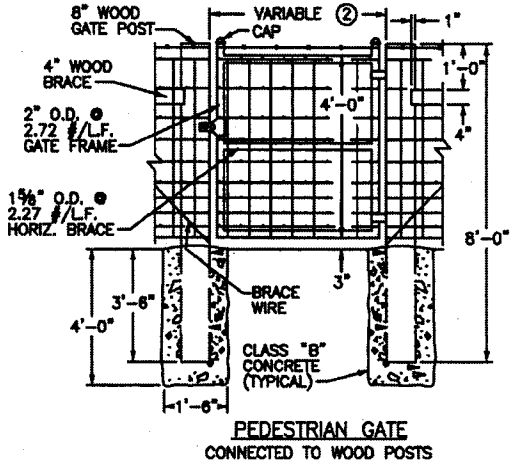
VEHICULAR GATE
CONNECTED TO METAL POSTS



PEDESTRIAN GATE
CONNECTED TO METAL POSTS



VEHICULAR GATE
CONNECTED TO WOOD POSTS



PEDESTRIAN GATE
CONNECTED TO WOOD POSTS

NOTES:

BASIS OF PAYMENT:

THE CONTRACT UNIT PRICE FOR WOVEN WIRE GATES SHALL BE:

① FEET WIDE SINGLE VEHICULAR WOVEN WIRE GATE
① FEET WIDE DOUBLE VEHICULAR WOVEN WIRE GATE
② FEET WIDE PEDESTRIAN WOVEN WIRE GATE
① – ② AS SHOWN ON PLANS

CONSTRUCTION REQUIREMENTS:

FABRIC TIE WIRES SHALL BE SPACED 12 INCHES ON CENTERS. THE CONTRACTOR IS NOT TO ORDER GATES UNTIL THEIR NECESSITY AND LOCATION HAVE BEEN CERTIFIED BY THE ENGINEER.

MATERIALS:

WOVEN-WIRE FABRIC USED IN THE GATES SHALL EITHER BE ALUMINUM-COATED STEEL NO. 1047-6-9 OR ZINC-COATED STEEL NO. 1047-6-9.

O.D. DEPICTED FOR TUBULAR POSTS IS NOMINAL – ASTM F 1083 SHALL GOVERN.

GATES SHALL HAVE HEAVY PRESSED STEEL CORNERS SECURELY RIVETED OR SHALL BE MACHINE NOTCHED AND ELECTRICALLY WELDED SO AS TO BE RIGID AND WATER TIGHT. ALL WELDED JOINTS SHALL BE CLEANED AND PAINTED WITH TWO (2) COATS OF ALUMINUM PAINT.

GENERAL:

① 6' TO 13' WIDTH FOR SINGLE GATE AND 12' TO 26' WIDTH FOR DOUBLE GATE.
② 4' TO 6' WIDTH

NO.	DATE	REVISION DESCRIPTION	BY

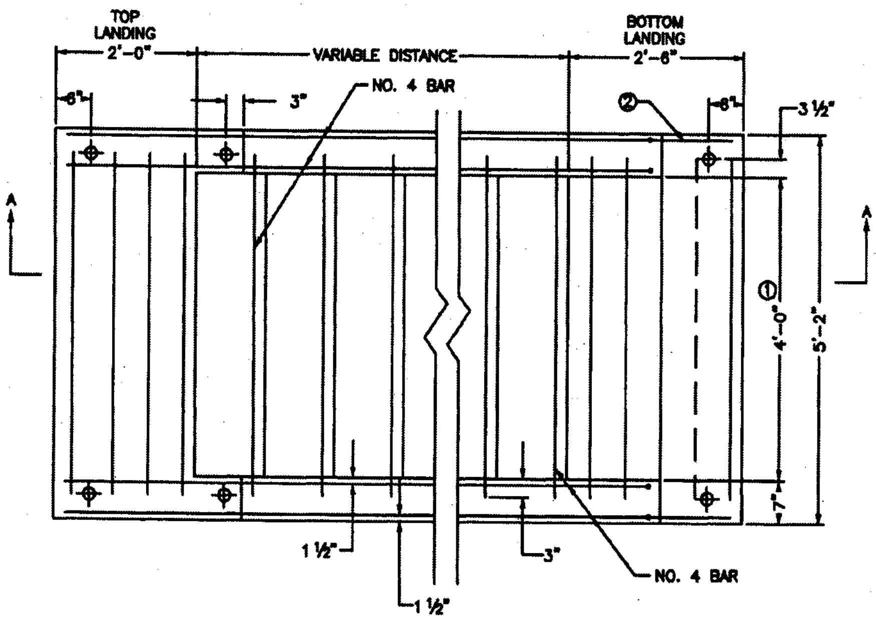
DIVISION OF ENGINEERING

WOVEN WIRE GATES

STANDARD DRAWING NO. 314

APPROVED: 5/1/08
URBAN COUNTY ENGINEER / COMMISSIONER — DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



PLAN

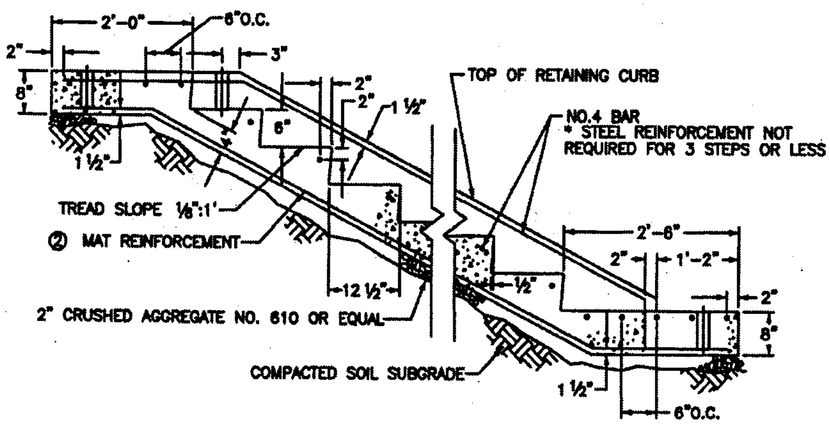
NOTES:

1. MAT REINFORCEMENT (2)
   NO. 4 REINFORCEMENT BARS, LONG. BARS 6"O.C. AND TRANSV. BARS 12"O.C., MIN. GRADE 40, OR WELDED WIRE FABRIC–6X6–W4XW4, 58 LBS./100 SQ. FT.
2. NO. 4 REINFORCEMENT BARS ADDITIONALLY AS SHOWN.
3. ROUND ALL EXPOSED EDGES AND CORNERS ¼" R.
4. MAT REINFORCEMENT IN BOTTOM OF THE STEPS SHALL BE WIRE FABRIC OR BAR MAT (2).
5. HANDRAIL SHALL BE REQUIRED WITH THREE OR MORE STEPS.

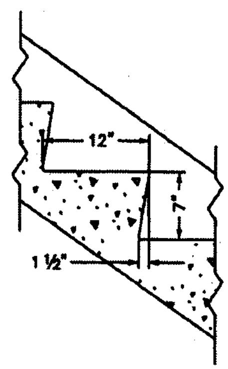
TABLE OF QUANTITIES

SLOPE	LOCATION	ADDITIONAL NO. 4 BAR REINF. (LBS)		MAT REINFORCEMENT WIRE FABRIC (SQ.FT.)		MAT REINFORCEMENT BAR MAT (LBS)		CU. YDS. CLASS "A" CONCRETE	
		4' WIDTH	(1)	4' WIDTH	(1)	4' WIDTH	(1)	4' WIDTH	(1)
2:1	BOTTOM LANDING	23.547	3.340	11.776	2.375	27.388	5.177	0.337	0.059
	INTERMEDIATE STEP	8.015	1.336	5.991	1.208	12.191	2.283	0.16	0.025
	TOP LANDING	22.483	3.340	9.504	1.917	20.708	3.897	0.265	0.051
1½:1	BOTTOM LANDING	23.603	3.340	12.602	2.542	28.613	5.400	0.38	0.062
	INTERMEDIATE STEP	7.431	1.336	5.268	1.063	11.119	2.088	0.17	0.027
	TOP LANDING	22.545	3.340	9.710	1.958	21.014	3.952	0.281	0.054

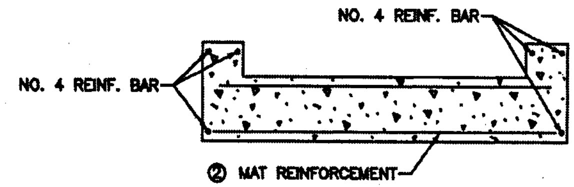
(1) APPROXIMATE QUANTITY TO ADD FOR EACH ADDITIONAL FOOT OF WIDTH OVER 4'-0".



SECTION A–A 2:1 SLOPE



STEP DETAIL FOR 1 ½:1 SLOPE



STEP CROSS SECTION

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

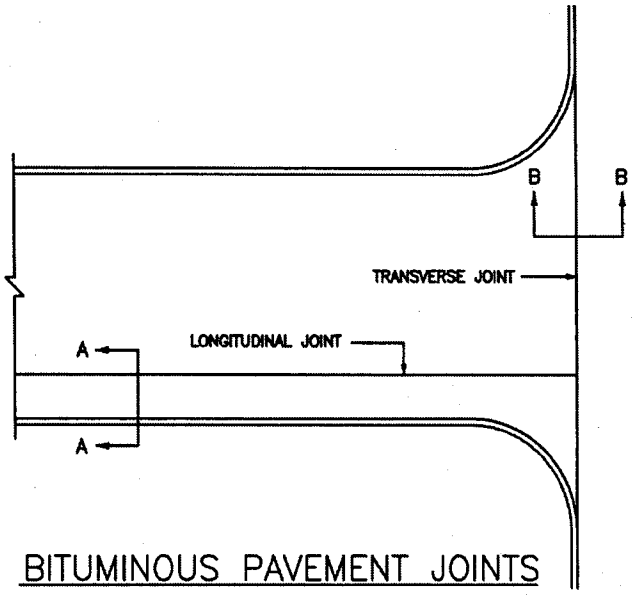
CONCRETE STEPS

STANDARD DRAWING NO. 315

APPROVED: URBAN COUNTY ENGINEER 5/1/08

COMMISSIONER DATE

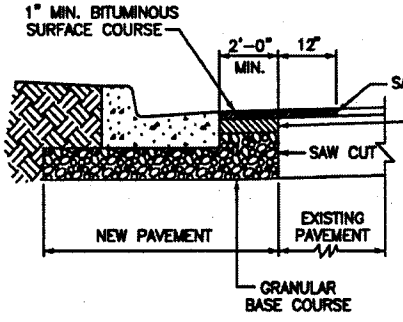
LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



BITUMINOUS PAVEMENT JOINTS

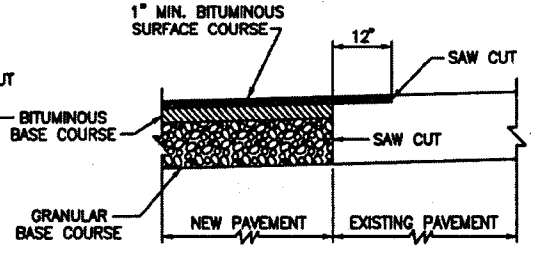
NOTES:

1. ALL SAW-CUTS SHALL BE NEAT AND STRAIGHT.
2. IMMEDIATELY BEFORE LAYING NEW BITUMINOUS COURSES, ALL SAW CUT EDGES SHALL BE CLEANED OF DUST AND DEBRIS AND SPRAYED WITH A BITUMINOUS TACK COAT.
3. EDGE KEY SHALL NOT BE REQUIRED IF BOTH EXISTING AND NEW PAVEMENT ARE TO RECEIVE AN OVERLAY AS PART OF THIS CONTRACT.



SECTION A–A

LONGITUDINAL EDGE KEY



SECTION B–B

TRANSVERSE EDGE KEY

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

EDGE KEY

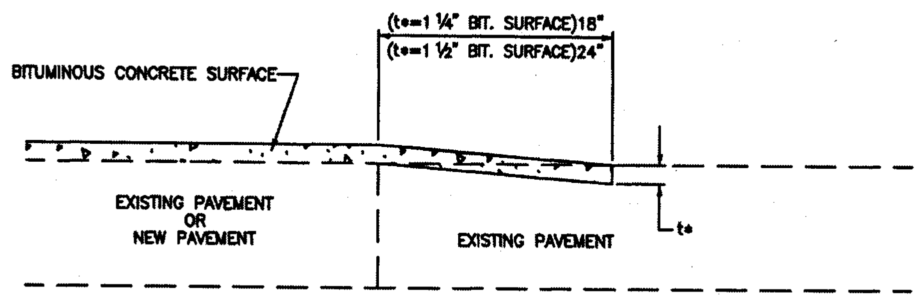
STANDARD DRAWING NO. 318

APPROVED 5/1/08

URBAN COUNTY ENGINEER / COMMISSIONER DATE

DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



EDGE KEY

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

TYPICAL EDGE KEY
FOR
MINIMUM OVERLAYS,
SHORT PROJECTS,
LOW SPEED

STANDARD DRAWING NO. 319

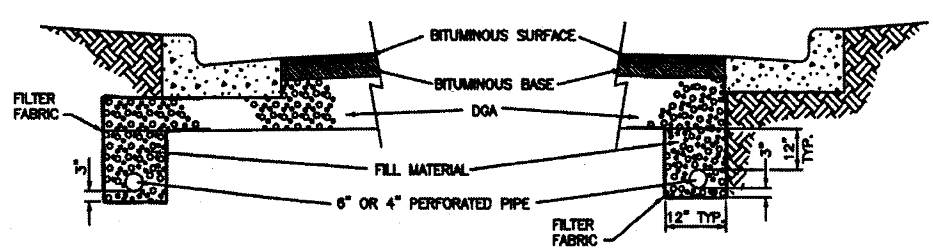
APPROVED: 5/1/08

URBAN COUNTY ENGINEER / DATE

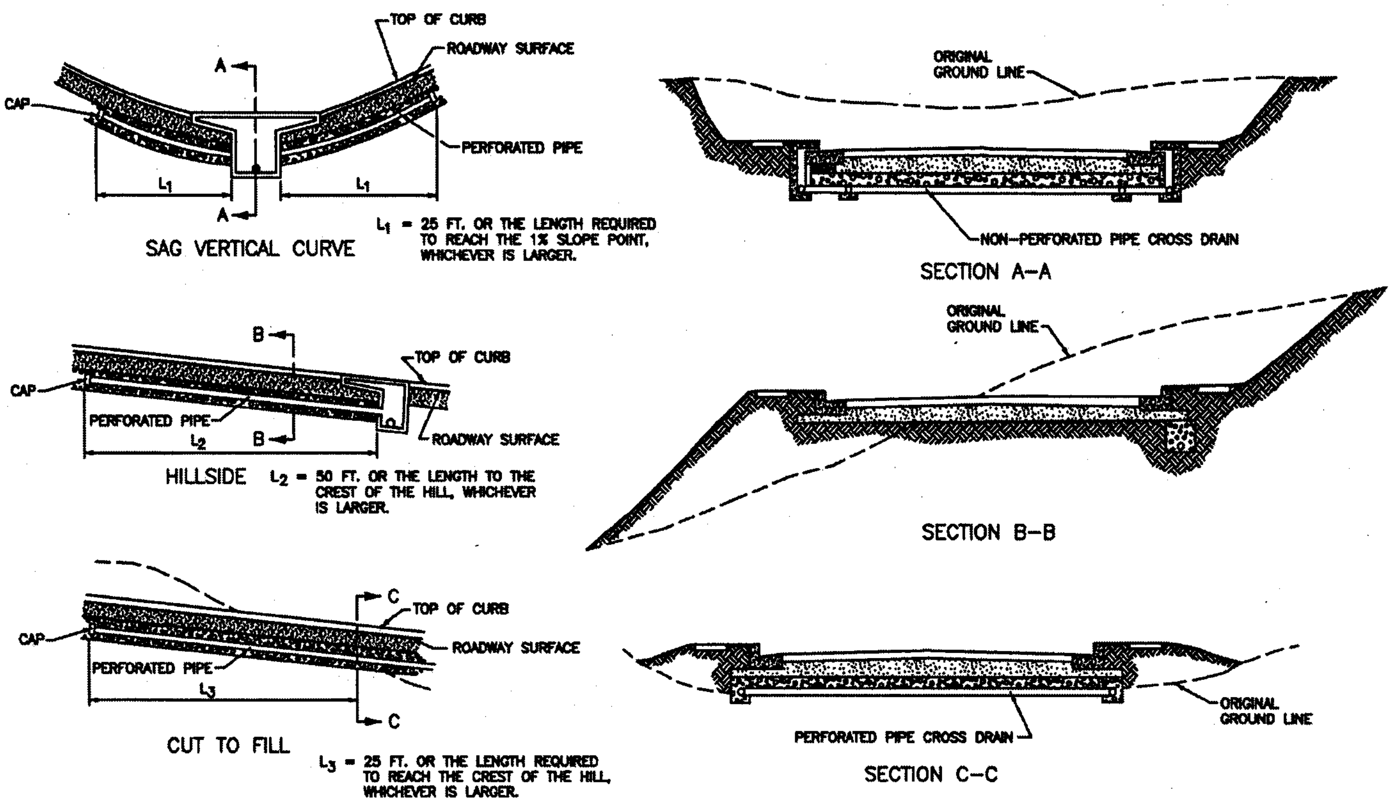
COMMISSIONER / DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

TYPICAL SECTION



TYPICAL SUBGRADE DRAINAGE LOCATIONS



NOTES:

1. SUBGRADE DRAINAGE, AS DEPICTED, IS INTENDED FOR USE WITH THE SURFACING PHASE OF CONSTRUCTION, AND SHALL BE INSTALLED ONLY AFTER THE SUBGRADE HAS BEEN COMPLETED, AND PRIOR TO CONSTRUCTING PAVING MATERIALS.
2. THE CAP SHALL BE A STANDARD MANUFACTURED ITEM FURNISHED BY THE PIPE SUPPLIER.
3. TERMINATE PERFORATED PIPE IN CATCH BASIN AT AN ELEVATION WHICH PROVIDES POSITIVE DRAINAGE (MAY REQUIRE ADDITIONAL OPENING IN CATCH BASIN WALL).
4. BACKFILL TO CONSIST OF NO. 78, 8, 9M COARSE AGGREGATE OR NATURAL SAND. THE FILL MATERIAL SHALL BE THOROUGHLY COMPACTED IN LAYERS NOT EXCEEDING 6 INCHES LOOSE MEASUREMENT.
5. CONNECTIONS TO DRAINAGE STRUCTURES AND PIPE TERMINI SHALL BE NON-PERFORATED PIPE MEETING THE REQUIREMENTS OF THE PERFORATED PIPE EXCEPT FOR PERFORATIONS.
6. ALL RAISED NON-PAVED MEDIANS SHALL HAVE SUBGRADE DRAINAGE ASSOCIATED WITH CURB AND GUTTER.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

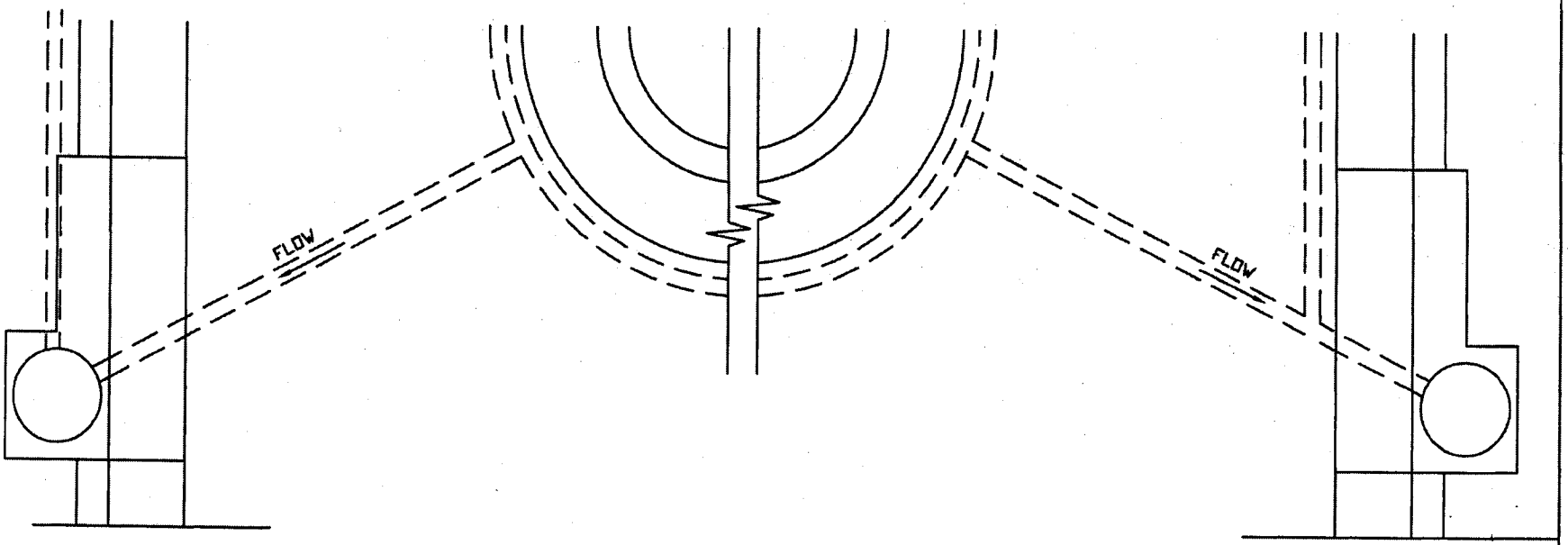
PERFORATED PIPE
SUBGRADE DRAINAGE
ALONG ROADWAY

STANDARD DRAWING NO. 320

APPROVED: URBAN COUNTY ENGINEER — DATE 5/1/08

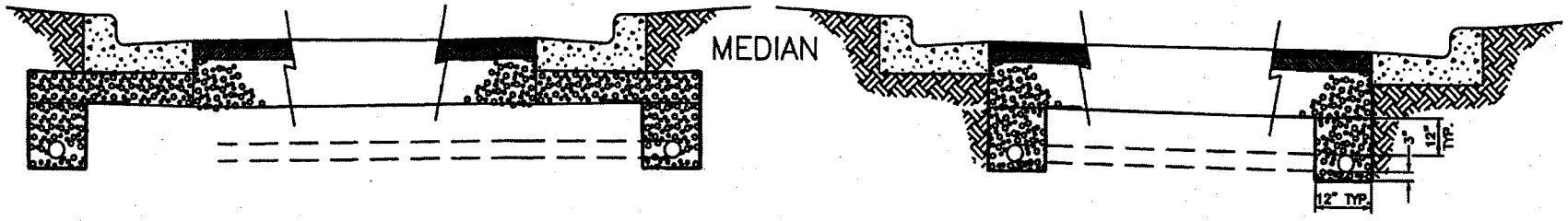
COMMISSIONER — DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



CURB ON PAVEMENT

CURB ON SOIL



TYPICAL SECTION

1. For installation of perforated pipe see Detail Sheet #320
2. Perforated pipe shall completely surround all islands
3. For islands greater than 50" long or wide, perforated pipe surrounding island and leading to the curb inlet shall be 6" diameter.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

PERFORATED PIPE SUBGRADE DRAINAGE FOR RAISED NON-PAVED MEDIANS

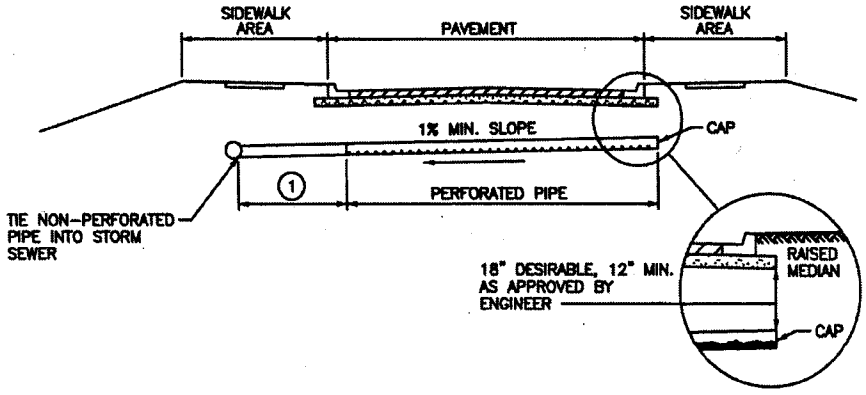
STANDARD DRAWING NO. 320-1

APPROVED 5/1/02

DIRECTOR

COMMISSIONER DATE

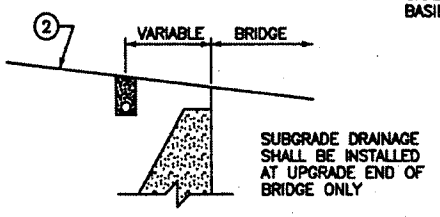
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



NOTES:

1. SUBGRADE DRAINAGE, AS DEPICTED, IS INTENDED FOR USE WITH THE ROADWAY CONSTRUCTION PHASE AND SHALL BE INSTALLED ONLY AFTER THE SUBGRADE HAS BEEN COMPLETED, AND PRIOR TO PLACING PAVING MATERIALS.
2. SUBGRADE DRAINAGE WILL NOT BE REQUIRED WHEN:
   A. AGGREGATE SUBGRADE OR NATURAL BANK GRAVEL IS SPECIFIED.
   B. POROUS OR FREE DRAINING SUBGRADES ARE EVIDENT.
   C. DIRECTED BY THE ENGINEER.
3. THE CAP SHALL BE A STANDARD MANUFACTURED ITEM FURNISHED BY THE PIPE SUPPLIER.
4. FLOW SHALL BE DIRECTED TOWARD THE FILL SIDE OF THE ROADWAY WHEN POSSIBLE.
5. IF ROCK IS ENCOUNTERED WITHIN 24" OF SUBGRADE, PERFORATED PIPE IS REQUIRED THE FULL LENGTH OF ROCK. POSITIVE OUTLET IS REQUIRED.
6. A MIN. OF 50' OF PERFORATED PIPE IS REQUIRED UPHILL FROM BASINS ON GRADE AND 25' OF PERFORATED PIPE IS REQUIRED EACH WAY FROM SAG BASINS.

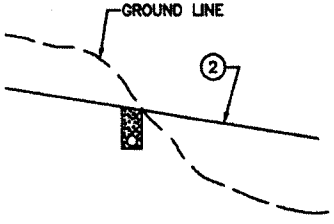
SAG VERTICAL CURVES



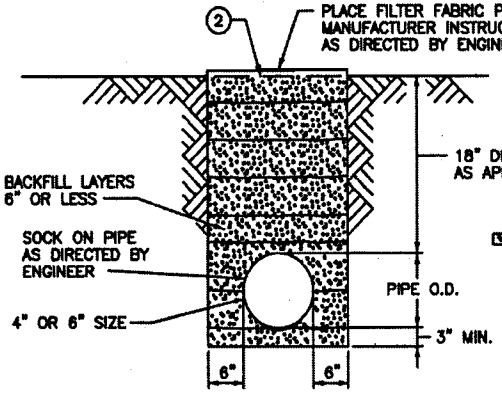
BRIDGES

(1) APPROXIMATELY 8 TO 12 FEET OF PIPE AT THE OUTLET SHALL BE NON-PERFORATED PIPE MEETING THE REQUIREMENTS OF THE PERFORATED PIPE, EXCEPT FOR PERFORATIONS.

(2) SUBGRADE ELEVATION



CUT TO FILL



TRENCH DETAIL

(3) – NO. 78, 8, OR 9M COARSE AGGREGATE. THE FILL MATERIAL SHALL BE THOROUGHLY COMPACTED IN LAYERS NOT EXCEEDING 6 INCHES LOOSE MEASUREMENT.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

PERFORATED PIPE FOR SUBGRADE DRAINAGE

STANDARD DRAWING NO. 321

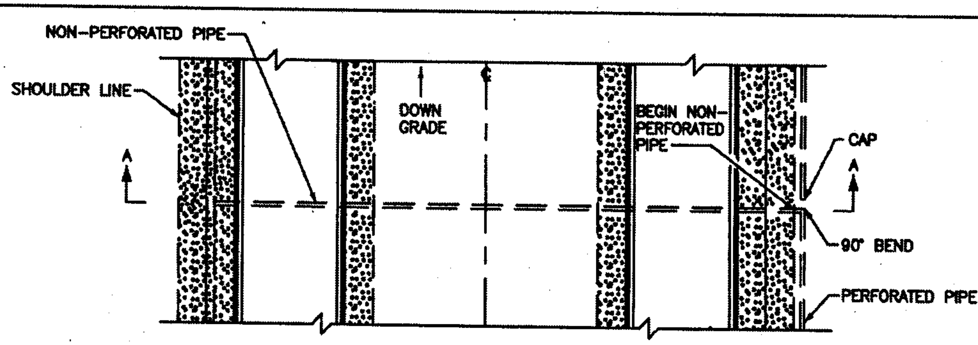
APPROVED: DATE 5/1/08

URBAN COUNTY ENGINEER

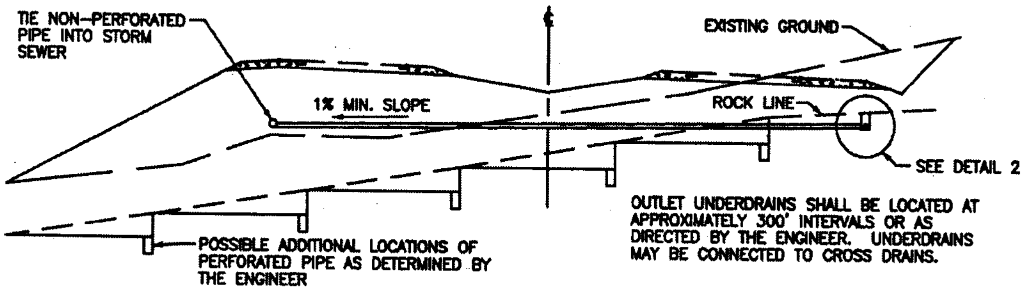
COMMISSIONER DATE 5/1/08

TYPICAL SUBGRADE DRAINAGE LOCATIONS

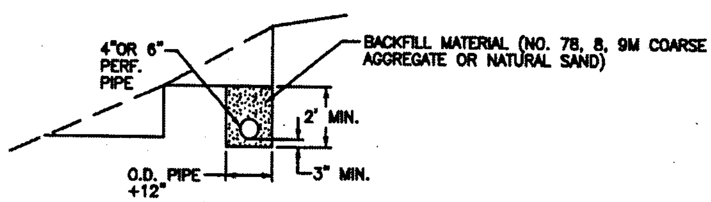
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



PLAN VIEW



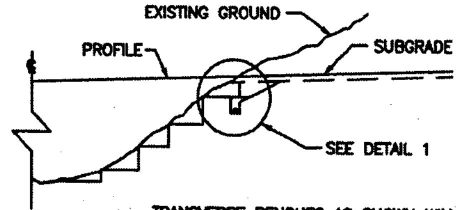
SECTION A–A



DETAIL 2

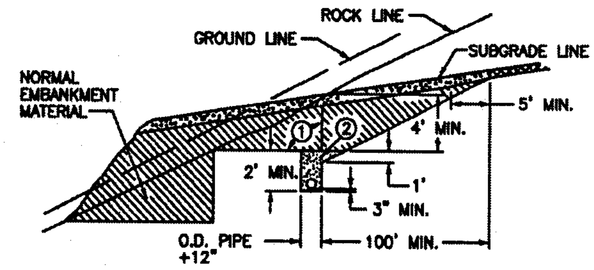
DETAIL FOR LONGITUDINAL UNDERDRAINS

DETAIL FOR TRANSVERSE UNDERDRAIN CUT TO FILL CONDITION



TRANSVERSE BENCHES AS SHOWN WILL BE REQUIRED WHERE PROPOSED GRADE INTERSECTS EXISTING GROUND.

1. UNDERDRAINS WILL BE REQUIRED ON UPGRADE BENCH. THIS PERFORATED PIPE UNDERDRAIN SHOULD BE PLACED IN ROCK OR SHALE FORMATIONS IF POSSIBLE. EXACT LOCATIONS TO BE DETERMINED BE THE ENGINEER ON CONSTRUCTION.
2. BENCHING AND UNDERDRAIN SHALL BE REQUIRED AT ALL TRANSITIONS FROM ROCK CUTS TO FILL WHETHER OR NOT UNDERDRAIN IS REQUIRED.
3. IF ROCK IS ENCOUNTERED WITHIN 24" OF SUBGRADE, PERFORATED PIPE IS REQUIRED THE FULL LENGTH OF ROCK. POSITIVE OUTLET IS REQUIRED.



DETAIL 1

SHEET NOTES: ○
① LIMITS OF FIRST BENCH.
② BACKFILL MATERIAL

NOTE:
1. ALL PERFORATED AND NON-PERFORATED PIPE SHALL COMPLY WITH ASTM & KDOT SPECIFICATIONS.

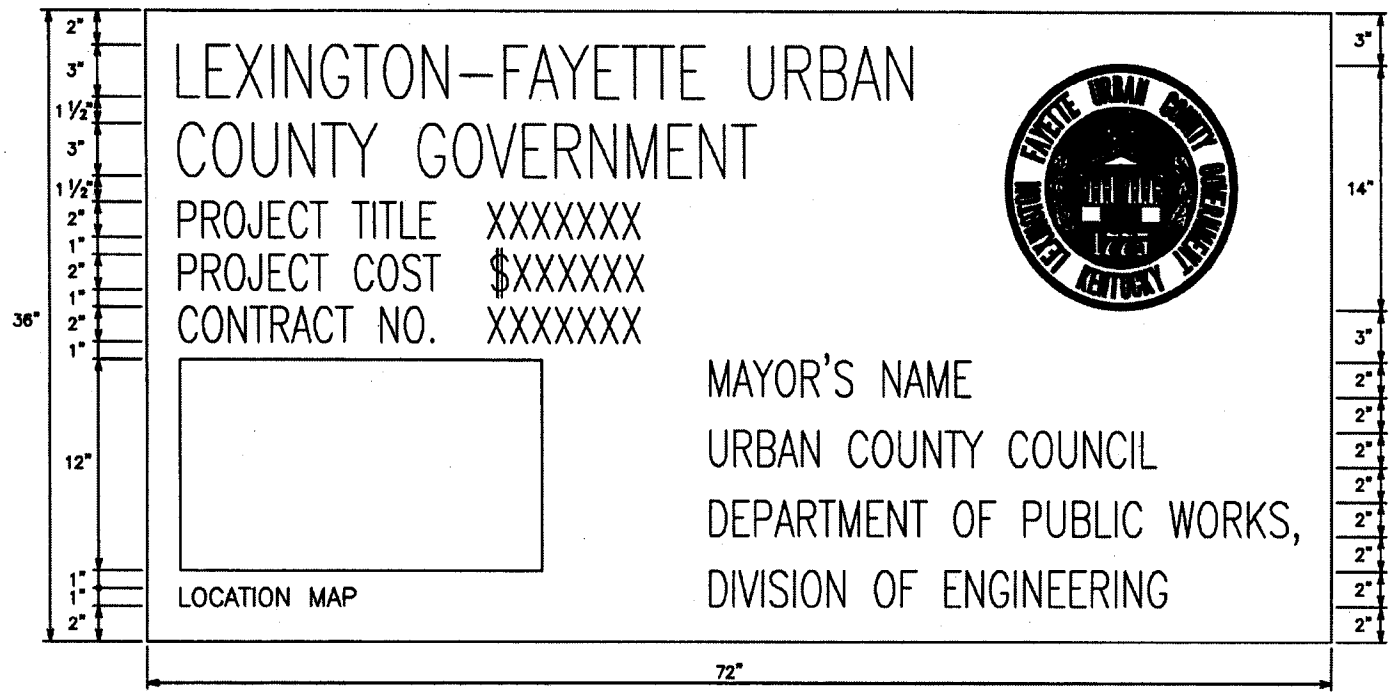
NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

PERFORATED PIPE UNDERDRAINS

STANDARD DRAWING NO. 322
APPROVAL: URBAN COUNTY ENGINEER 5/1/08 DATE
COMMISSIONER DATE

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT



NOTES:

THIS SIGN SHALL BE:

1. FURNISHED AND ERECTED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE, IN ADDITION TO THE NORMAL WARNING AND REGULATORY SIGNS.
2. OF GOOD QUALITY EXTERIOR PLYWOOD OR OTHER APPROVED MATERIAL.
3. PAINTED WITH SOLID BLUE LETTERS ON A WHITE BACKGROUND.
4. UPDATED AS NEEDED TO INDICATE THE APPROPRIATE MAYOR'S NAME.
5. FRAMED AND BRACED SO AS TO REMAIN VERTICAL AND PLAINLY VISIBLE TO THE TRAVELING PUBLIC.
6. ERECTED PRIOR TO STARTING CONSTRUCTION WORK.
7. ERECTED AT EACH END OF THE PROJECT AT LOCATIONS DIRECTED BY THE ENGINEER AND AT OTHER LOCATIONS SPECIFIED ON THE PLANS OR IN THE PROPOSAL.
8. KEPT CLEAN AND IN GOOD CONDITION FOR THE DURATION OF THE CONSTRUCTION AS DIRECTED BY THE ENGINEER.
9. THE COST SHOWN APPLIES ONLY TO THE PORTION OF PROJECT UNDER CONSTRUCTION IN A CONTINUOUS SECTION. IN THE EVENT THE PROJECT CONSISTS OF MORE THAN ONE CONTINUOUS SECTION THE COST SHOWN SHALL BE FOR THE PARTICULAR SECTION WHERE WORK IS IN PROGRESS.

NO.	DATE	REVISION DESCRIPTION	BY

DIVISION OF ENGINEERING

PUBLIC IMPROVEMENT SIGN

STANDARD DRAWING NO. 323

APPROVED
URBAN COUNTY ENGINEER — DATE 5/1/08
COMMISSIONER — DATE 5/1/08

LEXINGTON–FAYETTE URBAN COUNTY GOVERNMENT, DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

APPENDIX B

Lexington-Fayette Urban County Government
Erosion and Sediment Control Standard Drawings

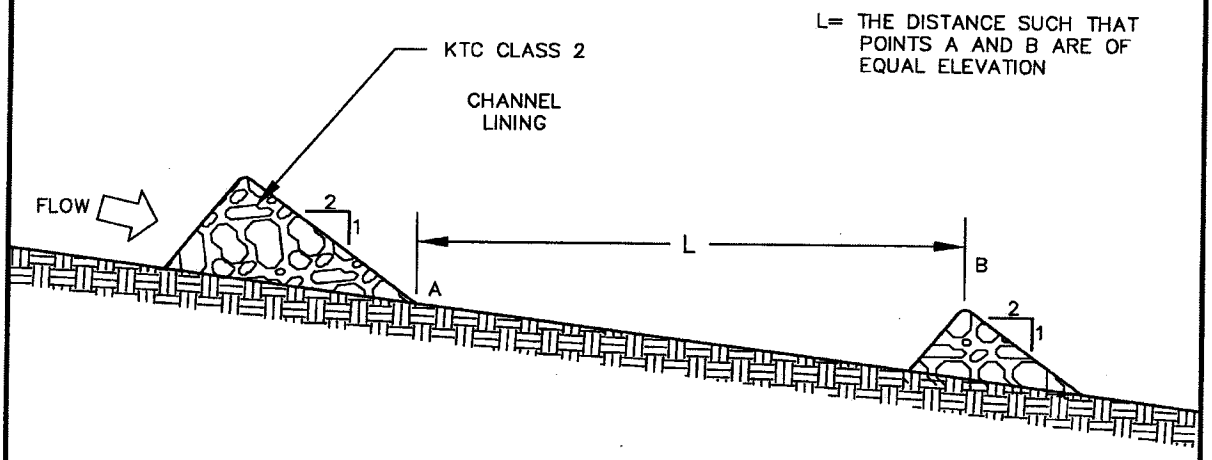
Lexington-Fayette Urban County Government
Erosion and Sediment Control Standard Drawings
Table of Contents

STORMWATER MANUAL

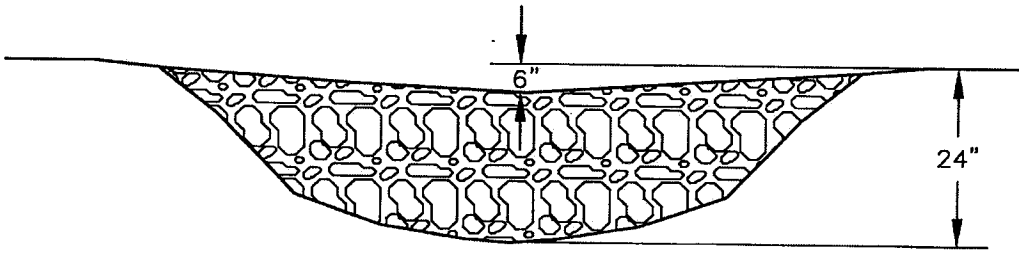
FIGURE 11–16

ROCK CHECK DAM

(EFFECTIVE DATE 8/29/11)



LONGITUDINAL SECTION SHOWING SPACING BETWEEN CHECK DAMS



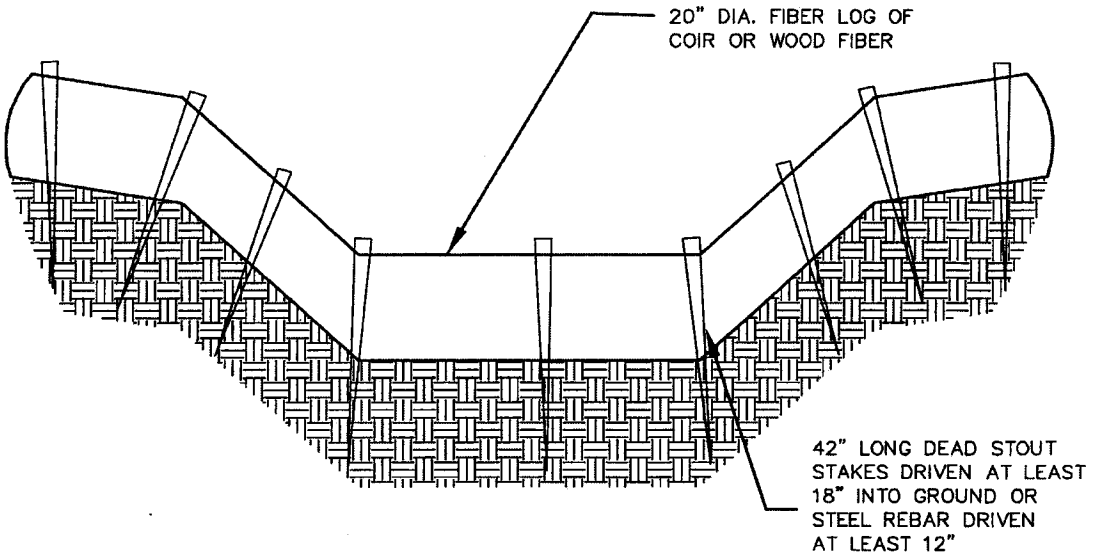
SECTION ACROSS CHANNEL

STORMWATER MANUAL

FIGURE 11–17

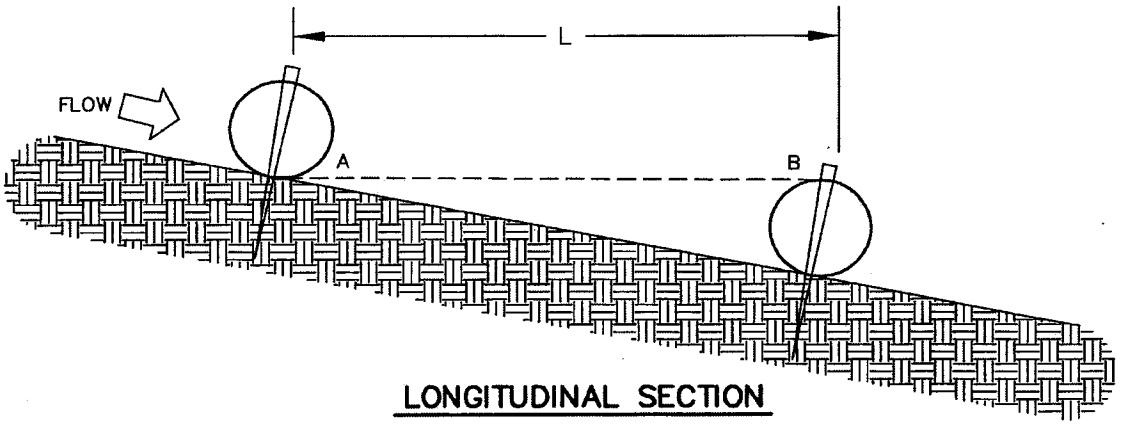
FIBER LOG CHECK DAM

(EFFECTIVE DATE 8/29/11)



SECTION ACROSS CHANNEL

STAKES SHALL BE SPACED NO FURTHER THAN 24" AND SHALL BE DRIVEN AT EACH SIGNIFICANT SLOPE BREAK AND WITHIN 6" OF EACH END.



LONGITUDINAL SECTION

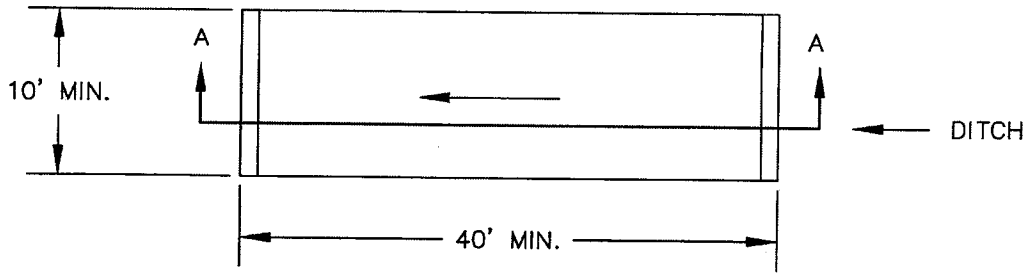
L = DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

STORMWATER MANUAL

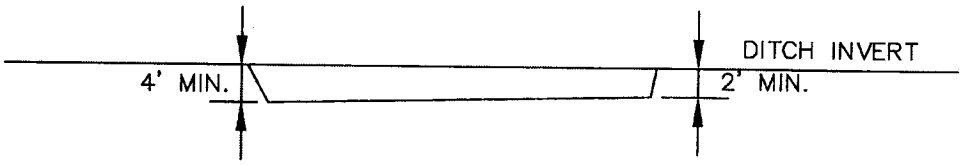
FIGURE 11–18

SEDIMENT TRAP

(EFFECTIVE DATE 8/29/11)



PLAN VIEW



SECTION A–A

NOTES:

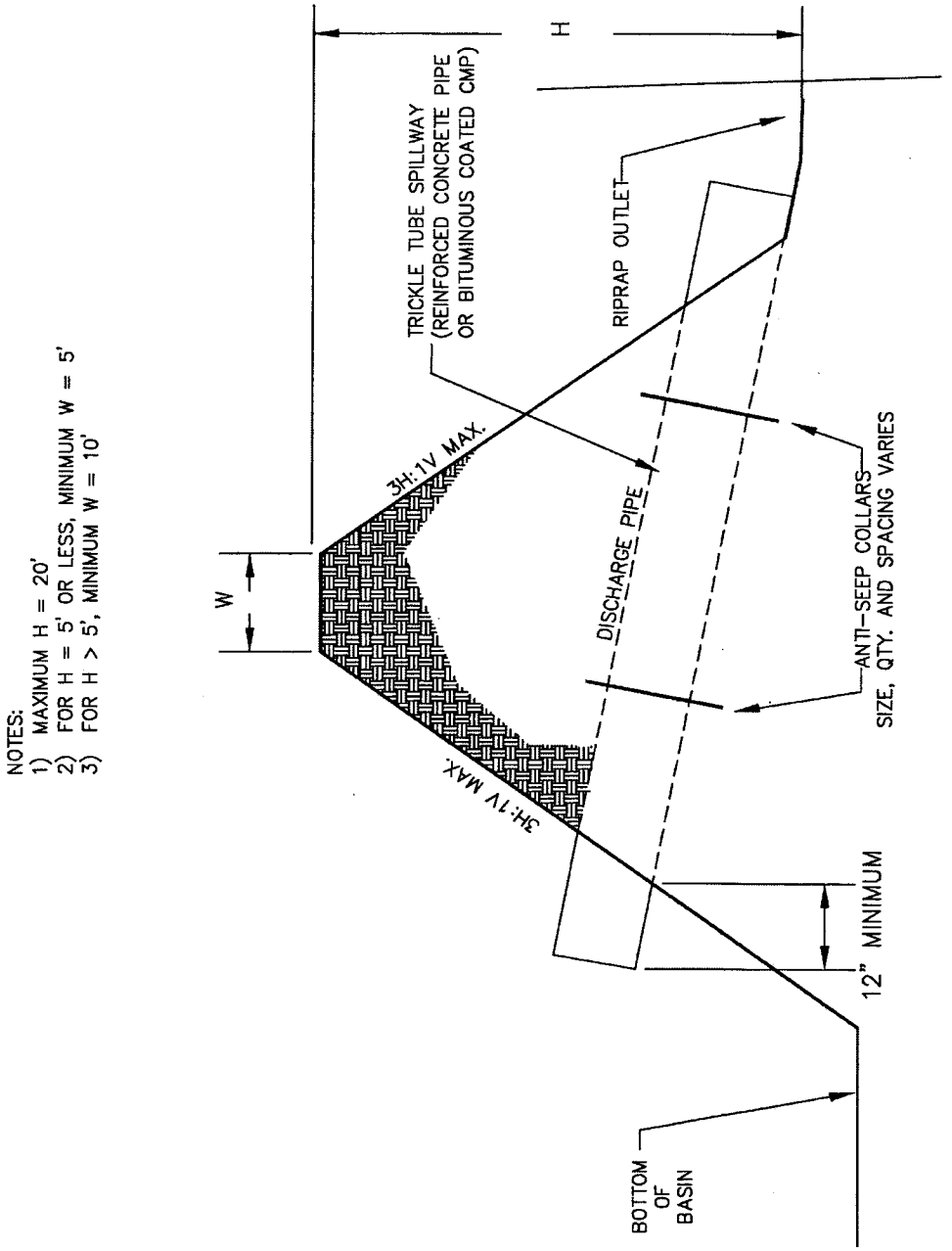
1) THE SIZE, SHAPE AND LOCATION OF TRAP MAY BE ADJUSTED FROM THAT SHOWN IN THE CONSTRUCTION PLANS, AS DIRECTED BY THE ENGINEER.
2) THE SEDIMENT TRAP MAY BE CONSTRUCTED AS DIRECTED BY THE ENGINEER AS LONG AS THE AREA AND DEPTH IS AT LEAST AS THAT INDICATED ON THE PLANS.
3) SEDIMENT TRAP SHALL BE CONSTRUCTED BY EXCAVATING THE BASIN IN NATURAL OR EXCAVATED CHANNELS. SEDIMENT DEPOSITS IN TRAP SHALL BE REMOVED EACH TIME THE TRAP IS APPROXIMATELY 50 PERCENT FILLED. WHEN THEIR USEFULNESS HAS ENDED, THE TRAPS SHALL BE REMOVED, SURPLUS MATERIAL DISPOSED OF AND THE ENTIRE DISTURBED AREA SHALL BE SEEDED AND PROTECTED, OR SODDED, AS DIRECTED. SEDIMENT TRAPS MAY REMAIN IN PLACE UPON COMPLETION OF THE PROJECT ONLY WHEN PERMITTED BY THE ENGINEER OR THE PLANS.

STORMWATER MANUAL

FIGURE 11–20

SEDIMENT POND PRINCIPAL SPILLWAY DETAIL

(EFFECTIVE DATE 8/29/11)



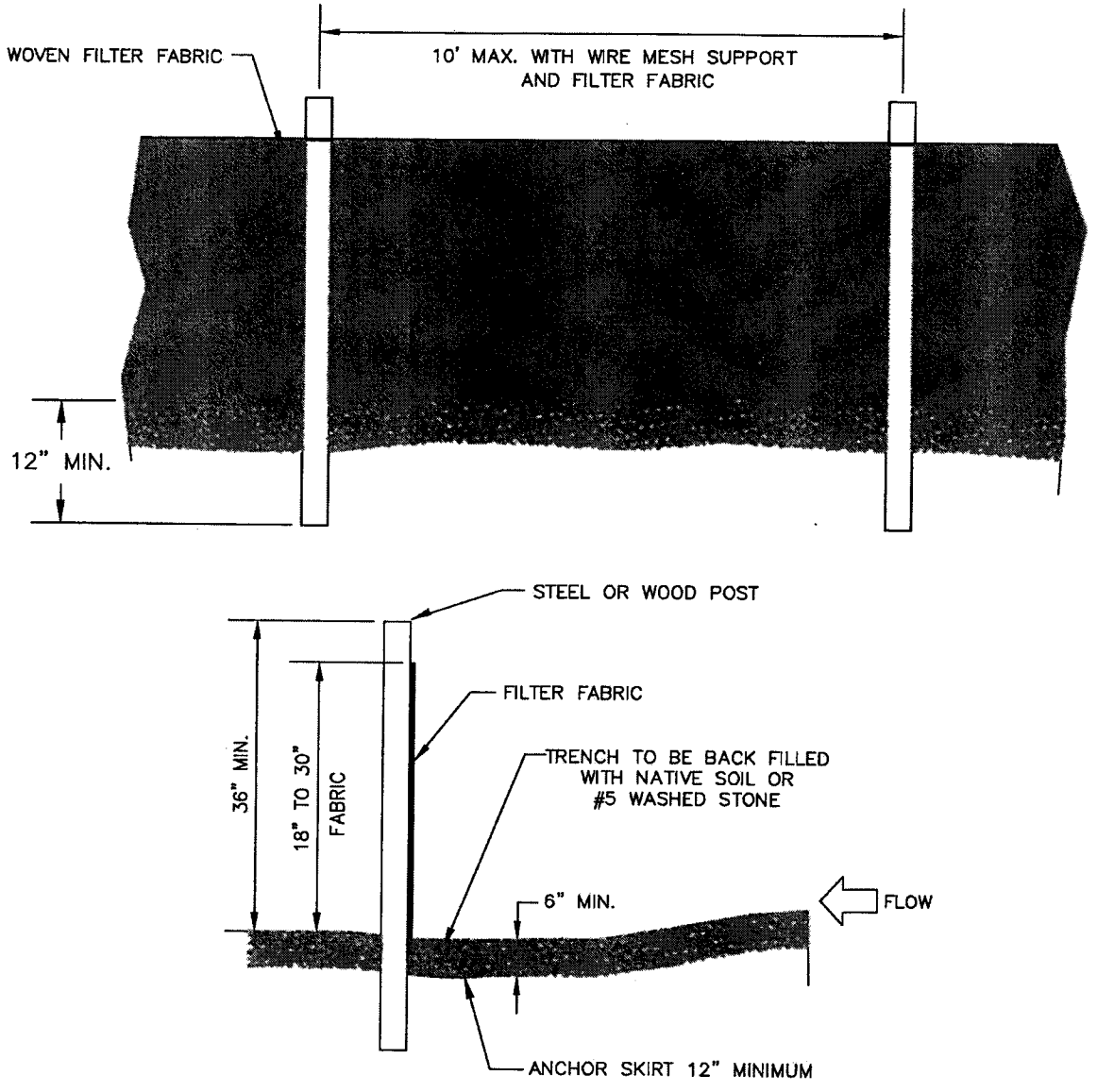
NOTES:
1) MAXIMUM H = 20'
2) FOR H = 5' OR LESS, MINIMUM W = 5'
3) FOR H > 5', MINIMUM W = 10'

STORMWATER MANUAL

FIGURE 11-21

TEMPORARY SILT FENCE

(EFFECTIVE DATE 8/29/11)



STORMWATER MANUAL

FIGURE 11–22

TEMPORARY SILT FENCE
GENERAL NOTES

(EFFECTIVE DATE 8/29/11)

GENERAL NOTES

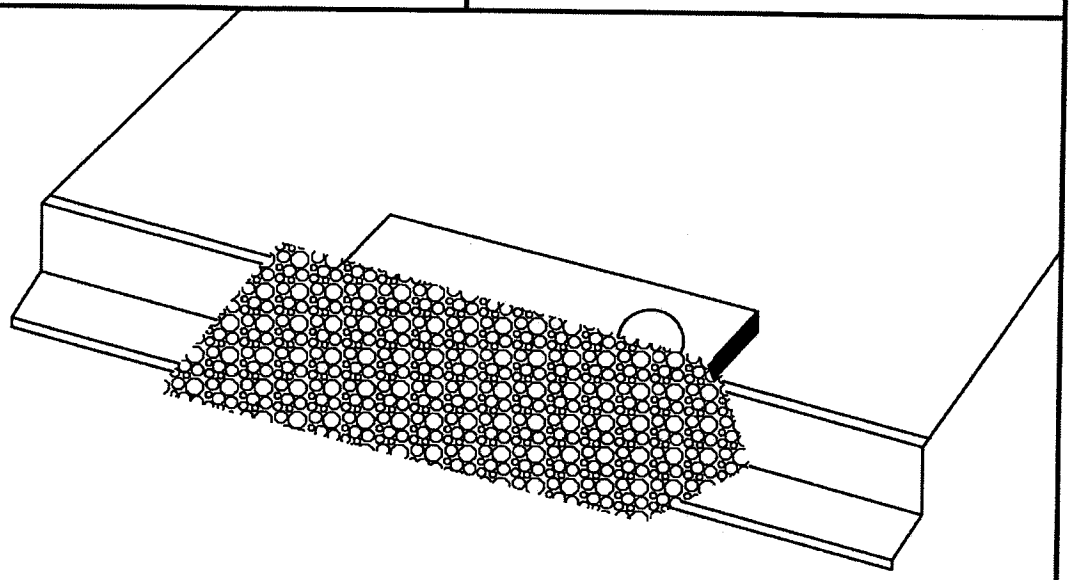
1. FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL AND CUT TO THE LENGTH OF THE BARRIER. WHEN JOINTS CANNOT BE AVOIDED, FILTER FABRIC SHALL BE SPLICED TOGETHER ONLY AT A POST WITH 3 FOOT MIN. OVERLAP, AND SECURELY SEALED.
2. POSTS SHALL BE SPACED AT 6 FOOT INTERVALS IN AREAS OF RAPID RUNOFF.
3. POSTS SHALL BE AT LEAST 5 FEET IN LENGTH.
4. STEEL POSTS SHALL HAVE PROJECTIONS FOR FASTENING WIRE AND FABRIC.
5. WOOD POSTS SHALL BE 2 INCHES BY 2 INCHES OR EQUIVALENT. STEEL POSTS SHALL BE 1.33 LBS PER LINEAR FOOT.
6. A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH IN LENGTH, WIRE TIES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
7. WASHED STONE SHALL BE USED TO BURY SKIRT WHEN SILT FENCE IS USED ADJACENT TO A CHANNEL, CREEK, OR POND.
8. TURN SILT FENCE UP SLOPE AT ENDS.

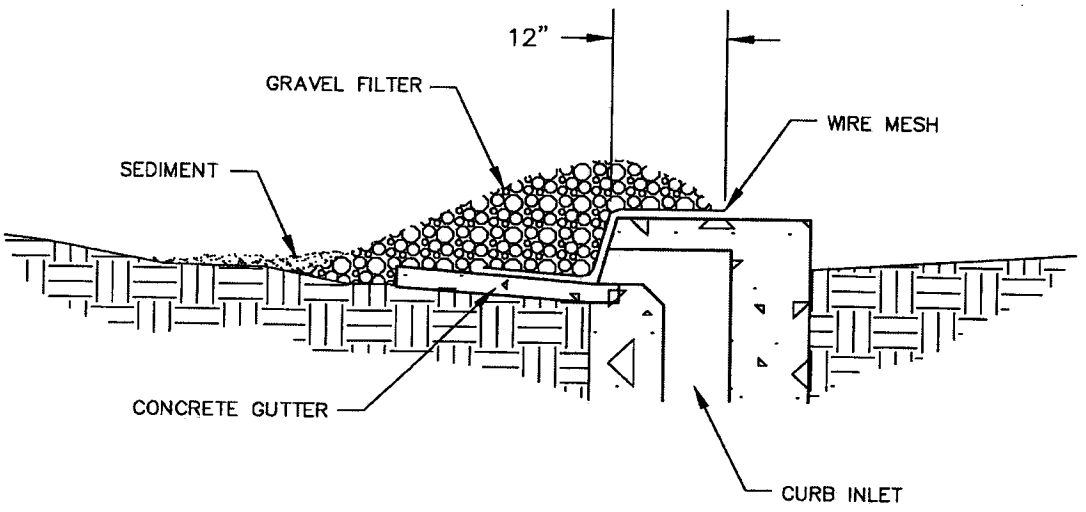
STORMWATER MANUAL

FIGURE 11–24

GRAVEL CURB INLET SEDIMENT FILTER

(EFFECTIVE DATE 8/29/11)



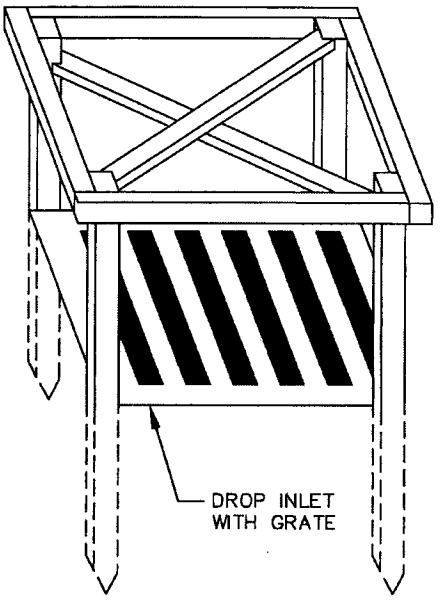


STORMWATER MANUAL

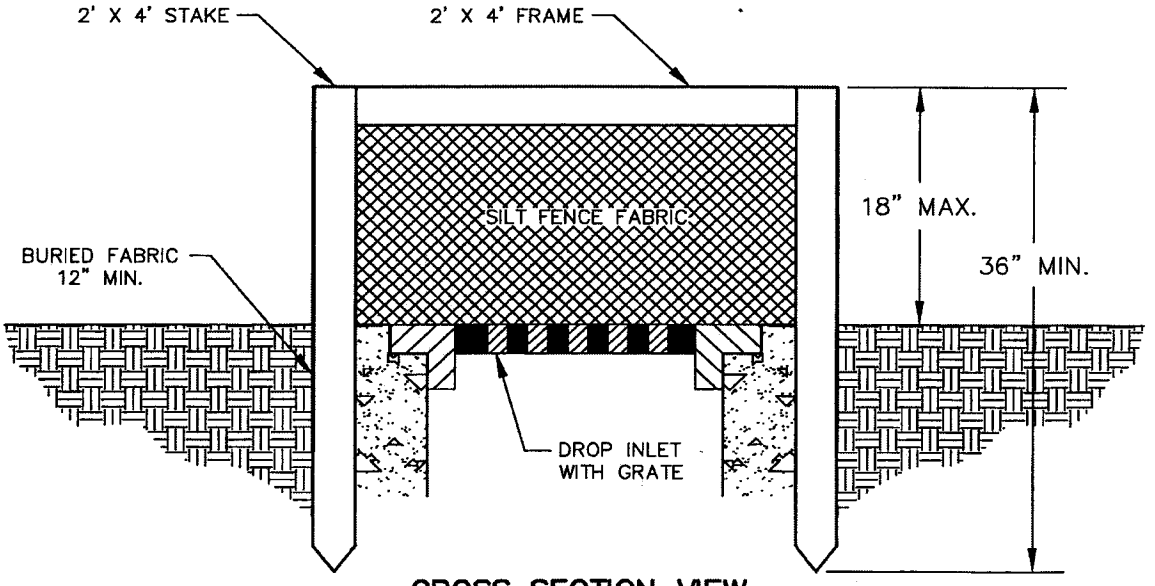
FIGURE 11–23

DROP INLET PROTECTION
USING SILT FENCE

(EFFECTIVE DATE 8/29/11)



ISOMETRIC VIEW OF
2 X 4 WOOD FRAME



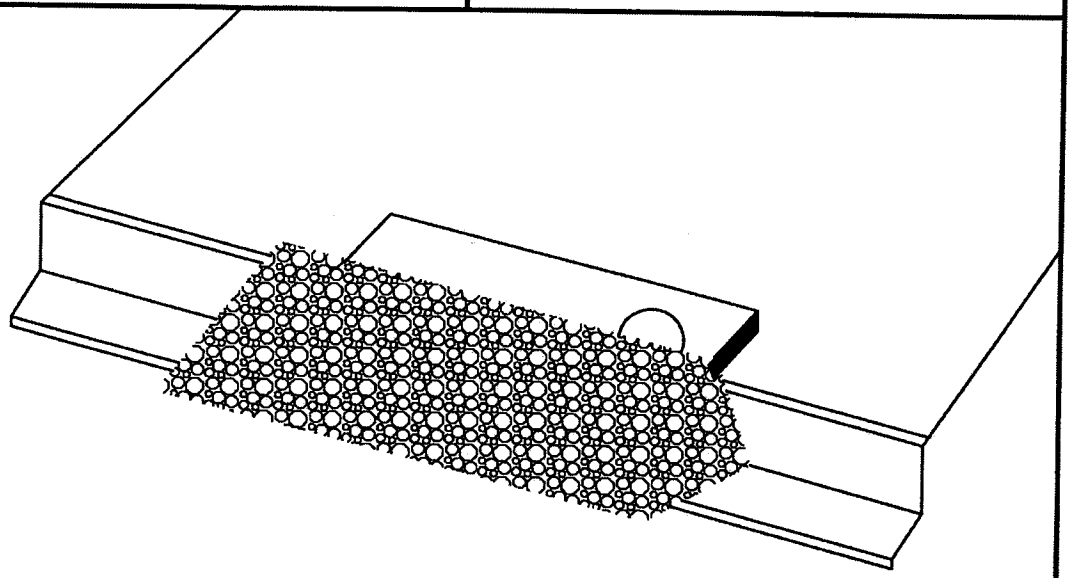
CROSS SECTION VIEW

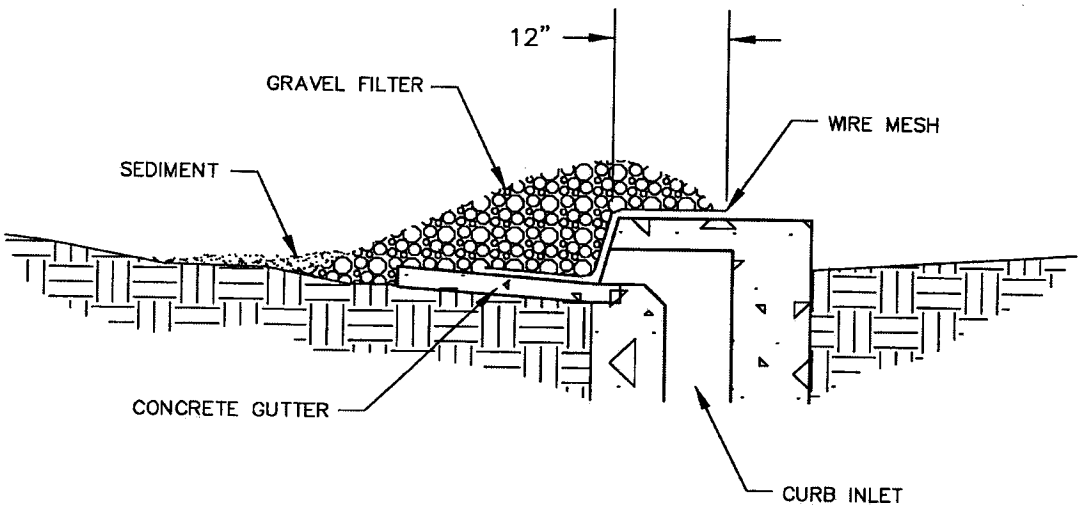
STORMWATER MANUAL

FIGURE 11–24

GRAVEL CURB INLET SEDIMENT FILTER

(EFFECTIVE DATE 8/29/11)



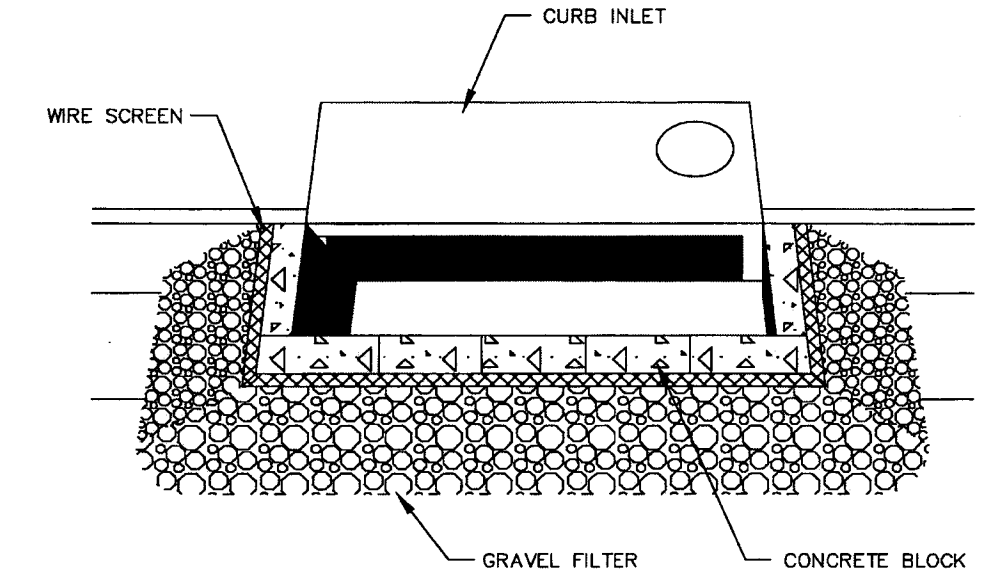


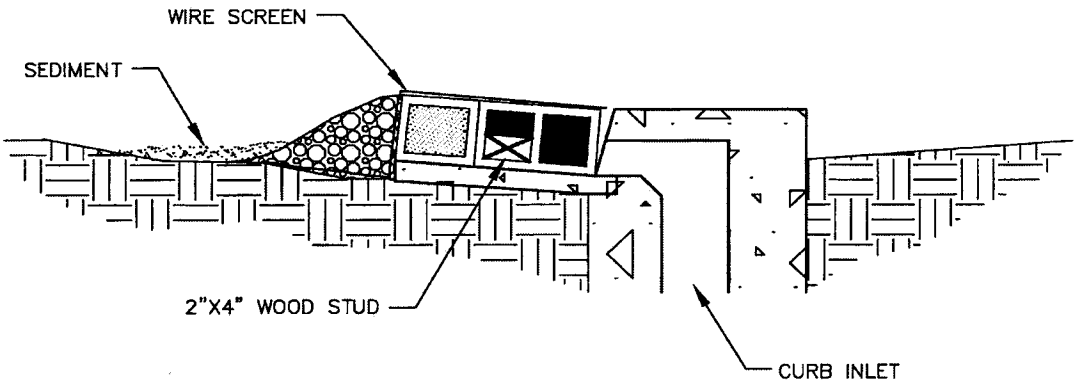
STORMWATER MANUAL

FIGURE 11–25

BLOCK AND GRAVEL CURB INLET SEDIMENT FILTER

(EFFECTIVE DATE 8/29/11)

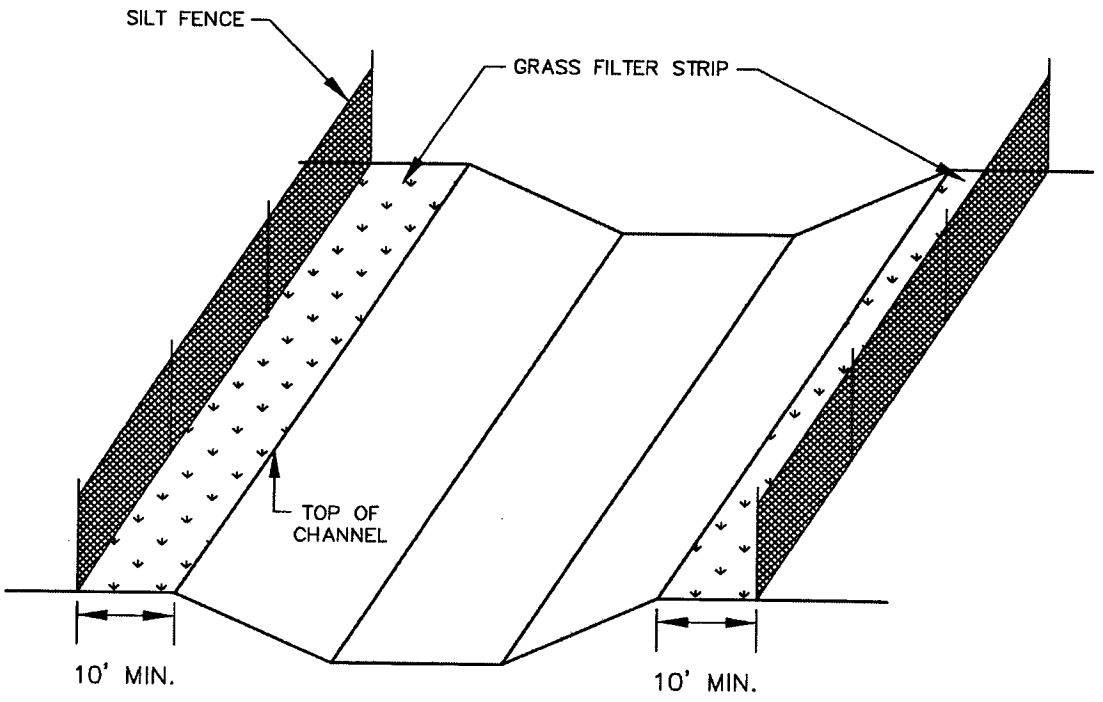




STORMWATER MANUAL

FIGURE 11–26
FILTER STRIP FOR
CONSTRUCTED CHANNEL

(EFFECTIVE DATE 8/29/11)

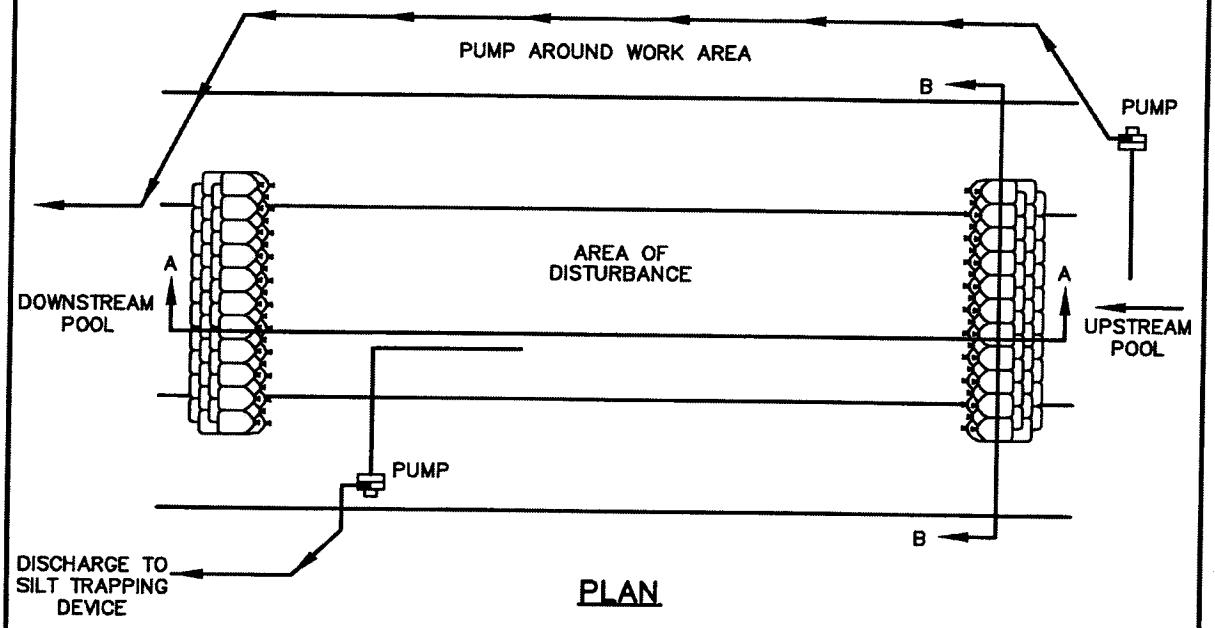


STORMWATER MANUAL

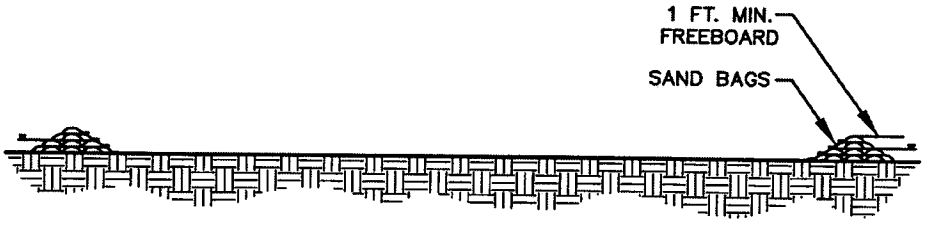
FIGURE 11-27

PUMP-AROUND FLOW DIVERSION

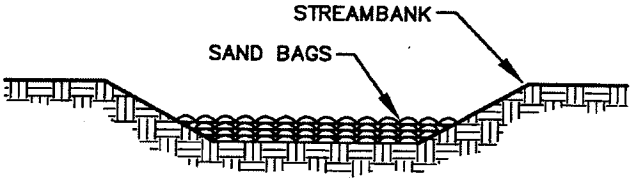
(EFFECTIVE DATE 8/29/11)



PLAN



SECTION A-A



SECTION B-B

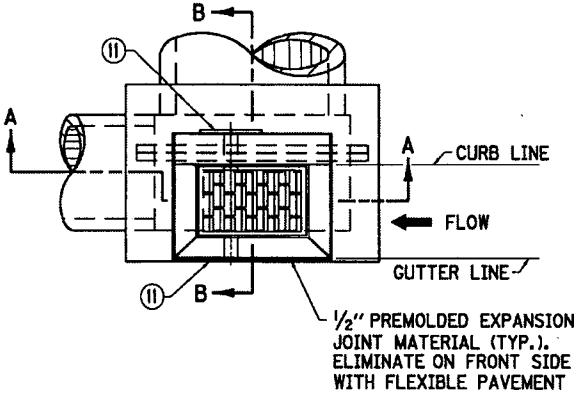
APPENDIX C

Kentucky Department of Highways
Standard Drawings

Kentucky Department of Highways - Standard Drawings
Table of Contents

All Kentucky Department of Highways Standard Drawings may be viewed on the Kentucky Transportation Cabinet web site:

http://transportation.ky.gov/highway-design/pages/2012-standard-drawings.aspx
or http://tinyurl.com/nylln8y



PLAN VIEW

NOTES

1. BOX INLET SHALL BE CONSTRUCTED IN TWO PHASES (BOTTOM AND TOP) AND MAY BE CONSTRUCTED IN A SAG VERTICAL CURVE OR ON GRADE.

   BID ITEM: DROP BOX INLET TYPE 13 (△) (✱)

   (△) = "S" (SAG CONDITION)

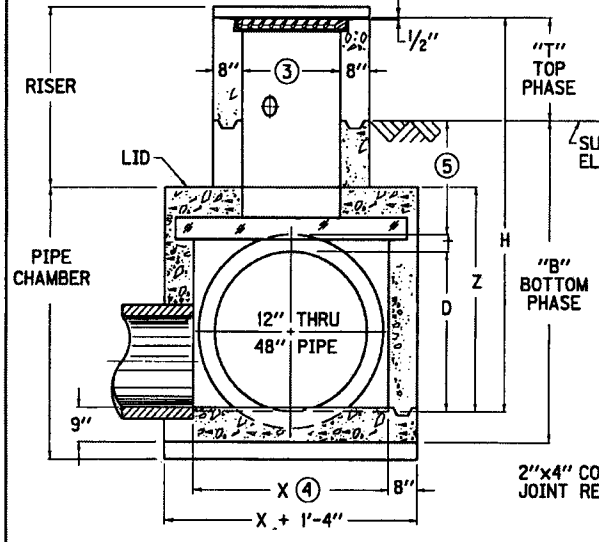
   (△) = "G" (GRADE CONDITION)

   (✱) = "T" (TOP PHASE)

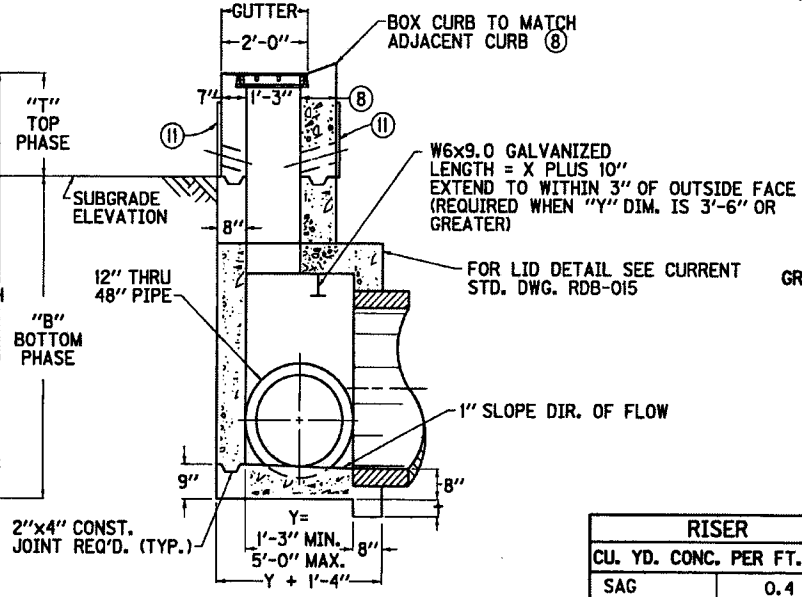
   (✱) = "B" (BOTTOM PHASE)

   WITH NO "T" OR "B" SUFFIX A COMPLETE INLET IS REQUIRED.

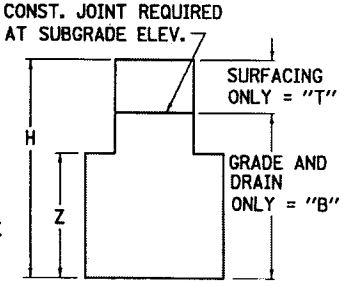
2. FOR ILLUSTRATION PURPOSES THIS DRAWING DEPICTS A BOX LOCATED ON A GRADE CONDITION. SEE CURRENT STD. DWG. RDB-014, FOR DETAILS OF SAG AND GRADE CONDITIONS.
3. DIMENSION VARIES DEPENDING UPON LOCATION OF BOX; GRADE CONDITION = 2'-3", SAG CONDITION = 4'-11".
4. GRADE CONDITION: X = 2'-3" MIN. TO 5'-0" MAX., SAG CONDITION: X = 4'-11".
5. 2'-0" DESIRED COVER, 1'-0" MINIMUM COVER OVER PIPE AND/OR LID.
6. "t" IS CONCRETE PIPE WALL THICKNESS OR METAL CORRUGATION DEPTH.
7. ALL WALLS AND SLABS ARE 8" THICK UNLESS OTHERWISE SHOWN.
8. THICKNESS = CURB WIDTH + 2" (MINIMUM WIDTH 8" WITHOUT CURB). INLET MAY BE CONSTRUCTED WITH OR WITHOUT A CURB. THE CURB ON THE BOX SHALL BE CONSTRUCTED TO MATCH THE ADJOINING CURB WITH THE SAME CONSTRUCTION AND MATERIAL DETAILS (SEE CURRENT STD. DWG. RPM-100). THIS DRAWING DEPICTS A LIP CURB APPLICATION.
9. THE TOP PHASE SHALL BE CAST AFTER THE ADJOINING CURB AND GUTTER HAVE BEEN CAST.
10. SEE CURRENT STD. DWG. RDB-014, 015, 016, 018 AND RDB-019 FOR FRAME AND GRATE DETAIL, STEEL PATTERN, DIMENSIONS AND QUANTITIES.
11. FABRIC WRAPPED BACKFILL DRAIN, (ONE PER WEEP HOLE).
12. THIS GRATE IS BICYCLE FRIENDLY.



SECTION A-A



SECTION B-B



CONSTRUCTION SEQUENCE FOR GRADE & DRAIN AND/OR SURFACING

RISER	
CU. YD. CONC. PER FT. HT.	
SAG	0.4
GRADE	0.2

USE WITH CUR. STD. DWGS.: RDB-014, 015, 016, 017, 018, AND RDB-019

KENTUCKY DEPARTMENT OF HIGHWAYS

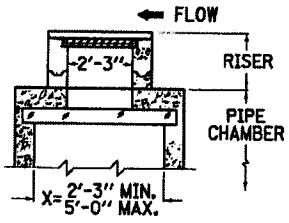
DROP BOX INLET TYPE 13

(DETAIL SHEET)

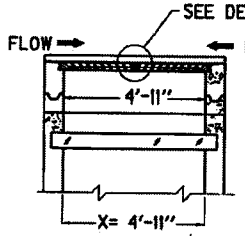
STANDARD DRAWING NO. RDB-013-06

SUBMITTED _____ DIRECTOR DIVISION OF DESIGN 11-21-07 DATE

APPROVED _____ STATE HIGHWAY ENGINEER 11-21-07 DATE



GRADE CONDITION
(1 GRATE & 1 FRAME REQ'D.)

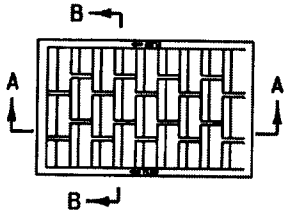


SAG CONDITION
(2 GRATES & 2 FRAMES REQ'D.)

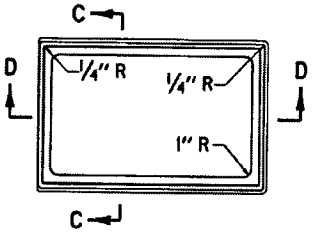
NOTES

1. ALL FILLETS AND ROUNDS SHALL BE 1/8" R.
2. THE FRAME AND GRATE SHALL BE MANUFACTURED OF CAST GRAY IRON CONFORMING TO ASTM A-48 CLASS 35B.

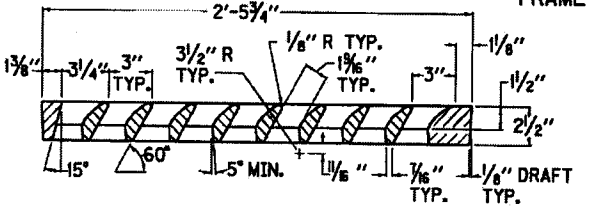
APPROX. WEIGHT	
1 GRATE	160 LBS.
1 FRAME	70 LBS.



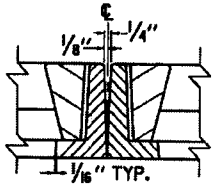
GRATE PLAN VIEW



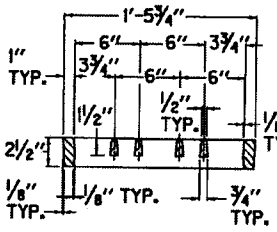
FRAME PLAN VIEW



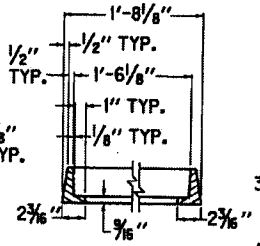
SECTION A-A



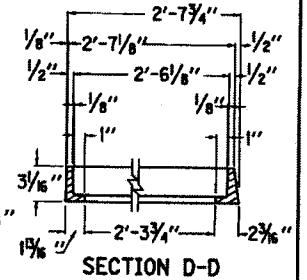
DETAIL "A"



SECTION B-B



SECTION C-C

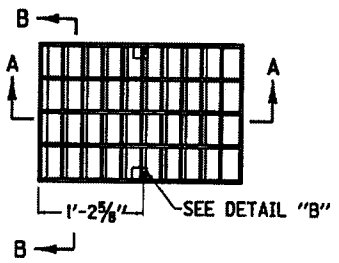


SECTION D-D

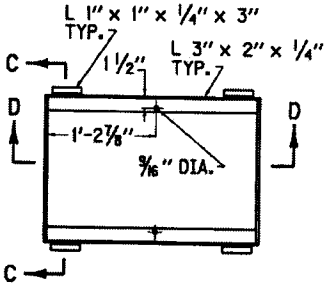
GRAY IRON CASTING

NOTES

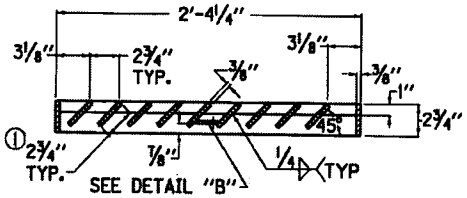
① THE 2 3/4" BAR SHALL BE NOTCHED TO RECEIVE THE 1" BAR.
② THE FRAME AND GRATE SHALL BE ASSEMBLED WITH 2 (TWO) 1/2" X 2 1/4" STAINLESS HEX HEAD BOLTS AND NUTS (COMMERICAL QUALITY).
③ ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A-36.



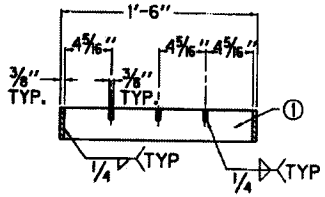
GRATE PLAN VIEW



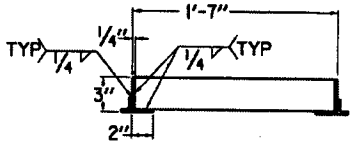
FRAME PLAN VIEW



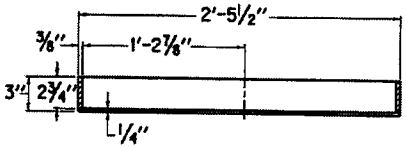
SECTION A-A



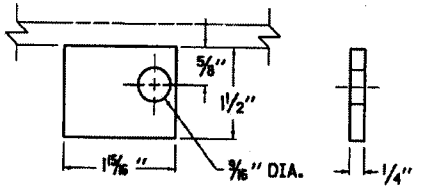
SECTION B-B



SECTION C-C



SECTION D-D



DETAIL "B"

③ STR. STEEL WTS.		
1 GRATE	TOTAL	1 FRAME
82 LBS.	126 LBS.	44 LBS.

STRUCTURAL STEEL

USE WITH CUR. STD. DWGS. RDB-013, 015, 016, 017, 018, AND RDB-019 OR RDB-030, 031, 032, 033, 034 AND RDB-035

KENTUCKY DEPARTMENT OF HIGHWAYS

DROP BOX INLET TYPE 13 AND TYPE 16 (FRAME AND GRATE DETAILS)

STANDARD DRAWING NO. RDB-014-05

SUBMITTED: DIRECTOR DIVISION OF ... — DATE 12-1-99

APPROVED: STATE HIGHWAY ENGINEER — DATE 12-1-99

REINFORCEMENT STEEL FOR 8" LID

(GRADE CONDITION)

SIZE		NO. 5 STEEL BARS								
		BAR s		BAR †		BAR u		BAR v		
X	Y	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	LBS.
2'-3"	1'-3"	--	--	--	--	--	--	--	--	7
	2'-0"	4	3'-0"	8	3'-3"	--	--	10	1'-0"	57
	2'-6"		3'-6"	10					1'-6"	71
	3'-0"		4'-0"	12					2'-0"	85
	3'-6"		4'-6"	14					2'-6"	99
	4'-0"		5'-0"	16					3'-0"	113
	4'-6"		5'-6"	18					3'-6"	127
	5'-0"		6'-0"	20					4'-0"	142
2'-6"	1'-3"	8	2'-3"	4	3'-6"	--	--	--	--	40
	2'-0"		3'-0"	8				8	1'-0"	70
	2'-6"		3'-6"	10					1'-6"	85
	3'-0"		4'-0"	12					2'-0"	101
	3'-6"		4'-6"	14					2'-6"	116
	4'-0"		5'-0"	16					3'-0"	132
	4'-6"		5'-6"	18					3'-6"	148
	5'-0"		6'-0"	20					4'-0"	163
3'-0"	1'-3"	8	2'-3"	4	4'-0"	--	--	--	--	42
	2'-0"		3'-0"	8				10	1'-0"	76
	2'-6"		3'-6"	10					1'-6"	94
	3'-0"		4'-0"	12					2'-0"	111
	3'-6"		4'-6"	14					2'-6"	129
	4'-0"		5'-0"	16					3'-0"	147
	4'-6"		5'-6"	18					3'-6"	164
	5'-0"		6'-0"	20					4'-0"	182
3'-6"	1'-3"	12	2'-3"	4	4'-6"	12	0'-11"	--	--	65
	2'-0"		3'-0"	8				8	1'-0"	102
	2'-6"		3'-6"	10					1'-6"	122
	3'-0"		4'-0"	12					2'-0"	142
	3'-6"		4'-6"	14					2'-6"	161
	4'-0"		5'-0"	16					3'-0"	181
	4'-6"		5'-6"	18					3'-6"	201
	5'-0"		6'-0"	20					4'-0"	221
4'-0"	1'-3"	12	2'-3"	4	5'-0"	12	1'-2"	--	--	71
	2'-0"		3'-0"	8				10	1'-0"	111
	2'-6"		3'-6"	10					1'-6"	133
	3'-0"		4'-0"	12					2'-0"	155
	3'-6"		4'-6"	14					2'-6"	177
	4'-0"		5'-0"	16					3'-0"	199
	4'-6"		5'-6"	18					3'-6"	221
	5'-0"		6'-0"	20					4'-0"	243
4'-6"	1'-3"	16	2'-3"	4	5'-6"	12	1'-5"	--	--	85
	2'-0"		3'-0"	8				8	1'-0"	129
	2'-6"		3'-6"	10					1'-6"	153
	3'-0"		4'-0"	12					2'-0"	177
	3'-6"		4'-6"	14					2'-6"	201
	4'-0"		5'-0"	16					3'-0"	225
	4'-6"		5'-6"	18					3'-6"	249
	5'-0"		6'-0"	20					4'-0"	273

(GRADE CONDITION)

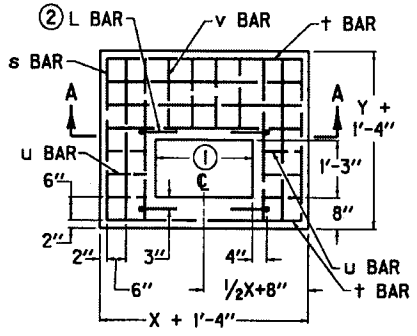
SIZE		NO. 5 STEEL BARS								
		BAR s		BAR †		BAR u		BAR v		
X	Y	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	LBS.
5'-0"	1'-3"	16	2'-3"	4	6'-0"	12	1'-8"	--	--	90
	2'-0"		3'-0"	8				10	1'-0"	138
	2'-6"		3'-6"	10					1'-6"	164
	3'-0"		4'-0"	12					2'-0"	191
	3'-6"		4'-6"	14					2'-6"	217
	4'-0"		5'-0"	16					3'-0"	243
	4'-6"		5'-6"	18					3'-6"	269
	5'-0"		6'-0"	20					4'-0"	295

REINFORCEMENT STEEL FOR 8" LID
(SAG CONDITION)

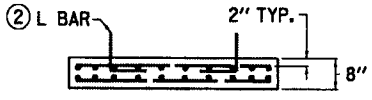
SIZE		NO. 5 STEEL BARS								
		BAR s		BAR †		BAR u		BAR v		
X	Y	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	LBS.
4'-11"	1'-3"	--	--	--	--	--	--	--	--	7
	2'-0"	4	3'-0"	8	5'-11"	--	--	22	1'-0"	92
	2'-6"		3'-6"	10					1'-6"	118
	3'-0"		4'-0"	12					2'-0"	144
	3'-6"		4'-6"	14					2'-6"	169
	4'-0"		5'-0"	16					3'-0"	195
	4'-6"		5'-6"	18					3'-6"	221
	5'-0"		6'-0"	20					4'-0"	247

NOTES:

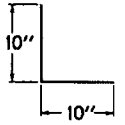
1. DIMENSION VARIES DEPENDING UPON LOCATION OF BOX : GRADE CONDITION= 2'-3" SAG CONDITION= 4'-11"
2. IN ADDITION TO THE CHARTED STEEL, FOUR L BARS ARE REQUIRED IN THE LID AND ARE INCLUDED IN THE TOTALS.
3. CONCRETE QUANTITIES FOR LID ARE INCLUDED ON " DIMENSIONS AND ESTIMATE OF QUANTITIES FOR D.B.I. TYPE 13" . SEE CUR. STD. DWGS. RDB-016 AND RDB-017.
4. REINFORCEMENT SHALL HAVE A CLEAR DISTANCE OF 2" FROM THE OUTSIDE FACE UNLESS OTHERWISE SHOWN.



PLAN VIEW OF 8" LID



SECTION A-A



L BAR DETAIL

USE WITH CUR. STD. DWGS.: RDB-013, 014, 016, 017, 018, AND RDB-019

KENTUCKY DEPARTMENT OF HIGHWAYS

DROP BOX INLET TYPE 13

(DETAIL & BAR CHART FOR LID)

STANDARD DRAWING NO. RDB-015-03

SUBMITTED _____ DIRECTOR DIVISION OF DESIGN — DATE 12-1-99

APPROVED _____ STATE HIGHWAY ENGINEER — DATE 12-1-99

DIMENSIONS AND ESTIMATE OF QUANTITIES
(PIPE CHAMBER-GRADE CONDITION)

INLET SIZE ④			MAX. PIPE DIA.	PIPE LOCATION	Z ①	CONCRETE	
NO. ⑥	X	Y				CU. YD. ①②	Q ③
1	2'-3"	1'-3"	12"	X OR Y	2'-2"	0.8	0.2
2			15"	X	2'-5"		
3		2'-0"		X OR Y		1.0	0.3
4		1'-3"	18"	X	2'-9"	0.9	0.2
5		2'-0"		X OR Y		1.1	0.3
6		1'-3"	21"	X	3'-0"	1.0	0.2
7		2'-0"				1.2	0.3
8		2'-6"		X OR Y		1.3	
9			24"	Y	3'-3"	1.4	
10	2'-6"	1'-3"		X		1.1	
11		2'-0"				1.3	
12		2'-6"		X OR Y		1.5	
13	2'-3"	3'-0"	27"	Y	3'-6"	1.6	
14	2'-6"					1.7	
15	3'-0"	1'-3"		X		1.3	
16		2'-0"				1.6	
17		2'-6"				1.7	
18		3'-0"		X OR Y		1.9	0.4
19	2'-3"	3'-6"	30"	Y	4'-1"	2.0	0.3
20	2'-6"					2.1	0.4
21	3'-0"					2.3	
22	3'-6"	1'-3"		X	3'-10"	1.5	0.3
23		2'-0"				1.8	
24		2'-6"				2.0	0.4
25		3'-0"				2.2	
26		3'-6"		X OR Y	4'-1"	2.5	
27	2'-3"		33"	Y	4'-4"	2.1	0.3
28	2'-6"					2.2	0.4
29	3'-0"					2.4	
30	3'-6"	1'-3"		X	4'-1"	1.6	0.3
31		2'-0"				1.9	
32		2'-6"				2.1	0.4
33		3'-0"				2.3	
34		3'-6"		X OR Y	4'-4"	2.6	
35	2'-3"	4'-0"	36"	Y	4'-7"	2.4	
36	2'-6"					2.5	
37	3'-0"					2.7	
38	3'-6"					3.0	
39	4'-0"	1'-3"		X	4'-4"	1.8	0.3
40		2'-0"				2.2	
41		2'-6"				2.4	0.4
42		3'-0"				2.6	
43		3'-6"			4'-7"	3.0	
44		4'-0"		X OR Y		3.2	0.5
45	2'-3"	4'-6"	42"	Y	5'-2"	2.8	0.4
46	2'-6"					2.9	
47	3'-0"	4'-6"	42"	Y	5'-2"	3.2	0.4
48	3'-6"					3.4	0.5
49	4'-0"					3.7	
50	4'-6"	1'-3"		X	4'-11"	2.2	0.3
51		2'-0"				2.6	0.4
52		2'-6"				2.8	
53		3'-0"				3.1	
54		3'-6"			5'-2"	3.4	0.5
55		4'-0"				3.7	
56		4'-6"		X OR Y		4.0	
57	2'-3"	5'-0"	48"	Y	5'-8"	3.2	0.4
58	2'-6"					3.3	
59	3'-0"					3.6	0.5
60	3'-6"					3.9	
61	4'-0"					4.2	
62	4'-6"					4.5	
63	5'-0"	1'-3"		X	5'-5"	2.5	0.4
64		2'-0"				3.0	
65		2'-6"				3.2	
66		3'-0"				3.5	0.5
67		3'-6"			5'-8"	3.9	
68		4'-0"				4.2	
69		4'-6"				4.5	
70		5'-0"		X OR Y		4.8	0.6

REFERENCE CHART

DIA. OF PIPE	D.B.I. TYPE 13		CONCRETE TO DEDUCT FOR EACH PIPE
	PIPE ON "X" SIDE OF INLET	PIPE ON "Y" SIDE OF INLET	CUBIC YARDS
0	2'-3"	1'-3"	----
12"		2'-0"	0.1
15"-18"		2'-6"	
21"			
24"	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

NOTES

① BASED ON Z AS EQUAL TO D++1'-0" WHEN "Y" DIMENSION IS LESS THAN 3'-6".
BASED ON Z AS EQUAL TO D++1'-3" WHEN "Y" DIMENSION IS 3'-6" OR GREATER.

② SEE REFERENCE CHART FOR QUANTITIES TO DEDUCT FOR PIPE.

③ Q = CU. YD. PER FOOT INCREASE OR DECREASE WHEN Z VARIES.

④ SEE CURRENT STD. DWGS. RDB-013 AND RDB-014 FOR DIMENSIONS.

5. SEE CUR. STD. DWG. RDB-018 AND RDB-019 FOR STEEL REINFORCEMENT IN PIPE CHAMBER AND RISER WHEN H = 8'-0" OR GREATER.

⑥ INLET IS SHOWN ON PLANS AS "DROP BOX INLET TYPE 13". FOLLOWING THIS IS A NUMBER AND A BOX HEIGHT. USE THIS NUMBER WITH THIS CHART.

7. SEE CURRENT STD. DWG. RDB-017 FOR DIMENSIONS AND ESTIMATE OF QUANTITIES WHEN BOXES ARE LOCATED IN A SAG CONDITION.

USE WITH CUR. STD. DWGS. RDB-013, 014, 015, 017, 018, AND RDB-019

KENTUCKY
DEPARTMENT OF HIGHWAYS

DROP BOX INLET
TYPE 13
(PIPE CHAMBER-GRADE CONDTN.)

STANDARD DRAWING NO. RDB-016-02

SUBMITTED _____ DIRECTOR DIVISION OF DESIGN 12-1-99 DATE

APPROVED _____ STATE HIGHWAY ENGINEER 12-1-99 DATE

DIMENSIONS AND ESTIMATE OF QUANTITIES
(PIPE CHAMBER-SAG CONDITION)

INLET SIZE ④			MAX. PIPE DIA.	PIPE LOCATION	Z ①	CONCRETE	
NO. ⑥	X	Y				CU. YD. ①②	Q ③
71	4'-11"	1'-3"	12"	X OR Y	2'-2"	1.2	0.4
72			15"	X		1.3	
73		2'-0"		X OR Y	2'-5"	1.6	
74		1'-3"	18"	X		1.4	
75		2'-0"		X OR Y	2'-9"	1.8	
76		1'-3"	21"	X		1.5	
77		2'-0"			3'-0"	1.9	
78		2'-6"		X OR Y		2.1	
79		1'-3"	24"	X		1.6	
80		2'-0"			3'-3"	2.0	
81		2'-6"		X OR Y		2.2	
82		1'-3"	27"	X		1.7	
83		2'-0"			3'-6"	2.1	
84		2'-6"				2.3	
85		3'-0"		X OR Y		2.5	0.5
86		1'-3"	30"	X		1.8	0.4
87		2'-0"			3'-10"	2.2	
88		2'-6"				2.4	
89		3'-0"				2.7	0.5
90		3'-6"		X OR Y		3.0	
91		1'-3"	33"	X	4'-1"	1.9	0.4
92		2'-0"				2.3	
93		2'-6"				2.5	
94		3'-0"				2.8	0.5
95		3'-6"		X OR Y		3.2	
96		1'-3"	36"	X	4'-4"	2.0	0.4
97		2'-0"				2.4	
98		2'-6"				2.7	
99		3'-0"				2.9	0.5
100		3'-6"			4'-7"	3.3	
101		4'-0"		X OR Y		3.5	
102		1'-3"	42"	X	4'-11"	2.2	0.4
103		2'-0"				2.6	
104		2'-6"				2.9	
105		3'-0"				3.2	0.5
106		3'-6"			5'-2"	3.6	
107		4'-0"				3.8	
108		4'-6"		X OR Y		4.1	
109		1'-3"	48"	X	5'-5"	2.4	0.4
110		2'-0"				2.8	
111		2'-6"				3.1	
112		3'-0"				3.4	0.5
113		3'-6"			5'-8"	3.8	
114		4'-0"				4.1	
115		4'-6"				4.4	
116		5'-0"		X OR Y		4.6	0.6

REFERENCE CHART

DIA. OF PIPE	D.B.I. TYPE 13		CONCRETE TO DEDUCT FOR EACH PIPE
	PIPE ON "X" SIDE OF INLET	PIPE ON "Y" SIDE OF INLET	CUBIC YARDS
0	4'-11"	1'-3"	----
12"			0.1
15"-18"		2'-0"	
21"		2'-6"	
24"			
27"		3'-0"	0.2
30"-33"		3'-6"	
36"		4'-0"	0.3
42"		4'-6"	0.4
48"		5'-0"	0.5

NOTES

① BASED ON Z AS EQUAL TO D+†+1'-0" WHEN "Y" DIMENSION IS LESS THAN 3'-6".
BASED ON Z AS EQUAL TO D+†+1'-3" WHEN "Y" DIMENSION IS 3'-6" OR GREATER.

② SEE REFERENCE CHART FOR QUANTITIES TO DEDUCT FOR PIPE .

③ Q = CU. YD. PER FOOT INCREASE OR DECREASE WHEN Z VARIES .

④ SEE CURRENT STD. DWGS. RDB-013 AND RDB-014 FOR DIMENSIONS.

5. SEE CUR. STD. DWG. RDB-018 AND RDB-019 FOR STEEL REINFORCEMENT IN PIPE CHAMBER AND RISER WHEN H = 8'-0" OR GREATER .

⑥ INLET IS SHOWN ON PLANS AS "DROP BOX INLET TYPE 13". FOLLOWING THIS IS A NUMBER AND A BOX HEIGHT. USE THIS NUMBER WITH THIS CHART .

7. SEE CURRENT STD. DWG. RDB-016 FOR DIMENSIONS AND ESTIMATE OF QUANTITIES WHEN BOXES ARE LOCATED IN A GRADE CONDITION.

USE WITH CUR. STD. DWGS. RDB-013, 014, 015, 016, 018, AND RDB-019

KENTUCKY DEPARTMENT OF HIGHWAYS

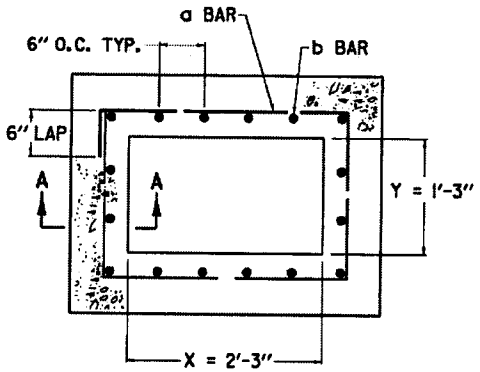
DROP BOX INLET
TYPE 13
(PIPE CHAMBER-SAG CONDITION)

STANDARD DRAWING NO. RDB-017-02

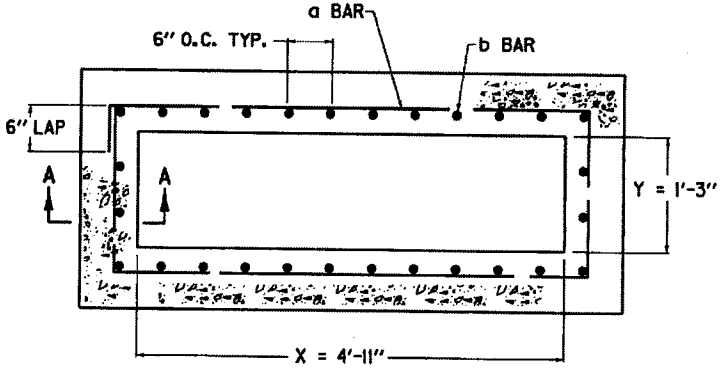
SUBMITTED _____ DIRECTOR DIVISION OF DESIGN 12-1-99 DATE

APPROVED _____ STATE HIGHWAY ENGINEER 12-1-99 DATE

ADDITIONAL STEEL REINFORCEMENT REQUIREMENTS
(RISER, H = 8'-0" TO 15'-0", GRADE AND SAG CONDITION)

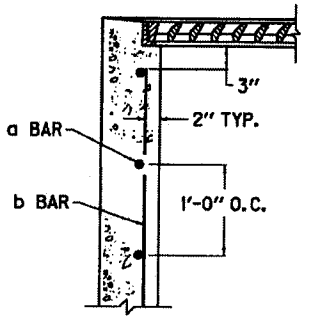


GRADE CONDITION



SAG CONDITION

NOTES
1. STEEL REINFORCEMENT SHALL HAVE A CLEAR DISTANCE OF 2" FROM THE FACE UNLESS OTHERWISE SHOWN.
2. ALL STEEL REINFORCEMENT SHALL BE NO. 5 BARS.



SECTION A-A

APPROXIMATE RISER QUANTITIES PER ONE FOOT IN HEIGHT							
CONDITION	SIZE X	SIZE Y	BAR a QTY.	BAR a LIN. FT.	BAR b QTY.	BAR b LIN. FT.	LBS STEEL
GRADE	2'-3"	1'-3"	3	9'-3"	16	1'-0"	26
SAG	4'-11"		3	14'-7"	28		44

USE WITH CUR. STD. DWGS. RDB-013, 014, 015, 016, 017, AND RDB-019

KENTUCKY DEPARTMENT OF HIGHWAYS

DROP BOX INLET
TYPE 13
(ADDITIONAL STEEL - RISER)

STANDARD DRAWING NO. RDB-018-03

SUBMITTED: DIRECTOR DIVISION OF DESIGN — DATE 12-1-99

APPROVED: STATE HIGHWAY ENGINEER — DATE 12-1-99

① ADDITIONAL STEEL REINFORCEMENT REQUIRMENTS
(PIPE CHAMBER, H = 8' TO 15', GRADE CONDITION)

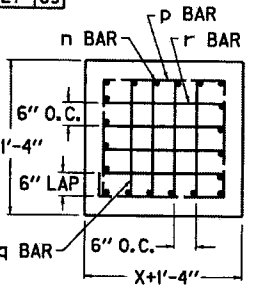
SIZE ②		NO. 5 STEEL BARS									
		③ BAR n		④ BAR p		BAR q		BAR r		LBS. ⑤	
X	Y	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	TOTAL	⑥
2'-3"	1'-3"	16	6'-0"	6	9'-3"	4	1'-9"	3	2'-9"	174	26
	2'-0"	20			10'-9"		2'-6"	4		214	32
	2'-6"	22			11'-9"		3'-0"	5		238	35
	3'-0"	24			12'-9"		3'-6"	6		262	38
	3'-6"	26			13'-9"		4'-0"	7		286	41
	4'-0"	28			14'-9"		4'-6"	8		309	45
	4'-6"	30			15'-9"		5'-0"	9		333	48
	5'-0"	32			16'-9"		5'-6"	10		357	51
2'-6"	1'-3"	20	6'-0"	6	9'-9"	5	1'-9"	3	3'-0"	205	31
	2'-0"	22			11'-3"		2'-6"	4		234	35
	2'-6"	24			12'-3"		3'-0"	5		258	38
	3'-0"	26			13'-3"		3'-6"	6		283	41
	3'-6"	28			14'-3"		4'-0"	7		307	44
	4'-0"	30			15'-3"		4'-6"	8		332	47
	4'-6"	32			16'-3"		5'-0"	9		356	50
	5'-0"	34			17'-3"		5'-6"	10		381	53
3'-0"	1'-3"	22	6'-0"	6	10'-9"	6	1'-9"	3	3'-6"	227	34
	2'-0"	24			12'-3"		2'-6"	4		257	38
	2'-6"	26			13'-3"		3'-0"	5		283	41
	3'-0"	28			14'-3"		3'-6"	6		308	44
	3'-6"	30			15'-3"		4'-0"	7		334	47
	4'-0"	32			16'-3"		4'-6"	8		359	50
	4'-6"	34			17'-3"		5'-0"	9		385	53
	5'-0"	36			18'-3"		5'-6"	10		410	57
3'-6"	1'-3"	24	6'-0"	6	11'-9"	7	1'-9"	3	4'-0"	249	37
	2'-0"	26			13'-3"		2'-6"	4		281	41
	2'-6"	28			14'-3"		3'-0"	5		307	44
	3'-0"	30			15'-3"		3'-6"	6		334	47
	3'-6"	32			16'-3"		4'-0"	7		360	50
	4'-0"	34			17'-3"		4'-6"	8		387	53
	4'-6"	36			18'-3"		5'-0"	9		414	57
	5'-0"	38			19'-3"		5'-6"	10		440	60
4'-0"	1'-3"	26	6'-0"	6	12'-9"	8	1'-9"	3	4'-6"	271	40
	2'-0"	28			14'-3"		2'-6"	4		304	44
	2'-6"	30			15'-3"		3'-0"	5		332	47
	3'-0"	32			16'-3"		3'-6"	6		359	50
	3'-6"	34			17'-3"		4'-0"	7		387	53
	4'-0"	36			18'-3"		4'-6"	8		415	57
	4'-6"	38			19'-3"		5'-0"	9		442	60
	5'-0"	40			20'-3"		5'-6"	10		470	63
4'-6"	1'-3"	28	6'-0"	6	13'-9"	9	1'-9"	3	5'-0"	293	44
	2'-0"	30			15'-3"		2'-6"	4		328	47
	2'-6"	32			16'-3"		3'-0"	5		356	50
	3'-0"	34			17'-3"		3'-6"	6		385	53
	3'-6"	36			18'-3"		4'-0"	7		414	57
	4'-0"	38			19'-3"		4'-6"	8		442	60
	4'-6"	40			20'-3"		5'-0"	9		471	63
	5'-0"	42			21'-3"		5'-6"	10		500	66

SIZE ②		NO. 5 STEEL BARS									
		③ BAR n		④ BAR p		BAR q		BAR r		LBS. ⑤	
X	Y	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	TOTAL	⑥
5'-0"	1'-3"	30	6'-0"	6	14'-9"	10	1'-9"	3	5'-6"	316	47
	2'-0"	32			16'-3"		2'-6"	4		351	50
	2'-6"	34			17'-3"		3'-0"	5		381	53
	3'-0"	36			18'-3"		3'-6"	6		410	57
	3'-6"	38			19'-3"		4'-0"	7		440	60
	4'-0"	40			20'-3"		4'-6"	8		470	63
	4'-6"	42			21'-3"		5'-0"	9		500	66
	5'-0"	44			22'-3"		5'-6"	10		529	69

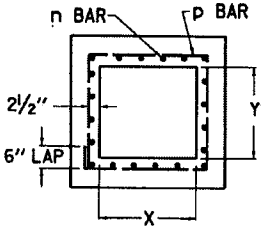
① ADDITIONAL STEEL REINFORCEMENT REQUIRMENTS
(PIPE CHAMBER, H = 8' TO 15', SAG CONDITION)

SIZE ②		NO. 5 STEEL BARS									
		③ BAR n		④ BAR p		BAR q		BAR r		LBS. ⑤	
X	Y	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	TOTAL	⑥
4'-11"	1'-3"	28	6'-0"	6	14'-7"	10	1'-9"	3	5'-5"	302	44
	2'-0"	32			16'-1"		2'-6"	4		350	50
	2'-6"	34			17'-1"		3'-0"	5		379	53
	3'-0"	36			18'-1"		3'-6"	6		409	56
	3'-6"	38			19'-1"		4'-0"	7		438	60
	4'-0"	40			20'-1"		4'-6"	8		468	63
	4'-6"	42			21'-1"		5'-0"	9		498	66
	5'-0"	44			22'-1"		5'-6"	10		527	69

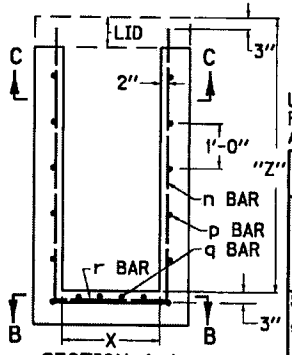
NOTES
① BASED ON "Z" AS EQUAL TO 6'-0".
② SEE CURRENT. STD. DWG. RDB-013 AND RDB-014 FOR LOCATION AND DIMENSIONS.
③ LENGTH OF n BAR IS ALWAYS SAME AS "Z" DIMENSION.
④ ADD OR SUBTRACT ONE p BAR PER EVEN FOOT VARIANCE FROM 6'-0" Z.
⑤ NO DEDUCTIONS HAVE BEEN MADE FOR PIPE.
⑥ ADD OR SUBTRACT LBS. STEEL PER FOOT VARIANCE FROM 6'-0" Z.
7. REINFORCEMENT SHALL HAVE A CLEAR DISTANCE OF 2" FROM THE FACE UNLESS OTHERWISE SHOWN.



SECTION B-B



SECTION C-C



SECTION A-A

USE WITH CUR. STD. DWGS.: RDB-013, 014, 015, 016, 017, AND RDB-018

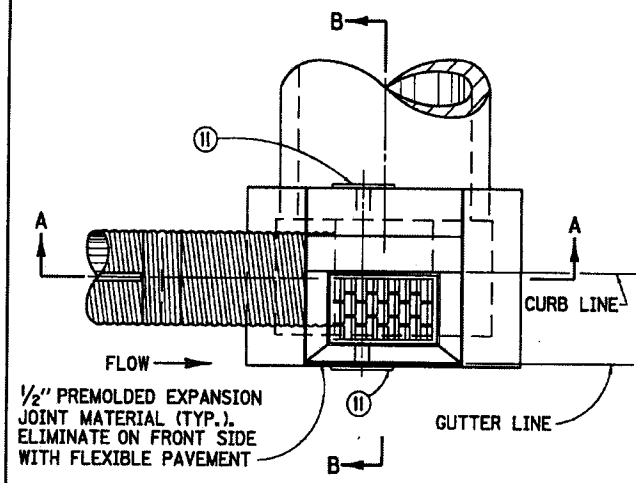
KENTUCKY DEPARTMENT OF HIGHWAYS

DROP BOX INLET TYPE 13
(ADDITIONAL STEEL - CHAMBER)

STANDARD DRAWING NO. RDB-019-03

SUBMITTED _____ DIRECTOR DIVISION OF DESIGN — 12-1-99 DATE

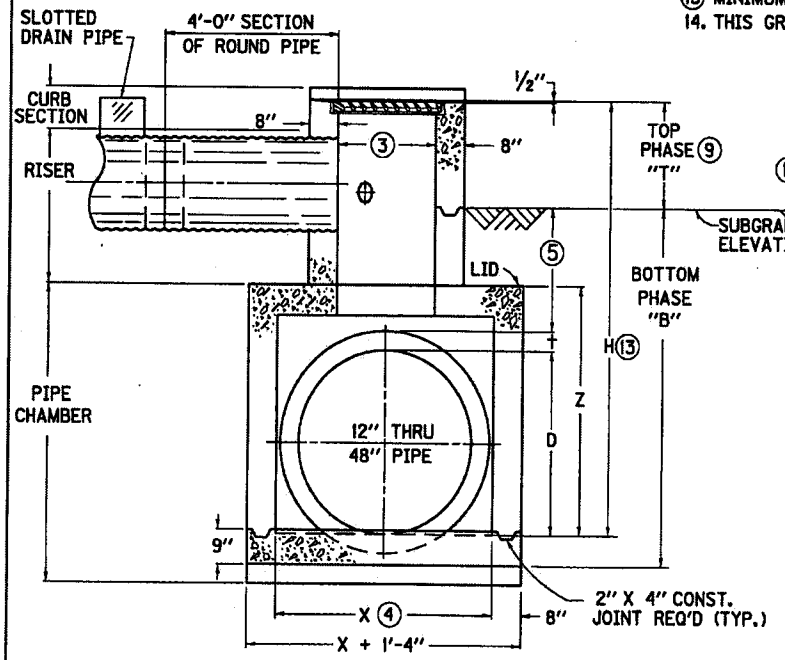
APPROVED _____ STATE HIGHWAY ENGINEER — 12-1-99 DATE



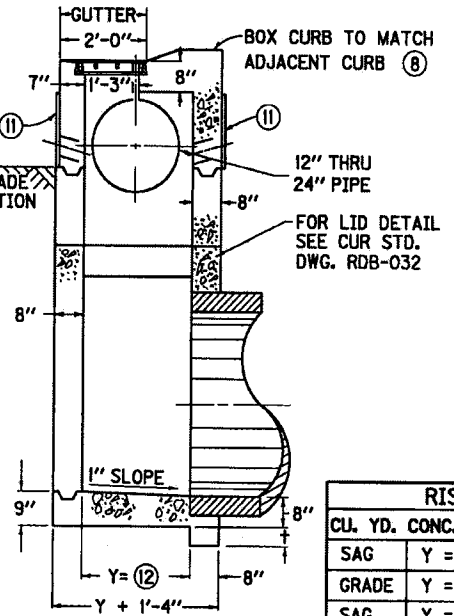
PLAN VIEW

NOTES

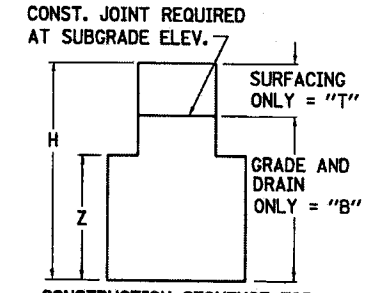
1. BOX INLET MAY BE CONSTRUCTED IN TWO PHASES (BOTTOM AND TOP) AND MAY BE CONSTRUCTED IN A SAG VERTICAL CURVE OR ON GRADE.
   BID ITEM: DROP BOX INLET TYPE 16(Δ) (✻)
   (Δ) = "S" (SAG CONDITION)
   (Δ) = "G" (GRADE CONDITION)
   (✻) = "T" (TOP PHASE)
   (✻) = "B" (BOTTOM PHASE)
   WITH NO "T" OR "B" SUFFIX A COMPLETE INLET IS REQUIRED.
2. FOR ILLUSTRATION PURPOSES THIS DRAWING DEPICTS A BOX LOCATED ON A GRADE CONDITION. SEE CURRENT STD. DWG. RDB-014 , FOR DETAILS OF SAG AND GRADE CONDITIONS.
3. DIMENSION VARIES DEPENDING UPON LOCATION OF BOX: GRADE CONDITION = 2'-3", SAG CONDITION = 4'-11".
4. GRADE CONDITION: X = 2'-3" MIN. TO 5'-0" MAX. , SAG CONDITION: X=4'-11".
5. 2'-0" DESIRED COVER, 1'-0" MIN. COVER OVER PIPE AND/OR LID.
6. "t" IS CONCRETE PIPE WALL THICKNESS OR METAL CORRUGATION DEPTH.
7. ALL WALLS AND SLABS ARE 8" THICK UNLESS OTHERWISE SHOWN.
8. THE CURB ON THE BOX SHALL BE CONSTRUCTED TO MATCH THE ADJOINING CURB WITH THE SAME CONSTRUCTION AND MATERIAL DETAILS (SEE CURRENT STD. DWG. RPM-100). THIS DRAWING DEPICTS A LIP CURB APPLICATION.
9. THE TOP PHASE SHALL BE CAST AFTER THE ADJOINING CURB AND GUTTER HAVE BEEN CAST.
10. SEE CURRENT STD. DWG. RDB-014 FOR FRAME AND GRATE DETAIL. SEE CUR. STD. DWG. RDB-031 FOR STEEL PATTERN. SEE CUR. STD. DWG. RDB-033 FOR DIMENSIONS AND QUANTITIES.
11. FABRIC WRAPPED BACKFILL DRAIN, (ONE PER WEEP HOLE).
12. 2'-0" FOR 12", 15", AND 18" OR 2'-6" FOR 24" SLOTTED DRAIN PIPE.
13. MINIMUM HEIGHT FOR LONGITUDINAL PIPE SHALL BE H = 11" + INSIDE DIAMETER OF PIPE.
14. THIS GRATE IS BICYCLE FRIENDLY.



SECTION A-A



SECTION B-B



CONSTRUCTION SEQUENCE FOR GRADE & DRAIN AND/OR SURFACING

USE WITH CUR. STD. DWGS.: RDI-200, RDB-014, RDB-031, RDB-032 , RDB-033, RDB-034, RDB-035

RISER		
CU. YD. CONC. PER FT. HT.		
SAG	Y = 2'-0"	0.4
GRADE	Y = 2'-0"	0.3
SAG	Y = 2'-6"	0.4
GRADE	Y = 2'-6"	0.3

KENTUCKY DEPARTMENT OF HIGHWAYS

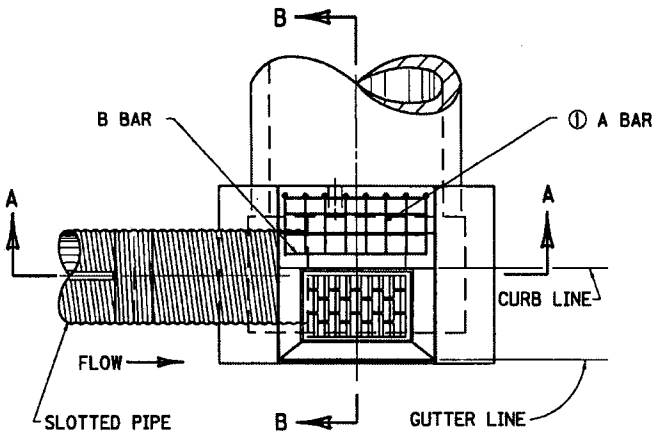
DROP BOX INLET TYPE 16

(DETAIL SHEET)

STANDARD DRAWING NO. RDB-030-03

SUBMITTED: DIRECTOR DIVISION OF DESIGN — DATE 11-21-07

APPROVED: STATE HIGHWAY ENGINEER — DATE 11-21-07



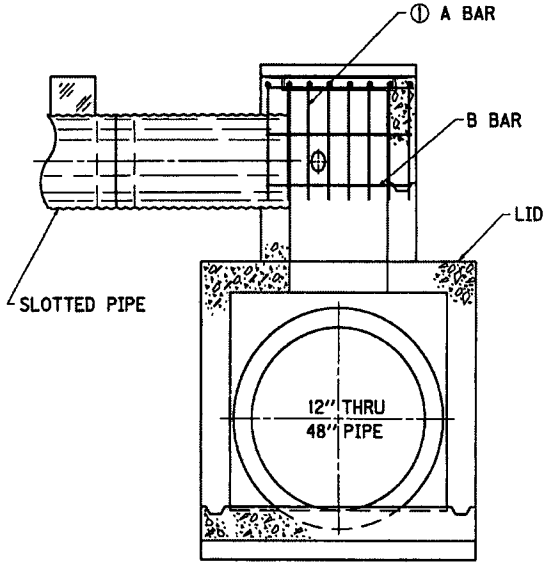
PLAN VIEW

NOTES

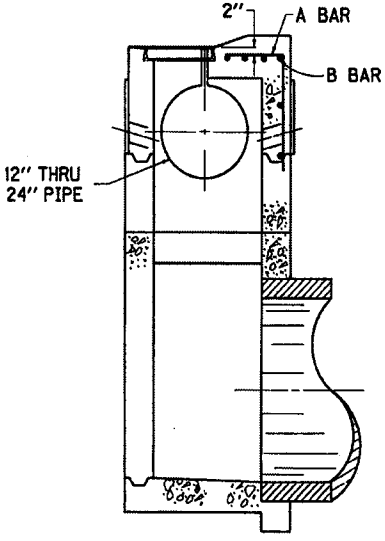
① SLOTTED PIPE SIZE DENOTES WHICH A BAR TO USE, SEE STEEL CHART THIS DRAWING.
2. SEE CUR. STD. DWG. RDB-032 FOR LID REINFORCEMENT.
3. REINFORCEMENT SHALL HAVE A CLEAR DISTANCE OF 2" FROM THE OUTSIDE FACE UNLESS OTHERWISE SHOWN.
4. SPACE A BARS APPROXIMATELY 6" CENTER TO CENTER.
5. SPACE B BARS AS SHOWN.

STEEL REINFORCEMENT CHART

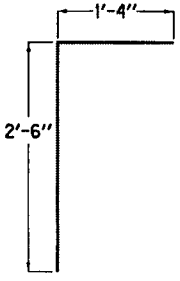
NO. 5 BAR	SLOTTED PIPE SIZE	CONDITION	QTY.	LGTH.	TOTAL LBS
A BAR	12" THRU 18"	GRADE	8	2'-7"	22
B BAR			6	3'-3"	20
A BAR		SAGE	13	2'-7"	35
B BAR			6	5'-11"	37
A BAR	24"	GRADE	8	3'-10"	32
B BAR			6	3'-3"	20
A BAR		SAGE	13	3'-10"	52
B BAR			6	5'-11"	37



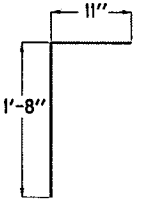
SECTION A-A



SECTION B-B



A BAR DETAIL
24" PIPE



A BAR DETAIL
12" - 18" PIPE

USE WITH CUR. STD. DWGS.: RDI-200, RDB-014, RDB-030, RDB-032, RDB-033, RDB-034, RDB-035

KENTUCKY
DEPARTMENT OF HIGHWAYS

DROP BOX INLET
TYPE 16
(STEEL SHEET)

STANDARD DRAWING NO. RDB-031-03

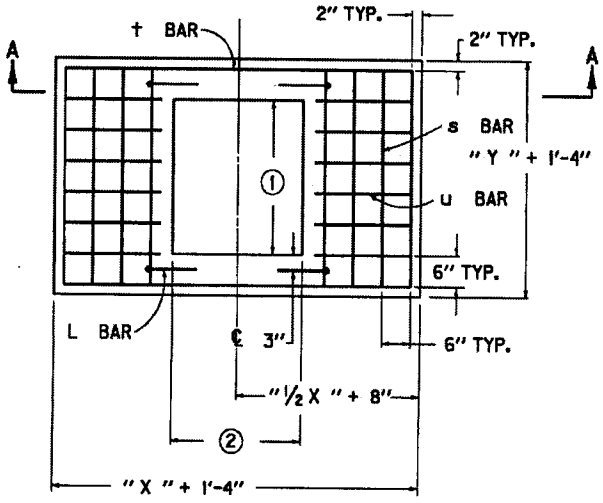
SUBMITTED _____ DIRECTOR DIVISION OF DESIGN 12-1-99 DATE

APPROVED _____ STATE HIGHWAY ENGINEER 12-1-99 DATE

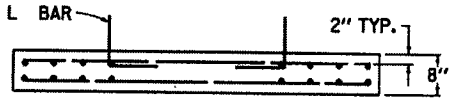
REINFORCEMENT STEEL FOR 8" LID

(GRADE CONDITION)

SIZE		NO. 5 STEEL BARS						
		BAR s		BAR †		BAR u		
X	Y	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	LBS.
2'-3"	2'-0"	4	3'-0"	4	3'-3"	--	--	33
	2'-6"		3'-6"			--	--	35
2'-6"	2'-0"	8	3'-0"		3'-6"	--	--	47
	2'-6"		3'-6"			--	--	51
3'-0"	2'-0"		3'-0"		4'-0"	--	--	49
	2'-6"		3'-6"			--	--	53
3'-6"	2'-0"	12	3'-0"		4'-6"	20	0'-11"	82
	2'-6"		3'-6"			24		89
4'-0"	2'-0"		3'-0"		5'-0"	20	1'-2"	86
	2'-6"		3'-6"			24		101
4'-6"	2'-0"	16	3'-0"		5'-6"	20	1'-5"	110
	2'-6"		3'-6"			24		124
5'-0"	2'-0"		3'-0"		6'-0"	20	1'-8"	117
	2'-6"		3'-6"			24		132



DETAIL OF 8" LID
PLAN VIEW



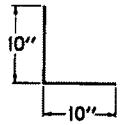
SECTION A-A

NOTES

① 2'-0" FOR 12", 15", AND 18" OR 2'-6" FOR 24" SLOTTED DRAIN PIPE.

② DIMENSION VARIES DEPENDING UPON LOCATION OF BOX :
GRADE CONDITION = 2'-3"
SAG CONDITION = 4'-11"

3. IN ADDITION TO THE CHARTED STEEL, FOUR L BARS ARE REQUIRED IN THE LID AND ARE INCLUDED IN THE TOTALS.
4. CONCRETE QUANTITIES FOR LID ARE INCLUDED ON " DIMENSIONS AND ESTIMATE OF QUANTITIES FOR D.B.I. TYPE 16". SEE CUR. STD. DWG. RDB-033
5. LID REINFORCING STEEL NOT REQUIRED IN SAG LOCATION.
6. REINFORCEMENT SHALL HAVE A CLEAR DISTANCE OF 2" FROM THE OUTSIDE FACE UNLESS OTHERWISE SHOWN.



L BAR DETAIL

USE WITH CUR. STD. DWGS.:
RDI-200, RDB-014, RDB-030, RDB-031, RDB-033, RDB-034, RDB-035

KENTUCKY
DEPARTMENT OF HIGHWAYS

DROP BOX INLET
TYPE 16

(DETAIL & BAR CHART FOR LID)

STANDARD DRAWING NO. RDB-032-03

SUBMITTED _____ DIRECTOR, DIVISION OF DESIGN 12-1-99 DATE

APPROVED _____ STATE HIGHWAY ENGINEER 12-1-99 DATE

DIMENSIONS AND ESTIMATE OF QUANTITIES
(GRADE CONDITION)

INLET SIZE ④			MAX. PIPE DIA.	LOCATION	Z ①	CONCRETE	
NO. ⑥	X	Y				CU. YD. ①②	Q ③
1	2'-3"	2'-0"	12"	X OR Y	2'-2"	0.9	0.3
2			15"		2'-5"	1.0	
3			18"		2'-9"	1.1	
4			21"	X	3'-0"		
5		2'-6"		X OR Y		1.3	
6			24"	Y	3'-3"		
7	2'-6"	2'-0"		X			
8		2'-6"		X OR Y		1.4	
9	3'-0"	2'-0"	27"	X	3'-6"	1.5	
10		2'-6"				1.7	
11	3'-6"	2'-0"	30"		3'-10"	1.8	
12		2'-6"				2.0	0.4
13		2'-0"	33"		4'-1"	1.9	0.3
14		2'-6"				2.0	0.4
15	4'-0"	2'-0"	36"		4'-4"	2.1	
16		2'-6"				2.3	
17	4'-6"	2'-0"	42"		4'-11"	2.5	
18		2'-6"				2.7	
19	5'-0"	2'-0"	48"		5'-5"	2.9	
20		2'-6"				3.2	

DIMENSIONS AND ESTIMATE OF QUANTITIES
(SAG CONDITION)

INLET SIZE ④			MAX. PIPE DIA.	LOCATION	Z ①	CONCRETE	
NO. ⑥	X	Y				CU. YD. ①②	Q ③
21	4'-11"	2'-0"	12"	X OR Y	2'-2"	1.4	0.4
22			15"		2'-5"	1.5	
23			18"		2'-9"	1.7	
24			21"	X	3'-0"	1.8	
25		2'-6"		X OR Y		1.9	
26		2'-0"	24"	X	3'-3"		
27		2'-6"		X OR Y		2.0	
28		2'-0"	27"	X	3'-6"		
29		2'-6"				2.1	
30		2'-0"	30"		3'-10"		
31		2'-6"				2.3	
32		2'-0"	33"		4'-1"	2.2	
33		2'-6"				2.4	
34		2'-0"	36"		4'-4"	2.3	
35		2'-6"				2.5	
36		2'-0"	42"		4'-11"		
37		2'-6"				2.8	
38		2'-0"	48"		5'-5"		
39		2'-6"				3.0	

NOTES

① BASED ON Z AS EQUAL TO D++12" .
② SEE REFERENCE CHART FOR QUANTITIES TO DEDUCT FOR PIPE .
③ Q = CU. YD. PER FOOT INCREASE OR DECREASE WHEN Z VARIES .
④ SEE CUR. STD. DWG. RDB-030 FOR DIMENSIONS.
5. SEE CUR. STD. DWG. RDB-034 AND RDB-035 FOR STEEL REINFORCEMENT IN PIPE CHAMBER AND RISER WHEN H = 8'-0" OR GREATER .
⑥ INLET IS SHOWN ON PLANS AS "DROP BOX INLET TYPE 16". FOLLOWING THIS IS A NUMBER AND A BOX HEIGHT. USE THIS NUMBER WITH THIS CHART .

REFERENCE CHART
(GRADE CONDITION)

DIA. OF PIPE	D.B.I. TYPE 16		CONCRETE TO DEDUCT FOR EACH PIPE
	PIPE ON "X" SIDE OF INLET	PIPE ON "Y" SIDE OF INLET	CUBIC YARDS
0	2'-3"	2'-0"	----
12"			0.1
15"-18"			
21"		2'-6"	
24"	2'-6"		
27"	3'-0"	----	0.2
30"-33"	3'-6"		
36"	4'-0"		0.3
42"	4'-6"		0.4
48"	5'-0"		0.5

REFERENCE CHART
(SAG CONDITION)

DIA. OF PIPE	D.B.I. TYPE 16		CONCRETE TO DEDUCT FOR EACH PIPE
	PIPE ON "X" SIDE OF INLET	PIPE ON "Y" SIDE OF INLET	CUBIC YARDS
0	4'-11"	2'-0"	----
12"			0.1
15"-18"			
21"		2'-6"	
24"			
27"		----	0.2
30"-33"			
36"			0.3
42"			0.4
48"			0.5

USE WITH CUR. STD. DWGS.: RDI-200, RDB-014, RDB-030, RDB-031, RDB-032, RDB-034, RDB-035

KENTUCKY DEPARTMENT OF HIGHWAYS

DROP BOX INLET TYPE 16

(DIMENSIONS & ESTIMATE OF QUANTITIES)

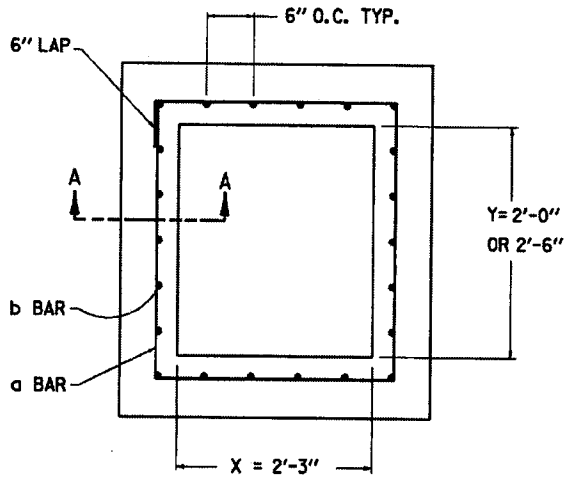
STANDARD DRAWING NO. RDB-033-02

SUBMITTED _____ DIRECTOR, DIVISION OF DESIGN — DATE 12-1-99

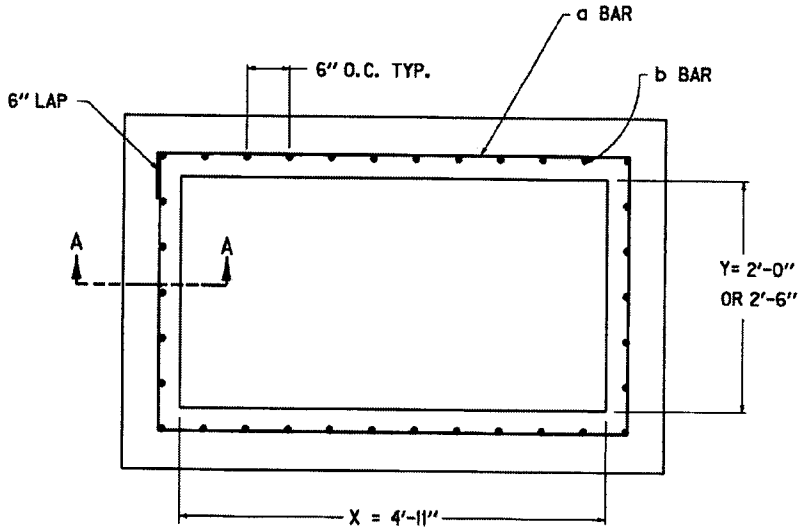
APPROVED _____ STATE HIGHWAY ENGINEER — DATE 12-1-99

ADDITIONAL STEEL REINFORCEMENT REQUIREMENTS

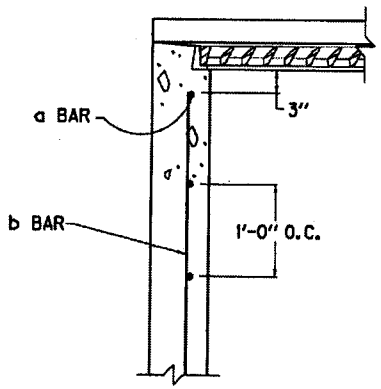
(RISER, H = 8'-0" TO 15'-0", GRADE AND SAG CONDITION)



GRADE CONDITION



SAG CONDITION



SECTION A-A

APPROXIMATE RISER QUANTITIES
PER FOOT IN HEIGHT-NO. 5 BARS

COND-ITION	SIZE X	SIZE Y	BAR a QTY.	BAR a LIN. FT.	BAR b QTY.	BAR b LIN. FT.	LBS STEEL
GRADE	2'-3"	2'-0"	1	10'-9"	20	1'-0"	32
		2'-6"	1	11'-6"	22		35
SAG	4'-11"	2'-0"	1	16'-1"	32		50
		2'-6"	1	17'-1"	34		53

USE WITH CUR. STD. DWGS.:
RDI-200, RDB-014, RDB-030, RDB-031, RDB-032, RDB-033, RDB-035

KENTUCKY
DEPARTMENT OF HIGHWAYS

DROP BOX INLET
TYPE 16
(ADDITIONAL STEEL- RISER)

STANDARD DRAWING NO. RDB-034-03

SUBMITTED _____ DIRECTOR, DIVISION OF DESIGN 12-1-99 DATE

APPROVED _____ STATE HIGHWAY ENGINEER 12-1-99 DATE

① ADDITIONAL STEEL REINFORCEMENT FOR PIPE CHAMBER
(H = 8' TO 15', GRADE CONDITION)

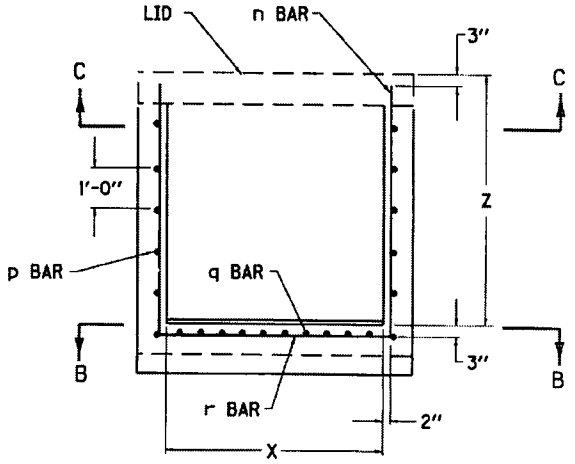
SIZE ②		NO. 5 STEEL BARS									
X	Y	BAR n ③		BAR p ④		BAR q		BAR r		LBS. ⑤	
		QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	TOTAL	⑥
2'-3"	2'-0"	20	6'-0"	6	10'-9"	4	2'-6"	4	2'-9"	214	32
	2'-6"	22			11'-9"		3'-0"	5		238	35
2'-6"	2'-0"				11'-3"	5	2'-6"	4	3'-0"	234	
	2'-6"	24			12'-3"		3'-0"	5		258	38
3'-0"	2'-0"					6	2'-6"	4	3'-6"	257	
	2'-6"	26			13'-3"		3'-0"	5		283	41
3'-6"	2'-0"					7	2'-6"	4	4'-0"	281	
	2'-6"	28			14'-3"		3'-0"	5		307	44
4'-0"	2'-0"					8	2'-6"	4	4'-6"	304	
	2'-6"	30			15'-3"		3'-0"	5		332	47
4'-6"	2'-0"					9	2'-6"	4	5'-0"	328	
	2'-6"	32			16'-3"		3'-0"	5		356	50
5'-0"	2'-0"					10	2'-6"	4	5'-6"	351	
	2'-6"	34			17'-3"		3'-0"	5		381	53

① ADDITIONAL STEEL REINFORCEMENT FOR PIPE CHAMBER
(H = 8' TO 15', SAG CONDITION)

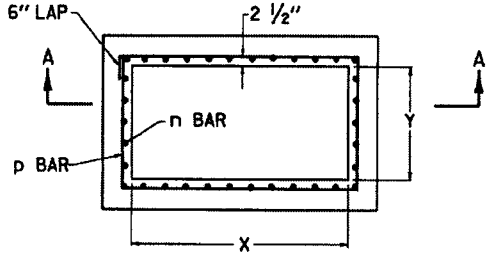
SIZE ②		NO. 5 STEEL BARS									
X	Y	BAR n ③		BAR p ④		BAR q		BAR r		LBS. ⑤	
		QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	TOTAL	⑥
4'-11"	2'-0"	32	6'-0"	6	16'-1"	10	2'-6"	4	5'-5"	350	50
	2'-6"	34			17'-1"		3'-0"	5		379	53

NOTES

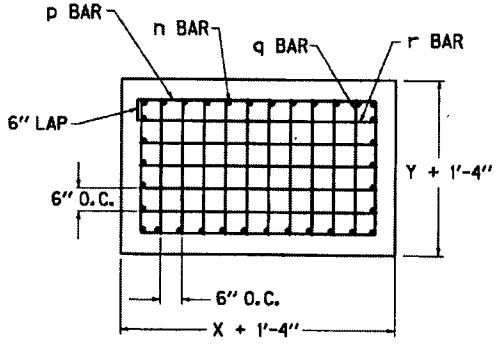
① BASED ON "Z" AS EQUAL TO 6'-0".
② SEE CUR. STD. DWG. RDB-030 FOR LOCATION AND DIMENSIONS.
③ LENGTH OF n BAR IS ALWAYS SAME AS "Z" DIMENSION.
④ ADD OR SUBTRACT ONE p BAR PER EVEN FOOT VARIANCE FROM 6'-0" Z .
⑤ NO DEDUCTIONS HAVE BEEN MADE FOR PIPE .
⑥ ADD OR SUBTRACT LBS. STEEL PER FT. VARIANCE FROM 6'-0" Z .
7. REINFORCEMENT SHALL HAVE A CLEAR DISTANCE OF 2" FROM THE FACE UNLESS OTHERWISE SHOWN .



SECTION A-A



SECTION C-C



SECTION B-B

USE WITH CUR. STD. DWGS.: RDI-200, RDB-014, RDB-030, RDB-031, RDB-032, RDB-033, RDB-034

KENTUCKY DEPARTMENT OF HIGHWAYS

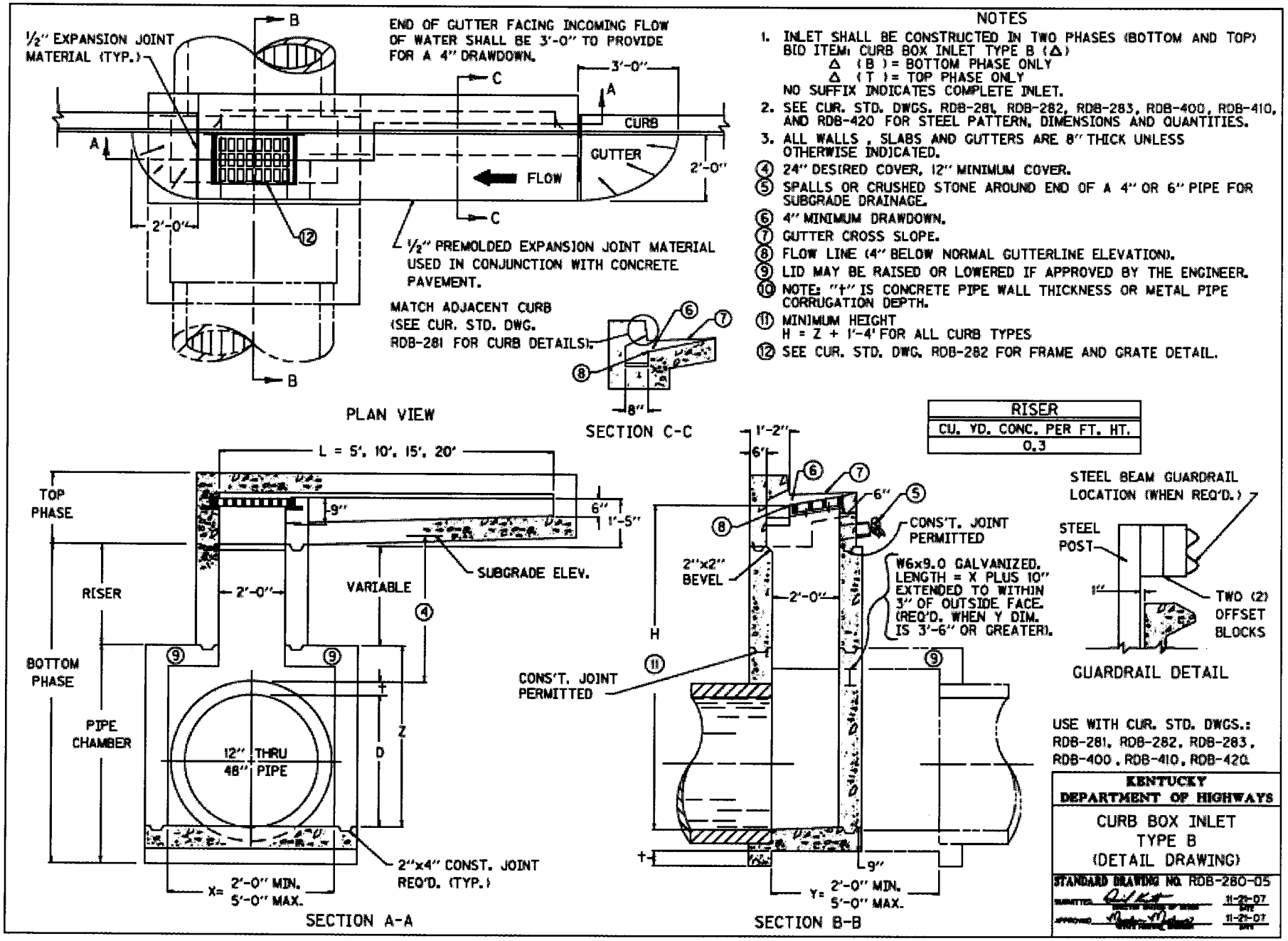
DROP BOX INLET TYPE 16

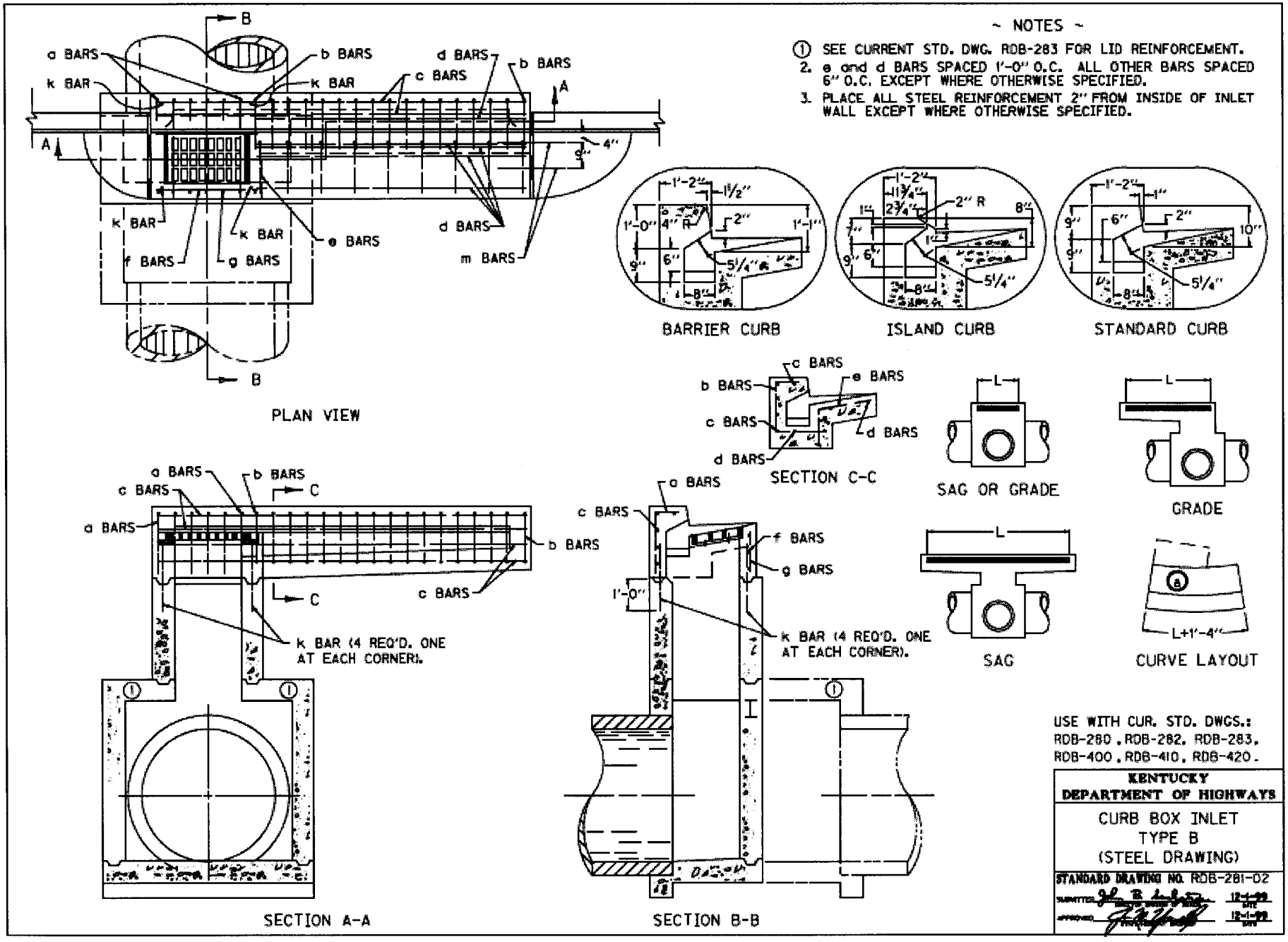
(ADDITIONAL STEEL- CHAMBER)

STANDARD DRAWING NO. RDB-035-03

SUBMITTED _____ DIRECTOR DIVISION OF DESIGN _____ 12-1-99 DATE

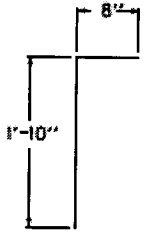
APPROVED _____ STATE HIGHWAY ENGINEER _____ 12-1-99 DATE


½" EXPANSION JOINT MATERIAL (TYP.)
END OF GUTTER FACING INCOMING FLOW OF WATER SHALL BE 3'-0" TO PROVIDE FOR A 4" DRAWDOWN.
3'-0"
CURB
GUTTER
FLOW
2'-0"
½" PREMOLDED EXPANSION JOINT MATERIAL USED IN CONJUNCTION WITH CONCRETE PAVEMENT.
MATCH ADJACENT CURB (SEE CUR. STD. DWG. RDB-281 FOR CURB DETAILS).
8"
PLAN VIEW
SECTION C-C
NOTES
1. INLET SHALL BE CONSTRUCTED IN TWO PHASES (BOTTOM AND TOP)
BID ITEM: CURB BOX INLET TYPE B (Δ)
Δ (B) = BOTTOM PHASE ONLY
Δ (T) = TOP PHASE ONLY
NO SUFFIX INDICATES COMPLETE INLET.
2. SEE CUR. STD. DWGS. RDB-281, RDB-282, RDB-283, RDB-400, RDB-410, AND RDB-420 FOR STEEL PATTERN, DIMENSIONS AND QUANTITIES.
3. ALL WALLS, SLABS AND GUTTERS ARE 8" THICK UNLESS OTHERWISE INDICATED.
④ 24" DESIRED COVER, 12" MINIMUM COVER.
⑤ SPALLS OR CRUSHED STONE AROUND END OF A 4" OR 6" PIPE FOR SUBGRADE DRAINAGE.
⑥ 4" MINIMUM DRAWDOWN.
⑦ GUTTER CROSS SLOPE.
⑧ FLOW LINE (4" BELOW NORMAL GUTTERLINE ELEVATION).
⑨ LID MAY BE RAISED OR LOWERED IF APPROVED BY THE ENGINEER.
⑩ NOTE: "t" IS CONCRETE PIPE WALL THICKNESS OR METAL PIPE CORRUGATION DEPTH.
⑪ MINIMUM HEIGHT
H = Z + 1'-4' FOR ALL CURB TYPES
⑫ SEE CUR. STD. DWG. RDB-282 FOR FRAME AND GRATE DETAIL.
RISER
CU. YD. CONC. PER FT. HT.
0.3
L = 5', 10', 15', 20'
TOP PHASE
9"
6"
1'-5"
SUBGRADE ELEV.
RISER
2'-0"
VARIABLE
BOTTOM PHASE
PIPE CHAMBER
12" THRU 48" PIPE
D
Z
2"x4" CONST. JOINT REQ'D. (TYP.)
X= 2'-0" MIN. 5'-0" MAX.
SECTION A-A
1'-2"
6"
6"
CONS'T. JOINT PERMITTED
2"x2" BEVEL
2'-0"
W6x9.0 GALVANIZED. LENGTH = X PLUS 10" EXTENDED TO WITHIN 3" OF OUTSIDE FACE. (REQ'D. WHEN Y DIM. IS 3'-6" OR GREATER).
H
CONS'T. JOINT PERMITTED
9"
Y= 2'-0" MIN. 5'-0" MAX.
SECTION B-B
STEEL BEAM GUARDRAIL LOCATION (WHEN REQ'D.)
STEEL POST
1"
TWO (2) OFFSET BLOCKS
GUARDRAIL DETAIL
USE WITH CUR. STD. DWGS.: RDB-281, RDB-282, RDB-283, RDB-400, RDB-410, RDB-420.
KENTUCKY DEPARTMENT OF HIGHWAYS
CURB BOX INLET TYPE B (DETAIL DRAWING)
STANDARD DRAWING NO. RDB-280-05
11-21-07
11-21-07

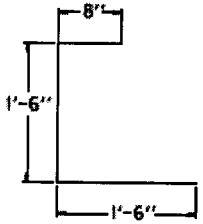

~ NOTES ~
① SEE CURRENT STD. DWG. RDB-283 FOR LID REINFORCEMENT.
2. e and d BARS SPACED 1'-0" O.C. ALL OTHER BARS SPACED 6" O.C. EXCEPT WHERE OTHERWISE SPECIFIED.
3. PLACE ALL STEEL REINFORCEMENT 2" FROM INSIDE OF INLET WALL EXCEPT WHERE OTHERWISE SPECIFIED.
a BARS
b BARS
c BARS
d BARS
e BARS
f BARS
g BARS
k BAR
m BARS
PLAN VIEW
BARRIER CURB
ISLAND CURB
STANDARD CURB
SECTION C-C
SAG OR GRADE
GRADE
SAG
CURVE LAYOUT
k BAR (4 REQ'D. ONE AT EACH CORNER).
SECTION A-A
SECTION B-B
USE WITH CUR. STD. DWGS.:
RDB-280, RDB-282, RDB-283,
RDB-400, RDB-410, RDB-420.
KENTUCKY DEPARTMENT OF HIGHWAYS
CURB BOX INLET
TYPE B
(STEEL DRAWING)
STANDARD DRAWING NO. RDB-281-02

DIMENSIONS AND ESTIMATE OF QUANTITIES (TOP PHASE)

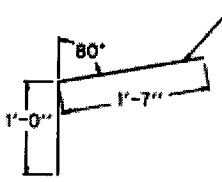
② SIZE NO.		THROAT "L"	CONC.	NO. 5 STEEL BARS																				
				BAR a		BAR b		BAR c		BAR d ④		BAR d ⑤		BAR e		BAR f		BAR g		BAR k ①		BAR m		LBS.
GRADE	SAG	FT.	CU. YD.	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	QTY.	LIN. FT.	
1	5	5'-0"	0.8	6	2'-6"	7	3'-7"	5	6'-0"	5	3'-0"	10	1'-6"	4	2'-7"	3	3'-0"	7	1'-2"	4	2'-0"	4	2'-0"	127
2	6	10'-0"	1.5			17			11'-0"		8'-0"		4'-0"	10										233
3	7	15'-0"	2.1			27			16'-0"		13'-0"		6'-6"	14										333
4	8	20'-0"	2.8			37			21'-0"		18'-0"		9'-0"	20										439



a BAR



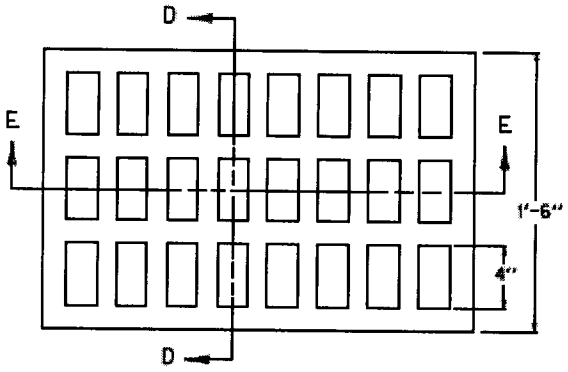
b BAR



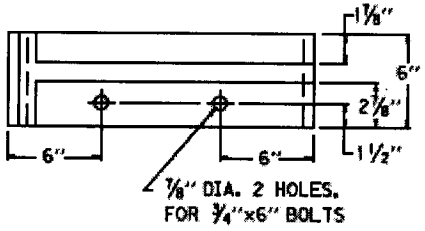
e BAR

~NOTES~

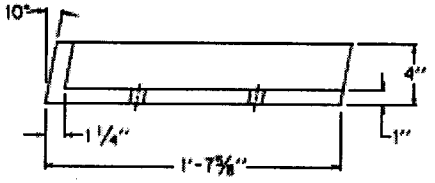
① USE k BARS ONLY IN CONJUNCTION WITH THE RISER.
② INLETS ARE SHOWN ON PLANS AS "CURB BOX INLET TYPE B". FOLLOWING THIS ON THE PLANS ARE TWO NUMBERS AND A BOX HEIGHT. USE SECOND NUMBER WITH THIS CHART.
3. MANUFACTURES' DRAFT WILL BE ACCEPTED ON ALL CASTINGS.
④ THIS SET OF d BARS ARE TO BE USED ONLY WHEN THE BOX INLET IS BUILT ON GRADE.
⑤ THIS SET OF d BARS ARE TO BE USED ONLY WHEN THE BOX INLET IS BUILT IN A SAG.
6. c, d, f, g, k, AND m BARS ARE ALL STRAIGHT BARS.
7. THE ENGINEER MAY REQUIRE ADDITIONAL REINFORCEMENT, TO ELIMINATE SETTLEMENT OF ADJOINING SIDEWALK WHEN APPLICABLE. THIS WORK SHALL BE INCIDENTAL TO THE COST OF THE CURB BOX.



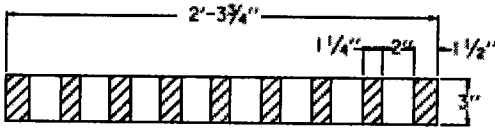
GRATE PLAN VIEW



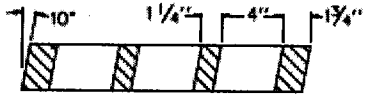
FRAME PLAN VIEW
(LEFT HALF)



FRAME ELEVATION



SECTION E-E



SECTION D-D

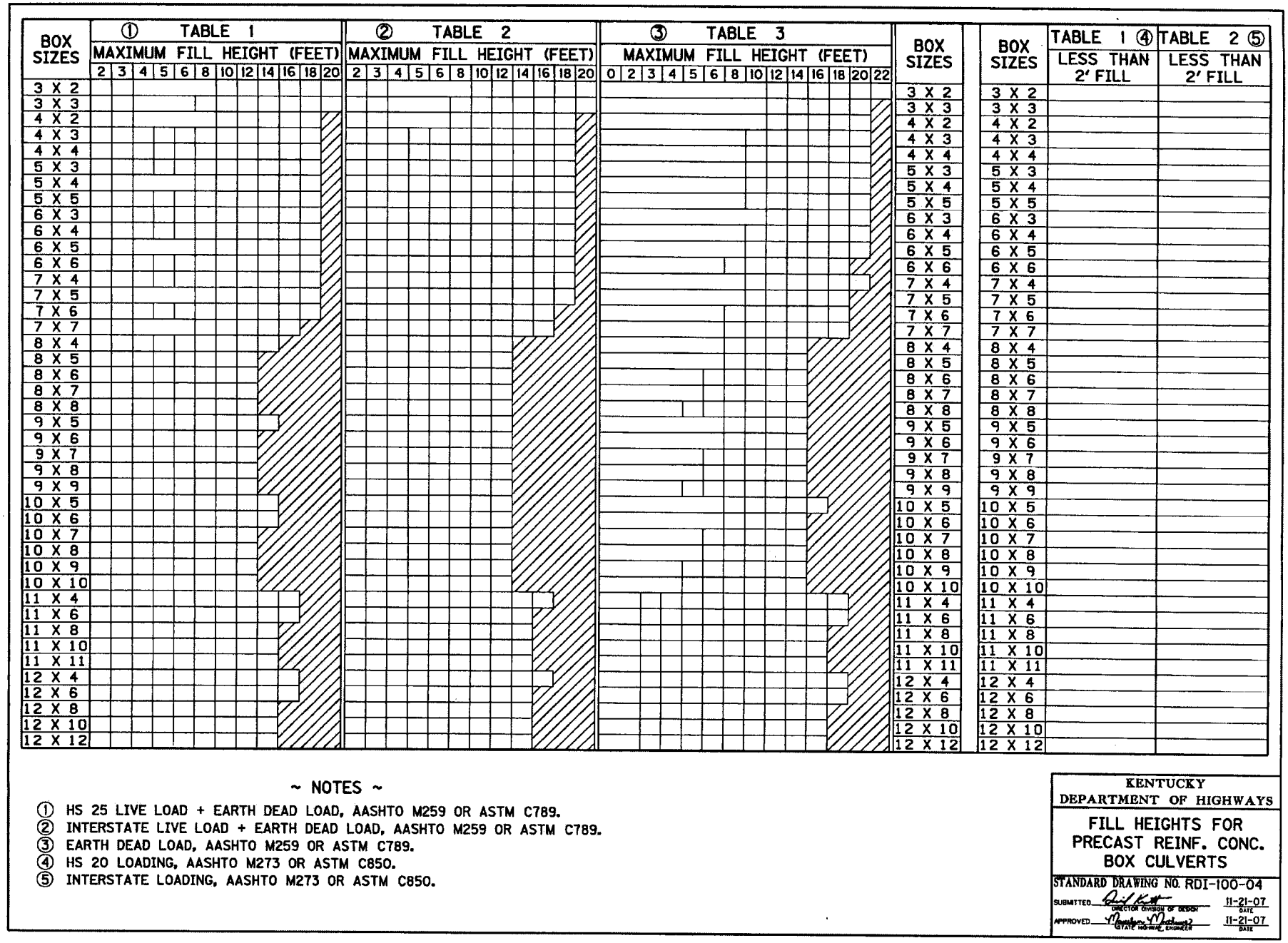
USE WITH CUR. STD. DWGS.
RDB-280, RDB-281, RDB-283
RDB-400, RDB-410, RDB-420

KENTUCKY
DEPARTMENT OF HIGHWAYS

CURB BOX INLET
TYPE B
(TOP PHASE TABLES)

STANDARD DRAWING NO. RDB-282-03

SUBMITTED 12-1-99 DATE
APPROVED 12-1-99 DATE



~ NOTES ~

① HS 25 LIVE LOAD + EARTH DEAD LOAD, AASHTO M259 OR ASTM C789.
② INTERSTATE LIVE LOAD + EARTH DEAD LOAD, AASHTO M259 OR ASTM C789.
③ EARTH DEAD LOAD, AASHTO M259 OR ASTM C789.
④ HS 20 LOADING, AASHTO M273 OR ASTM C850.
⑤ INTERSTATE LOADING, AASHTO M273 OR ASTM C850.

KENTUCKY
DEPARTMENT OF HIGHWAYS

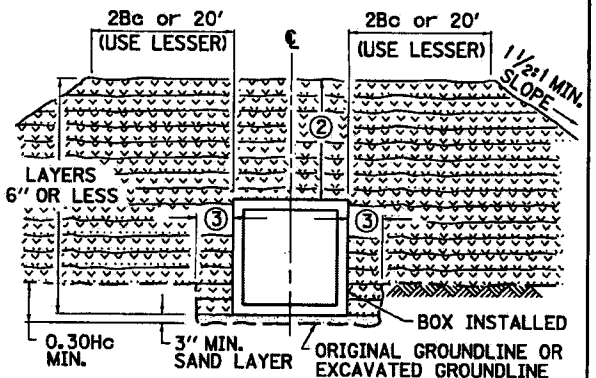
FILL HEIGHTS FOR PRECAST REINF. CONC. BOX CULVERTS

STANDARD DRAWING NO. RDI-100-04

SUBMITTED _____ DIRECTOR DIVISION OF DESIGN 11-21-07 DATE

APPROVED _____ STATE HIGHWAY ENGINEER 11-21-07 DATE

POSITIVE PROJECTION



a. IF ROCK FOUNDATION IS ENCOUNTERED, GO TO PARTS b. AND c. OF STEP 3 ZERO PROJECTION AND THEN PROCEED WITH PARTS b. AND c. OF THIS STEP .

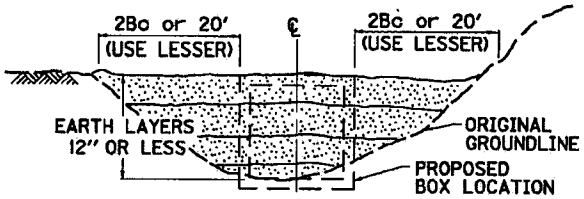
b. UNIFORMLY COMPACT SAND IN TRENCH WITH APPROXIMATELY 3" OF SAND BELOW BOTTOM OF BOX. LEVEL COMPACTED SAND WITH A TEMPLATE TO INSURE UNIFORM SUPPORT THROUGHOUT ENTIRE WIDTH AND LENGTH .

c. COMPACT SELECTED FINE SOIL TO ELEVATION ② IN LAYERS 6" OR LESS TO MEET SAME DENSITY REQUIREMENTS SPECIFIED FOR ADJACENT EMBANKMENT .

② 48" REQUIRED, IF FILL HEIGHT PERMITS .

③ 0.3 Bc OR 1'-0" (USE MAX.)

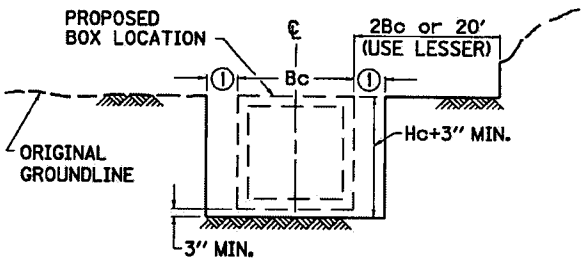
STEP 1 ZERO PROJECTION



a. IF ORIGINAL GROUNDLINE IS AT OR ABOVE THE TOP OF PROPOSED BOX FOR WIDTH OF 2Bc OR 20' (WHICHEVER IS LESS) ON EACH SIDE OF THE BOX, GO DIRECTLY TO STEP 2.

b. IF ORIGINAL GROUNDLINE IS BELOW THE TOP OF PROPOSED BOX, COMPACT EMBANKMENT IN LAYERS 12" OR LESS TO ELEVATION AND WIDTH SHOWN. MEET DENSITY REQUIREMENTS FOR ADJACENT EMBANKMENT.

STEP 2 ZERO PROJECTION

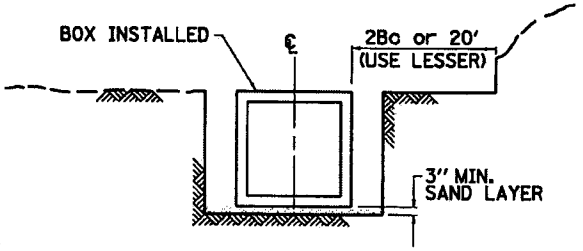


a. EXCAVATE TO TOP OF PROPOSED BOX A WIDTH OF 2Bc OR 20' (USE LESSER) ON EACH SIDE OF BOX.

b. EXCAVATE TRENCH TO WIDTH AND DEPTH SHOWN.

① AT LEAST 12", BUT NOT MORE THAN 15".

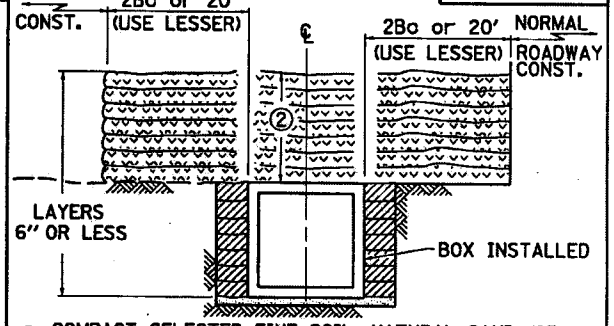
STEP 4 ZERO PROJECTION



a. UNIFORMLY COMPACT SAND IN TRENCH WITH APPROXIMATELY 3" OF SAND BELOW BOTTOM OF BOX. LEVEL COMPACTED SAND WITH A TEMPLATE TO INSURE UNIFORM SUPPORT THROUGHOUT ENTIRE WIDTH AND LENGTH.

b. INSTALL BOX AT CORRECT ALIGNMENT AND ELEVATION. RECOMPACT ANY LOOSE SAND DISTURBED DURING INSTALLATION.

STEP 5 ZERO PROJECTION



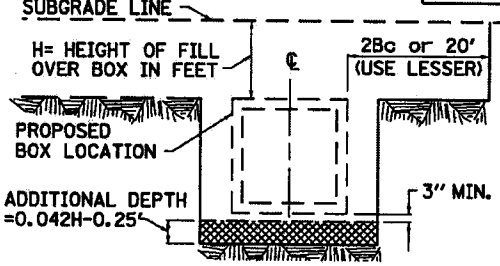
a. COMPACT SELECTED FINE SOIL, NATURAL SAND, OR NO. 10 COARSE AGGREGATE IN LAYERS 6" OR LESS TO TOP OF THE BOX. THEN COMPACT SELECTED FINE SOIL TO ELEVATION ② ABOVE TOP OF BOX. MEET DENSITY REQUIREMENTS FOR ADJACENT EMBANKMENT.

b. PROCEED WITH NORMAL ROADWAY CONSTRUCTION.

② 48" REQUIRED, IF FILL HEIGHT PERMITS.

ROCK FOUNDATION DETAILS

STEP 3 ZERO PROJECTION



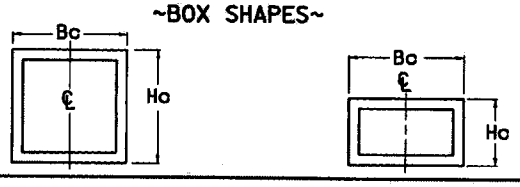
a. IF ROCK FOUNDATION IS NOT ENCOUNTERED, GO DIRECTLY TO STEP 4.

b. IF ROCK FOUNDATION IS ENCOUNTERED, EXCAVATE ADDITIONAL TRENCH DEPTH USING FORMULA GIVEN. THIS ADDITIONAL DEPTH SHALL ALWAYS BE AT LEAST 0.75' AND WILL NOT BE REQUIRED TO BE MORE THAN 0.75HC-0.25', REGARDLESS OF ABOVE FORMULA RESULT.

c. BACKFILL ADDITIONAL EXCAVATED AREA WITH EARTH CUSHION OF FIRMLY COMPACTED FINE SOILS IN LAYERS 6" OR LESS.

NOTE: THE CONTRACTOR HAS THE OPTION TO, EITHER BED AND BACKFILL THE PRECAST BOX IN POSITIVE PROJECTION AS DESCRIBED ABOVE, OR MAY BED AND BACKFILL TO ZERO PROJECTION AS DETAILED AND DESCRIBED IN STEPS 1 THRU 5. IN EITHER CASE PARTS b. AND c. OF STEP 3 ZERO PROJECTION MUST BE PERFORMED IN THE EVENT ROCK FOUNDATION IS ENCOUNTERED.

~BOX SHAPES~



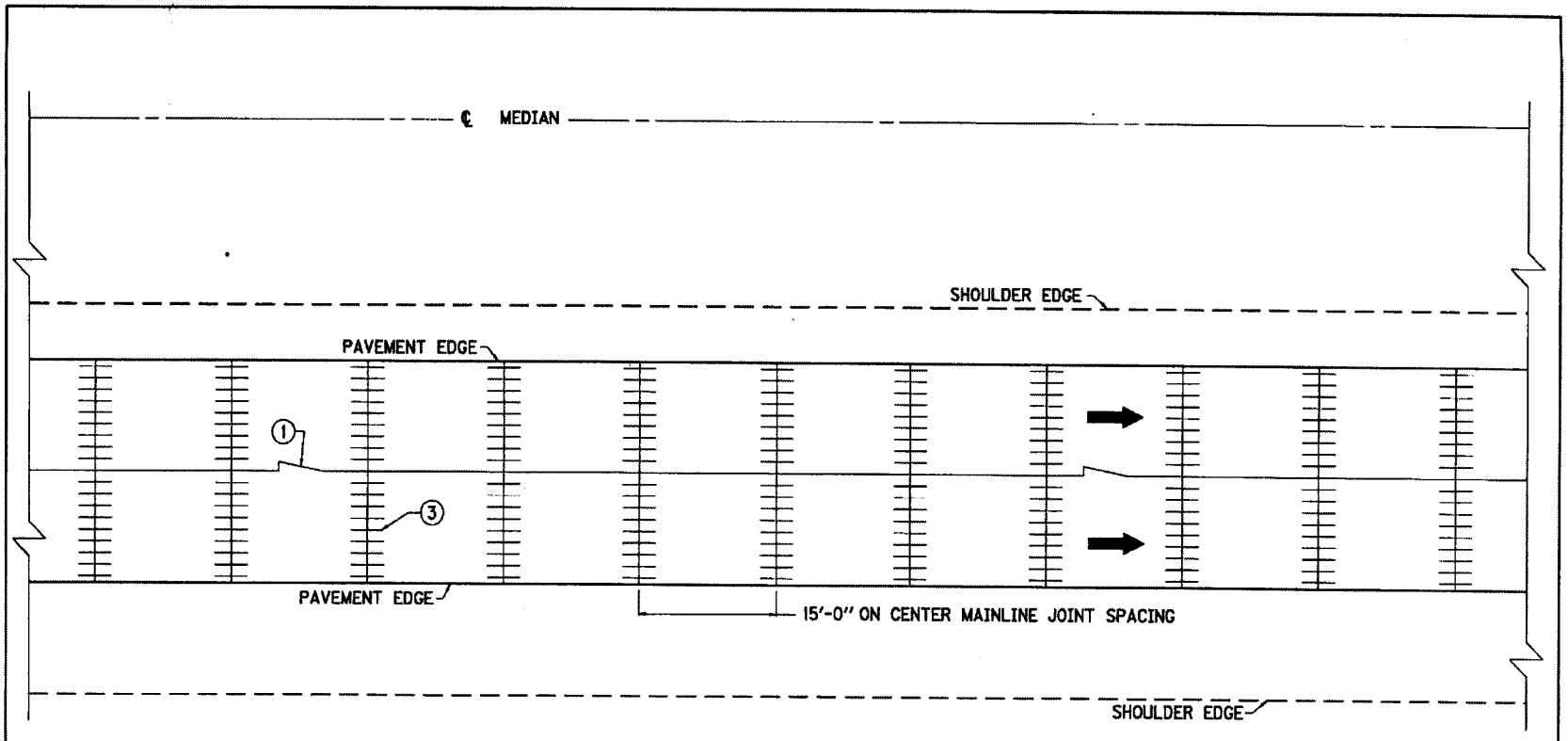
KENTUCKY
DEPARTMENT OF HIGHWAYS

BEDDING FOR PRECAST BOX CULVERTS, SEWERS, STORM DRAINS, AND THEIR COMBINATIONS

STANDARD DRAWING NO. RDI-120-03

SUBMITTED _____ DIRECTOR DIVISION OF DESIGN 12-1-99 DATE

APPROVED _____ STATE HIGHWAY ENGINEER 12-1-99 DATE



PLAN VIEW

NOTES

JOINTS

TRANSVERSE CONTRACTION JOINTS SHALL BE SPACED 15'-0" ON CENTER AND SAWED TO A MINIMUM DEPTH OF ONE THIRD OF THE PAVEMENT THICKNESS (T/3) OR 4" WHICHEVER IS LESS. ALL TRANSVERSE CONTRACTION AND TRANSVERSE EXPANSION JOINTS SHALL REQUIRE LOAD TRANSFER ASSEMBLIES AS DETAILED ON THE PLANS OR STANDARD DRAWINGS.

JOINT SPACING AND TYPE, AT BRIDGE ENDS, SHALL BE REQUIRED AS SHOWN ON THE PLANS OR CURRENT STANDARD DRAWING RPS-010.

TRANSVERSE CONSTRUCTION JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 501.03.17.

(1) (3) SEE CURRENT STANDARD DRAWING RPS-010 FOR JOINT SYMBOLS AND DETAILS.

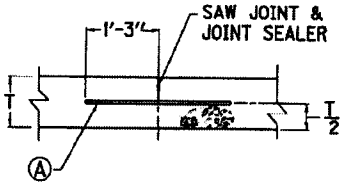
KENTUCKY
DEPARTMENT OF HIGHWAYS

JOINTED PLAIN
CONCRETE PAVEMENT

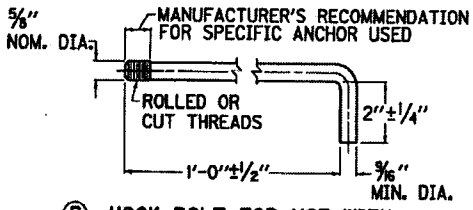
STANDARD DRAWING NO. RPN-015-04

SUBMITTED _____ DIRECTOR DIVISION OF DESIGN 12-2-02 DATE

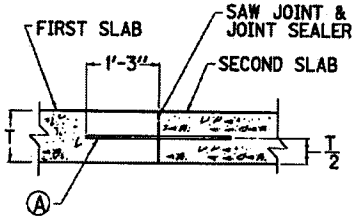
APPROVED _____ STATE HIGHWAY ENGINEER 12-2-02 DATE



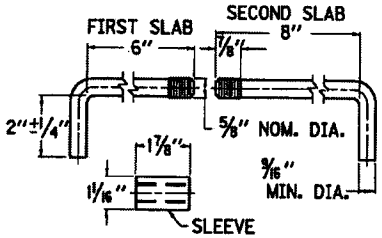
① LONGITUDINAL SAWED JOINT



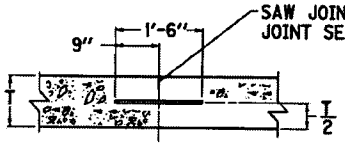
Ⓑ HOOK BOLT FOR USE WITH EXPANSION ANCHOR
(SEE STANDARD SPECIFICATIONS FOR BASIS OF PAYMENT)



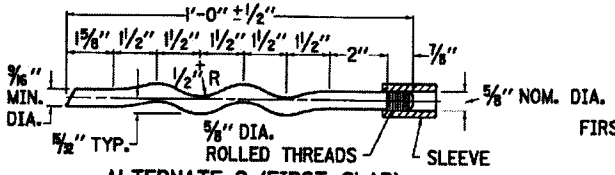
② LONGITUDINAL SAWED CONSTRUCTION JOINT



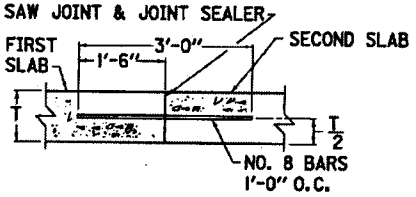
ALTERNATE 1
HOOK BOLTS FOR
CONSTRUCTION JOINTS



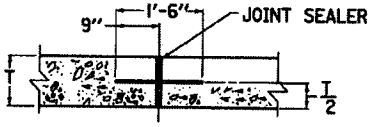
③ TRANSVERSE SAWED CONTRACTION JOINT



ALTERNATE 2 (FIRST SLAB)
DEFORMED ANCHOR BOLT
(TO BE USED WITH 8" HOOK BOLT)



④ TRANSVERSE SAWED CONSTRUCTION JOINT



⑤ TRANSVERSE EXPANSION JOINT

5/8" PLASTIC INSERT

JOINT SYMBOLS

- ① LONGITUDINAL SAWED JOINT
- ② LONGITUDINAL SAWED CONSTRUCTION JOINT
- ③ TRANSVERSE SAWED CONTRACTION JOINT
- ④ TRANSVERSE SAWED CONSTRUCTION JOINT (1'-0" MIN.)
- ⑤ TRANSVERSE EXPANSION JOINT
- 1a LONGITUDINAL SAWED JOINT (WITHOUT TIE BARS)
- 2a LONGITUDINAL SAWED CONSTRUCTION JOINT (WITHOUT TIE BARS)
- 3a TRANSVERSE SAWED CONTRACTION JOINT (WITHOUT LOAD TRANSFER ASSEMBLY)
- 4a TRANSVERSE SAWED CONSTRUCTION JOINT (WITHOUT TIE BARS)
- 5a 1/2" TRANSVERSE EXPANSION JOINT (WITHOUT LOAD TRANSFER ASSEMBLY)

NOTES

LONGITUDINAL JOINTS SHALL BE USED WHEN SHOWN ON THE TYPICAL SECTION, AND STANDARD DRAWINGS AND SHALL BE CONSTRUCTED AS SHOWN ON THIS DRAWING.

LONGITUDINAL CONSTRUCTION JOINTS BETWEEN ADJOINING SLABS, AND PAVED IN SEPARATE OPERATIONS SHALL USE HOOK-BOLTS OR TIE BARS AND BE CONSTRUCTED AS SHOWN ON THIS DRAWING.

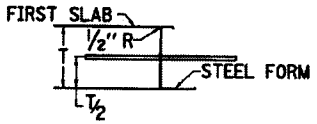
IN LIEU OF THE DEFORMED TIE BARS THE CONTRACTOR SHALL BE PERMITTED TO USE EITHER ALT. 1 OR ALT. 2 HOOK BOLT AS DETAILED.

SLIP-FORM PAVEMENT

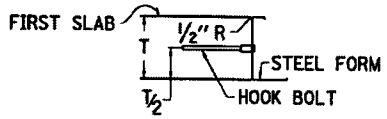
④ DEFORMED TIE BARS USED IN TRANSVERSE CONSTRUCTION JOINTS SHALL BE NO CLOSER THAN 6" TO THE PAVEMENT EDGE OR ANY LONGITUDINAL JOINT.

Ⓐ NO. 5 DEFORMED TIE BAR 2'-6" LONG PLACED 1'-8" ON CENTER AND PLACED 1'-8" MINIMUM FROM ANY TRANSVERSE JOINT.

Ⓑ EXPANSION ANCHOR FOR BOLT SIZE INDICATED SHALL BE BETHLEHEM MINE ROOF EXPANSION TYPE WITH K-1 SHELL , PHILLIPS RED HEAD ANCHOR, CHICAGO EXPANSION BOLT CO. - SPECIAL FLUSH SELF DRILLING ANCHOR , OR APPROVED TYPE. INSTALLATION SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION. HOOK BOLTS WITH EXPANSION ANCHORS ATTACHED SHALL NOT BE LESS THAN 14" IN LENGTH. HOOK BOLTS WITH EXPANSION ANCHORS SHALL BE SPACED 5'-0" O.C.



TYPE A



TYPE B

METHODS OF FORMING CONSTRUCTION JOINTS WHEN FORMS ARE USED

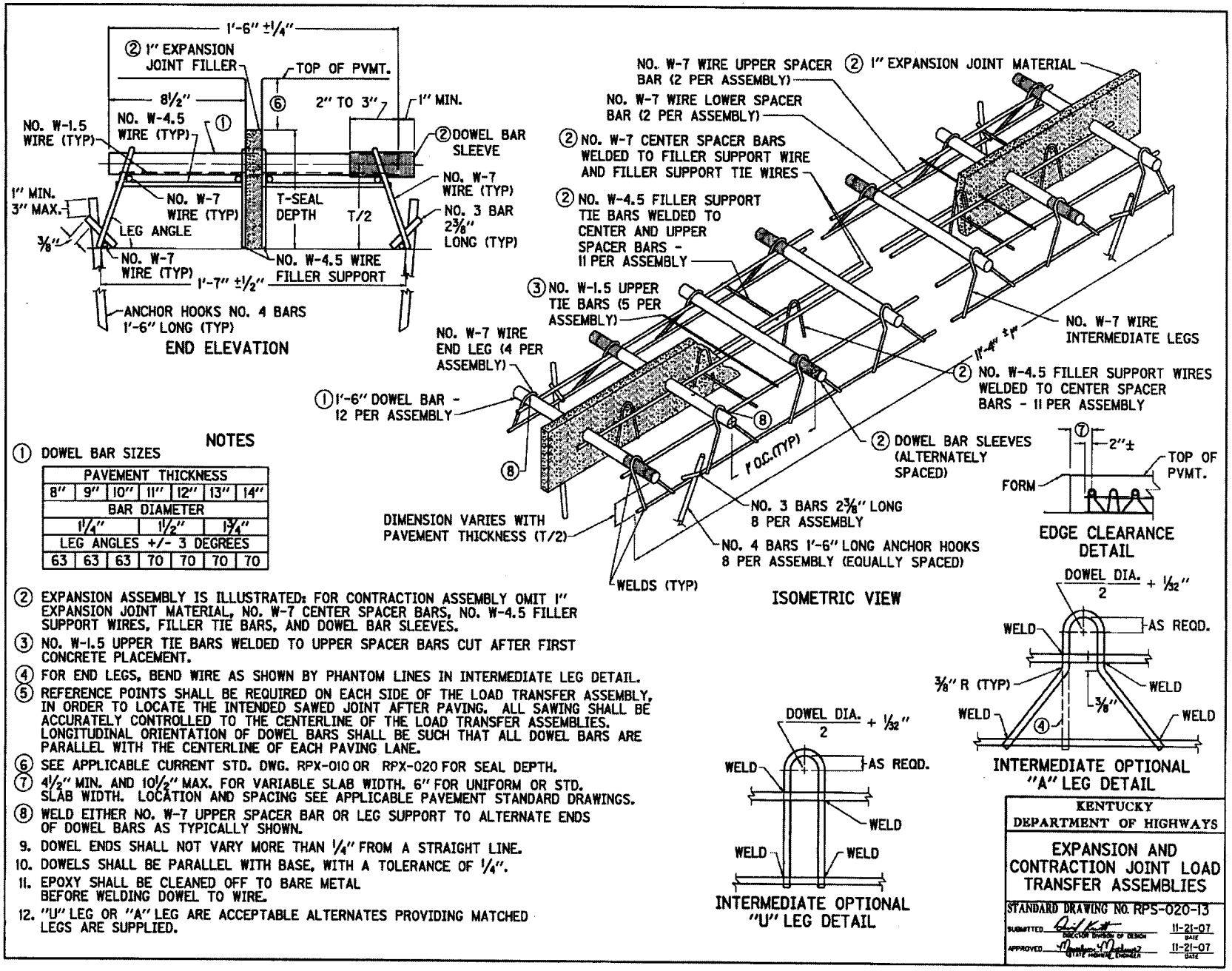
KENTUCKY
DEPARTMENT OF HIGHWAYS

CONCRETE PAVEMENT
JOINT DETAILS

STANDARD DRAWING NO. RPS-010-10

SUBMITTED _____ DIRECTOR DIVISION OF DESIGN 12-2-02 DATE

APPROVED _____ STATE HIGHWAY ENGINEER 12-2-02 DATE



NOTES

① DOWEL BAR SIZES

PAVEMENT THICKNESS						
8"	9"	10"	11"	12"	13"	14"
BAR DIAMETER						
1 1/4"			1 1/2"		1 3/4"	
LEG ANGLES +/- 3 DEGREES						
63	63	63	70	70	70	70

② EXPANSION ASSEMBLY IS ILLUSTRATED: FOR CONTRACTION ASSEMBLY OMIT 1" EXPANSION JOINT MATERIAL, NO. W-7 CENTER SPACER BARS, NO. W-4.5 FILLER SUPPORT WIRES, FILLER TIE BARS, AND DOWEL BAR SLEEVES.

③ NO. W-1.5 UPPER TIE BARS WELDED TO UPPER SPACER BARS CUT AFTER FIRST CONCRETE PLACEMENT.

④ FOR END LEGS, BEND WIRE AS SHOWN BY PHANTOM LINES IN INTERMEDIATE LEG DETAIL.

⑤ REFERENCE POINTS SHALL BE REQUIRED ON EACH SIDE OF THE LOAD TRANSFER ASSEMBLY, IN ORDER TO LOCATE THE INTENDED SAWED JOINT AFTER PAVING. ALL SAWING SHALL BE ACCURATELY CONTROLLED TO THE CENTERLINE OF THE LOAD TRANSFER ASSEMBLIES. LONGITUDINAL ORIENTATION OF DOWEL BARS SHALL BE SUCH THAT ALL DOWEL BARS ARE PARALLEL WITH THE CENTERLINE OF EACH PAVING LANE.

⑥ SEE APPLICABLE CURRENT STD. DWG. RPX-010 OR RPX-020 FOR SEAL DEPTH.

⑦ 4 1/2" MIN. AND 10 1/2" MAX. FOR VARIABLE SLAB WIDTH. 6" FOR UNIFORM OR STD. SLAB WIDTH. LOCATION AND SPACING SEE APPLICABLE PAVEMENT STANDARD DRAWINGS.

⑧ WELD EITHER NO. W-7 UPPER SPACER BAR OR LEG SUPPORT TO ALTERNATE ENDS OF DOWEL BARS AS TYPICALLY SHOWN.

9. DOWEL ENDS SHALL NOT VARY MORE THAN 1/4" FROM A STRAIGHT LINE.

10. DOWELS SHALL BE PARALLEL WITH BASE, WITH A TOLERANCE OF 1/4".

11. EPOXY SHALL BE CLEANED OFF TO BARE METAL BEFORE WELDING DOWEL TO WIRE.

12. "U" LEG OR "A" LEG ARE ACCEPTABLE ALTERNATES PROVIDING MATCHED LEGS ARE SUPPLIED.

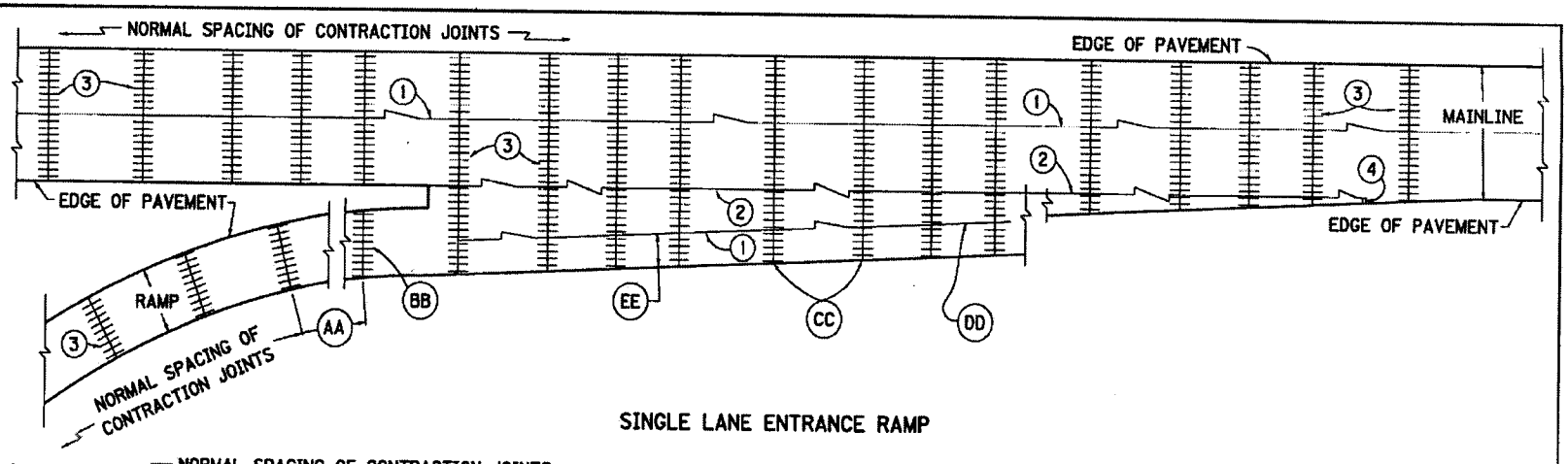
KENTUCKY DEPARTMENT OF HIGHWAYS

EXPANSION AND CONTRACTION JOINT LOAD TRANSFER ASSEMBLIES

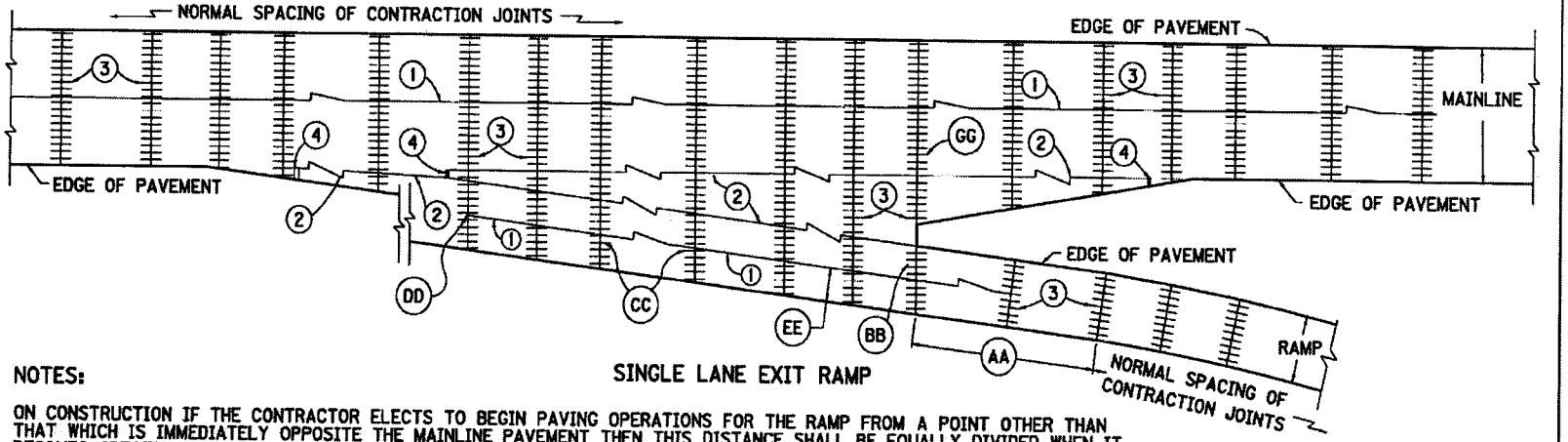
STANDARD DRAWING NO. RPS-020-13

SUBMITTED: DIRECTOR DIVISION OF DESIGN — 11-21-07 DATE

APPROVED: STATE HIGHWAY ENGINEER — 11-21-07 DATE



SINGLE LANE ENTRANCE RAMP



SINGLE LANE EXIT RAMP

NOTES:

(AA) ON CONSTRUCTION IF THE CONTRACTOR ELECTS TO BEGIN PAVING OPERATIONS FOR THE RAMP FROM A POINT OTHER THAN THAT WHICH IS IMMEDIATELY OPPOSITE THE MAINLINE PAVEMENT THEN THIS DISTANCE SHALL BE EQUALLY DIVIDED WHEN IT BECOMES GREATER THAN 20 FEET AND LESS THAN 40 FEET.

(BB) THIS CONTRACTION JOINT IN THE RAMP SHALL ALWAYS BE OPPOSITE THE CONTRACTION JOINT IN THE MAINLINE PAVEMENT.

(CC) ALL CONTRACTION JOINTS IN THE RAMP IMMEDIATELY OPPOSITE THE MAINLINE PAVEMENT SHALL BE A CONTINUATION OF THE JOINTS IN THE MAINLINE PAVEMENT.

(DD) LONGITUDINAL SAWED JOINT SHALL END AT THE NEAREST CONTRACTION JOINT, WHERE THE OVERALL WIDTH OF THE RAMP IS A MAXIMUM OF 16 FEET.

(EE) THIS DISTANCE SHALL BE EQUAL TO ½ THE NORMAL RAMP SECTION.

FF. LONGITUDINAL SAWED JOINTS AT CENTERLINE SHALL BE REQUIRED FOR ALL RAMPS AND LOOP WIDTHS GREATER THAN 16 FEET.

(GG) THIS CONTRACTION JOINT SHALL ALWAYS BE PLACED OPPOSITE THE NOSE OF THE RAMP. THE TWO CONTRACTION JOINTS IMMEDIATELY PRECEEDING THIS JOINT, DEPENDING ON THE DIRECTION OF PAVING OPERATIONS, SHALL BE EQUALLY DIVIDED, PROVIDED THE SPACING DOES NOT EXCEED THE NORMAL SPACING. SHOULD SPACING BE GREATER THAN NORMAL, AN EXTRA JOINT SHALL BE ADDED AND THE DISTANCE EQUALLY DIVIDED. THE JOINT IMMEDIATELY FOLLOWING THE JOINT THAT IS PLACED OPPOSITE THE RAMP NOSE SHALL BE NORMALLY SPACED.

HH. SEE CURRENT STANDARD DRAWING RPS-010 FOR JOINT SYMBOLS AND DETAILS.

II. NORMAL SPACING OF CONTRACTION JOINTS INDICATED ON THIS DRAWING ARE TO BE IN ACCORDANCE WITH SPACING INDICATED ON CURRENT STANDARD DRAWING RPN-015 .

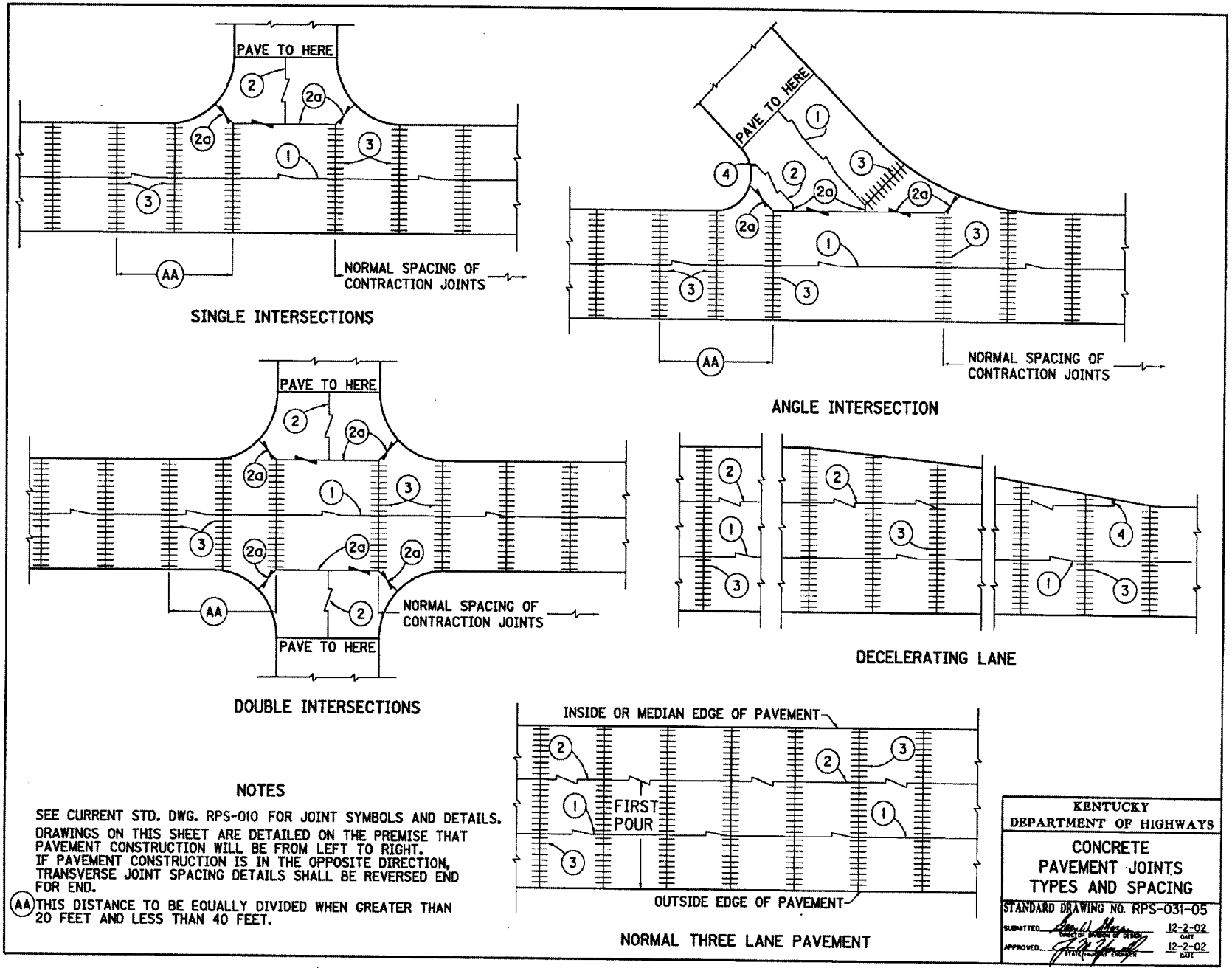
KENTUCKY
DEPARTMENT OF HIGHWAYS

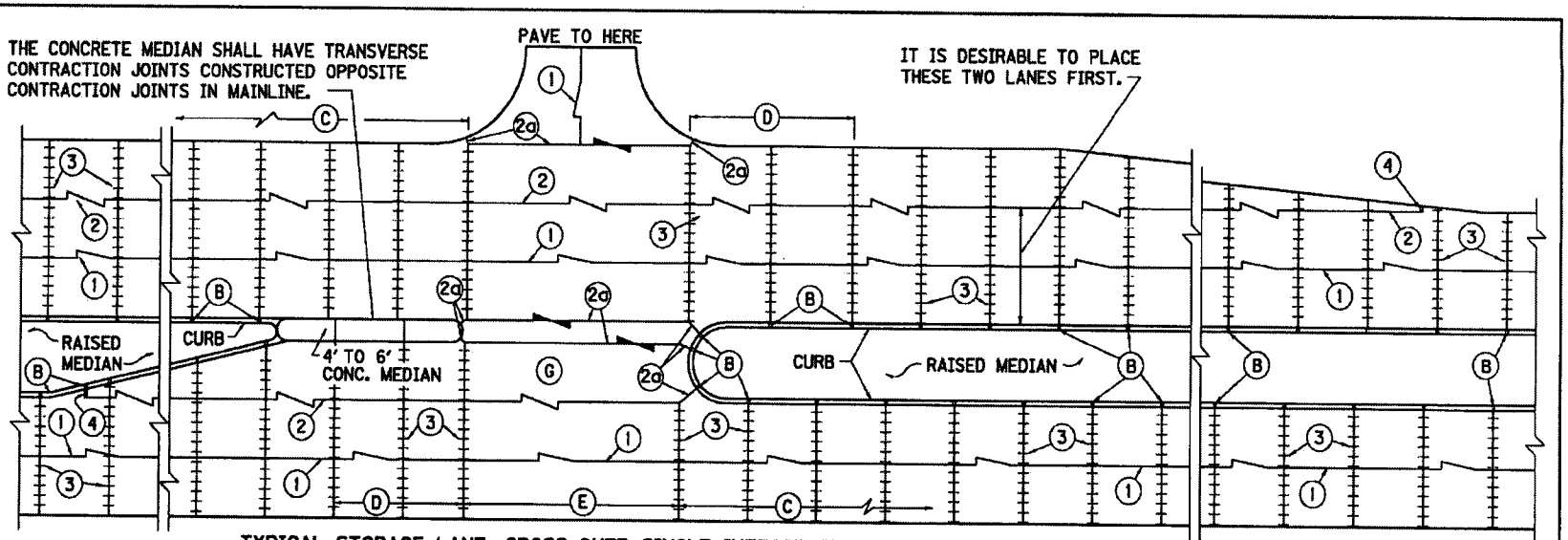
CONCRETE PAVEMENT JOINTS TYPES AND SPACING

STANDARD DRAWING NO. RPS-030-05

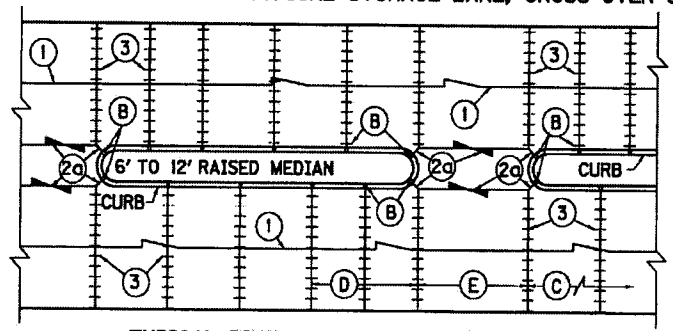
SUBMITTED _____ DIRECTOR DIVISION OF DESIGN 12-2-02 DATE

APPROVED _____ STATE HIGHWAY ENGINEER 12-2-02 DATE

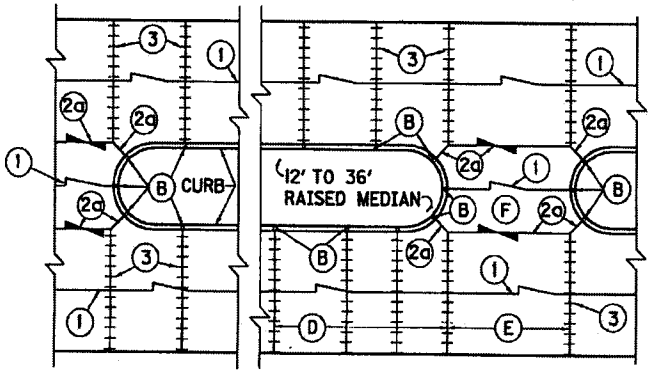

PAVE TO HERE
2
2a
2a
1
3
3
AA
NORMAL SPACING OF CONTRACTION JOINTS
SINGLE INTERSECTIONS
PAVE TO HERE
1
4
2
2a
3
2a
2a
1
3
3
3
AA
NORMAL SPACING OF CONTRACTION JOINTS
ANGLE INTERSECTION
PAVE TO HERE
2
2a
2a
1
3
3
2a
2a
2a
AA
2
NORMAL SPACING OF CONTRACTION JOINTS
PAVE TO HERE
DOUBLE INTERSECTIONS
2
2
1
3
3
3
4
1
3
DECELERATING LANE
INSIDE OR MEDIAN EDGE OF PAVEMENT
2
2
3
1
FIRST POUR
1
3
OUTSIDE EDGE OF PAVEMENT
NORMAL THREE LANE PAVEMENT
NOTES
SEE CURRENT STD. DWG. RPS-010 FOR JOINT SYMBOLS AND DETAILS.
DRAWINGS ON THIS SHEET ARE DETAILED ON THE PREMISE THAT PAVEMENT CONSTRUCTION WILL BE FROM LEFT TO RIGHT. IF PAVEMENT CONSTRUCTION IS IN THE OPPOSITE DIRECTION, TRANSVERSE JOINT SPACING DETAILS SHALL BE REVERSED END FOR END.
(AA) THIS DISTANCE TO BE EQUALLY DIVIDED WHEN GREATER THAN 20 FEET AND LESS THAN 40 FEET.
KENTUCKY DEPARTMENT OF HIGHWAYS
CONCRETE PAVEMENT JOINTS TYPES AND SPACING
STANDARD DRAWING NO. RPS-031-05
SUBMITTED
DIRECTOR DIVISION OF DESIGN
12-2-02
DATE
APPROVED
STATE HIGHWAY ENGINEER
12-2-02
DATE



TYPICAL STORAGE LANE, CROSS-OVER SINGLE INTERSECTION, ACCELERATING AND DECELERATING LANE



TYPICAL DIVIDED PAVEMENT WITH NARROW RAISED MEDIAN AND CROSS-OVER



TYPICAL DIVIDED PAVEMENT WITH WIDE RAISED MEDIAN AND CROSS-OVER

NOTES:

SEE CURRENT STD. DWG. RPS-010 FOR JOINT SYMBOLS AND DETAIL.

ALL INTEGRAL CURBS CONSTRUCTED WITH CONCRETE BASE OR PAVEMENT SHALL HAVE JOINTS COINCIDING WITH THE TRANSVERSE JOINTS AND OTHER JOINTS SHOWN ON THIS STANDARD DRAWING. THE JOINTS SHALL BE FILLED WITH ½" PREMOLDED EXPANSION JOINT FILLER, CUT TO THE REQUIRED SECTION.

(B) ½" EXPANSION JOINT FILLER.

(C) NORMAL SPACING OF CONTRACTION JOINTS 15'-0" ON CENTER.

(D) THIS DISTANCE TO BE EQUALLY DIVIDED WHEN GREATER THAN 20 FEET AND LESS THAN 40 FEET.

(E) NO CONTRACTION JOINT REQUIRED WHEN DISTANCE LESS THAN NORMAL SPACING OF JOINTS. EQUALLY DIVIDED WHEN DISTANCE IS GREATER THAN 20 FEET AND LESS THAN 40 FEET.

(F) A LONGITUDINAL SAWED JOINT SHALL BE CONSTRUCTED IN THE CROSS-OVER WHEN THE WIDTH OF CROSS-OVER BECOMES GREATER THAN 16 FEET AND LESS THAN 24 FEET. WHEN WIDTH BECOMES GREATER THAN 24 FEET A LONGITUDINAL SAWED AND LONGITUDINAL CONSTRUCTION JOINT SHALL BE CONSTRUCTED IN THE CROSS-OVER.

(G) SHOULD THE CROSS-OVER LENGTH BECOME GREATER THAN NORMAL SPACING OF CONTRACTION JOINTS A TRANSVERSE CONTRACTION JOINT SHALL BE PLACED IN THE CROSS-OVER OPPOSITE THE CONTRACTION JOINTS IN THE MAINLINE.

USE WITH CUR. STD. DWG. RPS-010

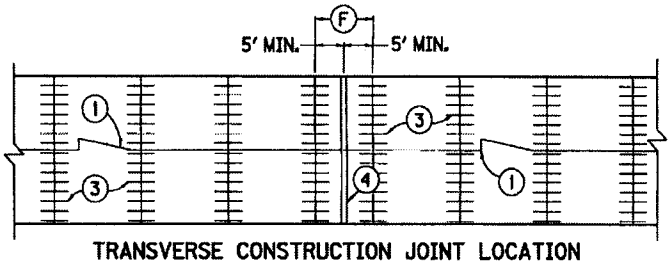
KENTUCKY DEPARTMENT OF HIGHWAYS

CONCRETE PAVEMENT JOINTS TYPES AND SPACING

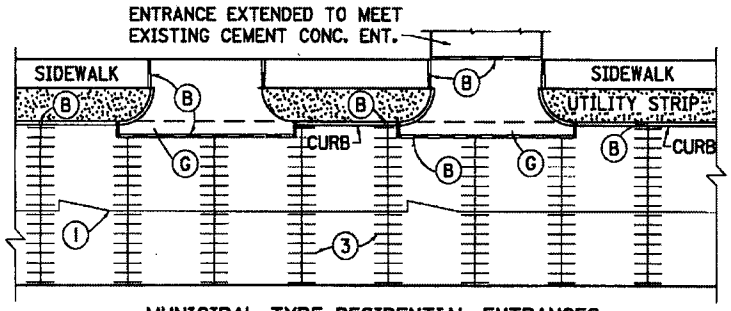
STANDARD DRAWING NO. RPS-032-05

SUBMITTED ... DIRECTOR, DIVISION OF DESIGN ... 12-2-02 DATE

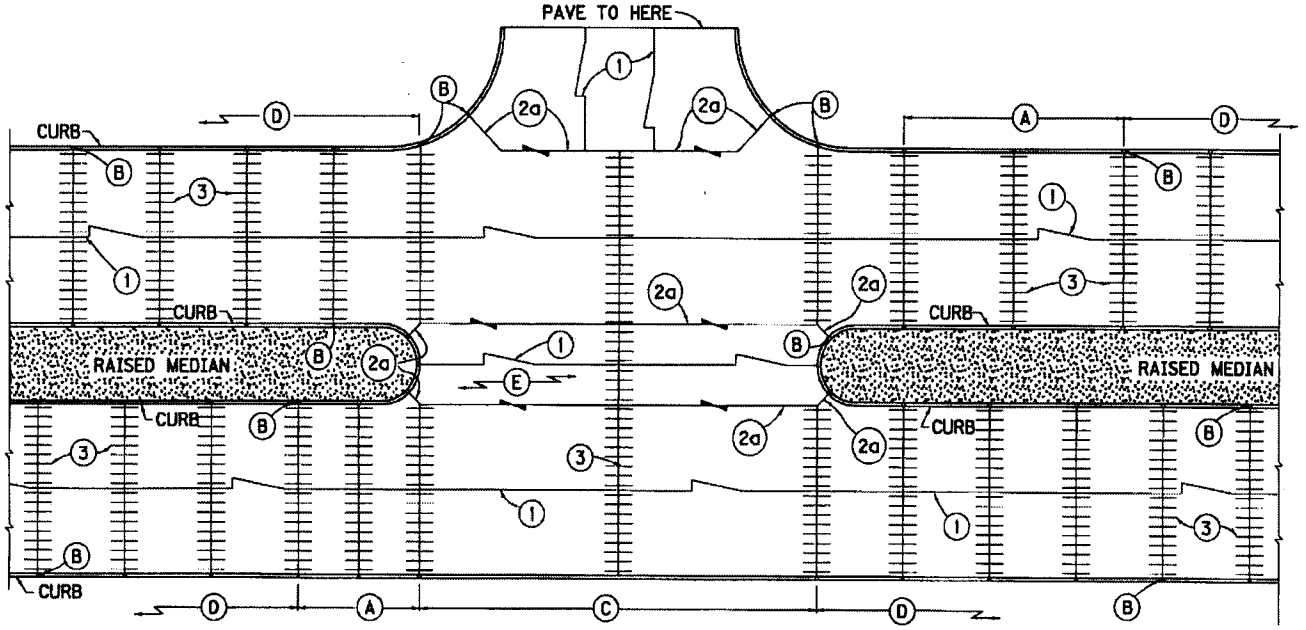
APPROVED ... STATE HIGHWAY ENGINEER ... 12-2-02 DATE



TRANSVERSE CONSTRUCTION JOINT LOCATION



MUNICIPAL TYPE RESIDENTIAL ENTRANCES



TYPICAL DIVIDED LANE WITH CROSSOVER AND CURB

NOTES

1. SEE CURRENT STANDARD DRAWING RPS-010 FOR JOINT SYMBOLS AND DETAILS.
2. THE INSTALLATION OF LONGITUDINAL SAWED AND CONSTRUCTION JOINTS IN TURNOUTS SHALL DEPEND ON WIDTH OF TURNOUT WITH THE RULE THAT 16 FEET SHALL BE MAXIMUM POUR WITHOUT CONSTRUCTION OF A LONGITUDINAL JOINT.
3. ALL INTEGRAL CURBS CONSTRUCTED WITH CONCRETE BASE OR PAVEMENT SHALL HAVE JOINTS COINCIDING WITH THE TRANSVERSE JOINTS AND OTHER JOINTS SHOWN ON THIS STANDARD DRAWING. THE JOINTS SHALL BE FILLED WITH ½" PREMOLDED EXPANSION JOINT FILLER, CUT TO REQUIRED SECTION.

(A) THIS DISTANCE TO BE EQUALLY DIVIDED WHEN GREATER THAN 20' AND LESS THAN 40'.
(B) ½" EXPANSION JOINT FILLER.
(C) THIS DISTANCE TO BE EQUALLY DIVIDED WHEN GREATER THAN 20' AND LESS THAN 40'. NO TRANSVERSE JOINT WILL BE REQUIRED IF DISTANCE IS LESS THAN NORMAL SPACING OF JOINTS.
(D) NORMAL SPACING OF CONTRACTION JOINTS.
(E) EQUALLY DIVIDE AND CONSTRUCT LONGITUDINAL SAWED JOINT WHEN WIDTH OF CROSSOVER BECOMES GREATER THAN 16' AND LESS THAN 24'. WHEN WIDTH BECOMES GREATER THAN 24', A LONGITUDINAL SAWED AND LONGITUDINAL CONSTRUCTION JOINT SHALL BE CONSTRUCTED IN THE CROSSOVER.
(F) NORMAL SPACING OF TRANSVERSE CONTRACTION JOINTS.
(G) SEE CURRENT STD. DWG. RPM-150 OR RPM-152 , AS APPLICABLE FOR MORE DETAIL.

USE WITH CUR. STD. DWG. RPS-010

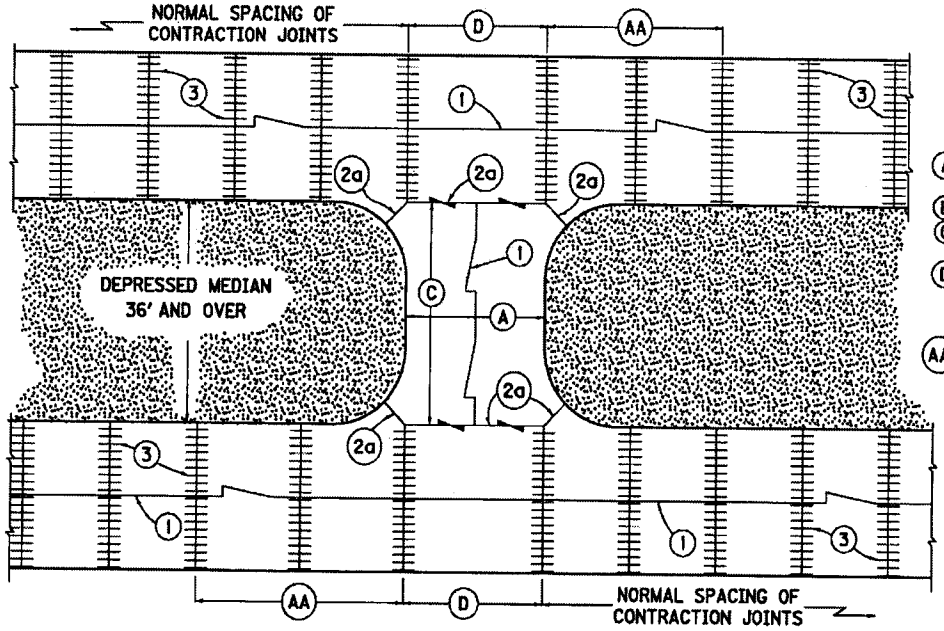
KENTUCKY
DEPARTMENT OF HIGHWAYS

CONCRETE
PAVEMENT JOINTS
TYPES AND SPACING

STANDARD DRAWING NO. RPS-033-06

SUBMITTED _____ DIRECTOR DIVISION OF DESIGN 12-2-02 DATE

APPROVED _____ STATE HIGHWAY ENGINEER 12-2-02 DATE



TYPICAL DIVIDED PAVEMENT WITH DEPRESSED MEDIAN AND CROSSOVER

NOTES

ALL INTEGRAL CURBS CONSTRUCTED WITH CONCRETE BASE OR PAVEMENT SHALL HAVE JOINTS COINCIDING WITH THE TRANSVERSE JOINTS AND OTHER JOINTS SHOWN ON THIS STANDARD DRAWING. THE JOINTS SHALL BE FILLED WITH ½" PREMOLDED EXPANSION JOINT FILLER, CUT TO THE REQUIRED SECTION.

SEE CURRENT STANDARD DRAWING RPS-010 FOR JOINT SYMBOLS AND DETAILS.

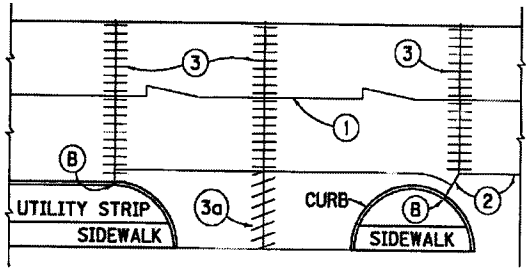
(A) EQUALLY DIVIDE AND CONSTRUCT LONGITUDINAL SAWED JOINT WHEN DISTANCE BECOMES GREATER THAN 16 FEET.

(B) ½" EXPANSION JOINT FILLER.

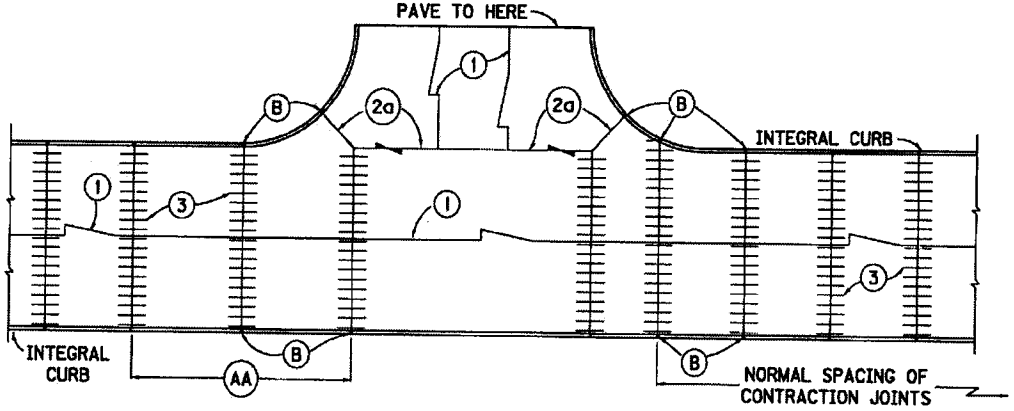
(C) TRANSVERSE CONTRACTION JOINT REQUIRED ONLY WHEN DISTANCE IN EXCESS OF NORMAL SPACING OF CONTRACTION JOINTS.

(D) NO CONTRACTION JOINTS REQUIRED BETWEEN THESE TWO CONTRACTION JOINTS WHEN DISTANCE IS LESS THAN NORMAL SPACING OF JOINTS. EQUALLY DIVIDE WHEN DISTANCE IS GREATER THAN 20 FEET AND LESS THAN 40 FEET.

(AA) THIS DISTANCE TO BE EQUALLY DIVIDED WHEN GREATER THAN 20 FEET AND LESS THAN 40 FEET.



COMMERCIAL ENTRANCE



CEMENT CONCRETE BASE WITH INTEGRAL CURB

USE WITH CUR. STD. DWG. RPS-010

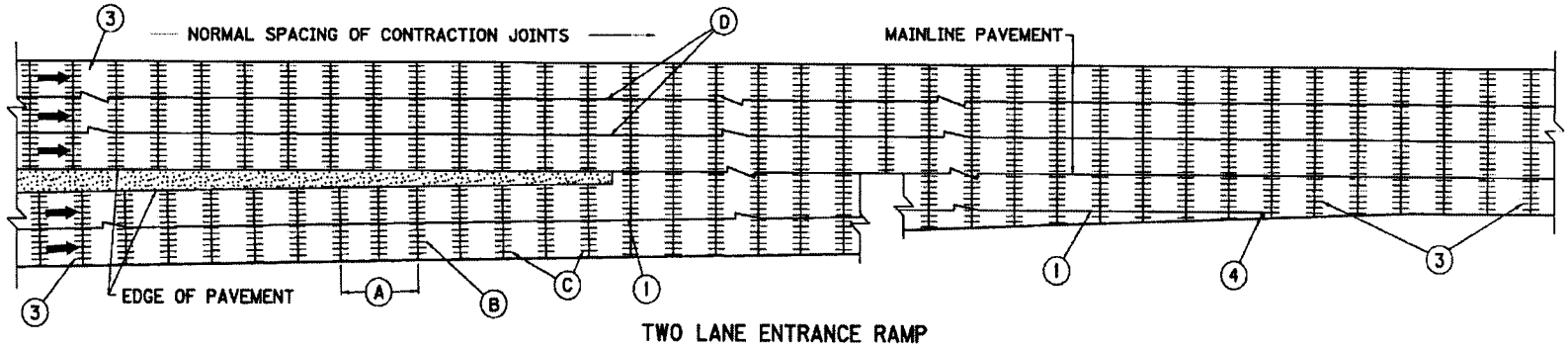
KENTUCKY
DEPARTMENT OF HIGHWAYS

CONCRETE
PAVEMENT JOINTS
TYPES AND SPACING

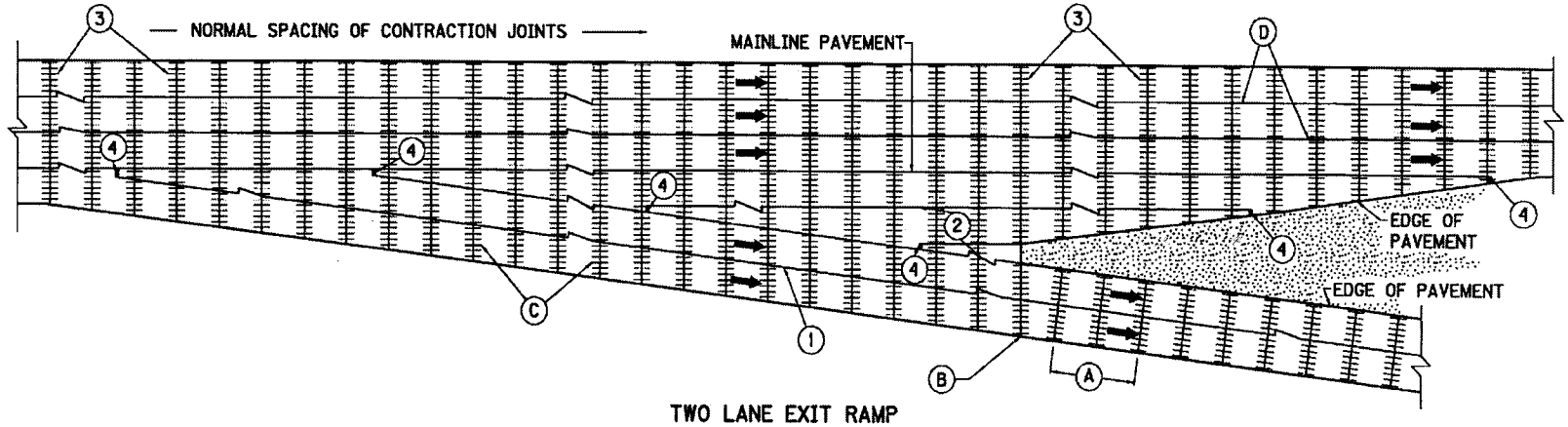
STANDARD DRAWING NO. RPS-034-06

SUBMITTED _____ 12-2-02 DATE

APPROVED _____ 12-2-02 DATE



TWO LANE ENTRANCE RAMP



TWO LANE EXIT RAMP

NOTES

NORMAL SPACING OF CONTRACTION JOINTS INDICATED ON THIS DRAWING ARE TO BE IN ACCORDANCE WITH SPACING INDICATED ON CURRENT STANDARD DRAWING RPN-015.

(A) ON CONSTRUCTION IF THE CONTRACTOR ELECTS TO BEGIN PAVING OPERATIONS FOR THE RAMP FROM A POINT OTHER THAN WHICH IS IMMEDIATELY OPPOSITE THE MAINLINE PAVEMENT, THIS DISTANCE SHALL BE EQUALLY DIVIDED WHEN IT BECOMES GREATER THAN 20 FEET AND LESS THAN 40 FEET.

(B) THIS CONTRACTION JOINT IN THE RAMP SHALL ALWAYS BE OPPOSITE THE CONTRACTION JOINT IN THE MAINLINE PAVEMENT.

(C) ALL CONTRACTION JOINTS IN THE RAMP IMMEDIATELY OPPOSITE THE MAINLINE PAVEMENT SHALL BE A CONTINUATION OF THE JOINTS IN THE MAINLINE PAVEMENT.

(D) SEE TYPICAL SECTIONS FOR SPECIFIC TYPE OF LONGITUDINAL JOINT.
SEE CURRENT STANDARD DRAWING RPS-010 FOR JOINT SYMBOL AND DETAIL.

USE WITH CUR. STD. DWG.
RPS-010

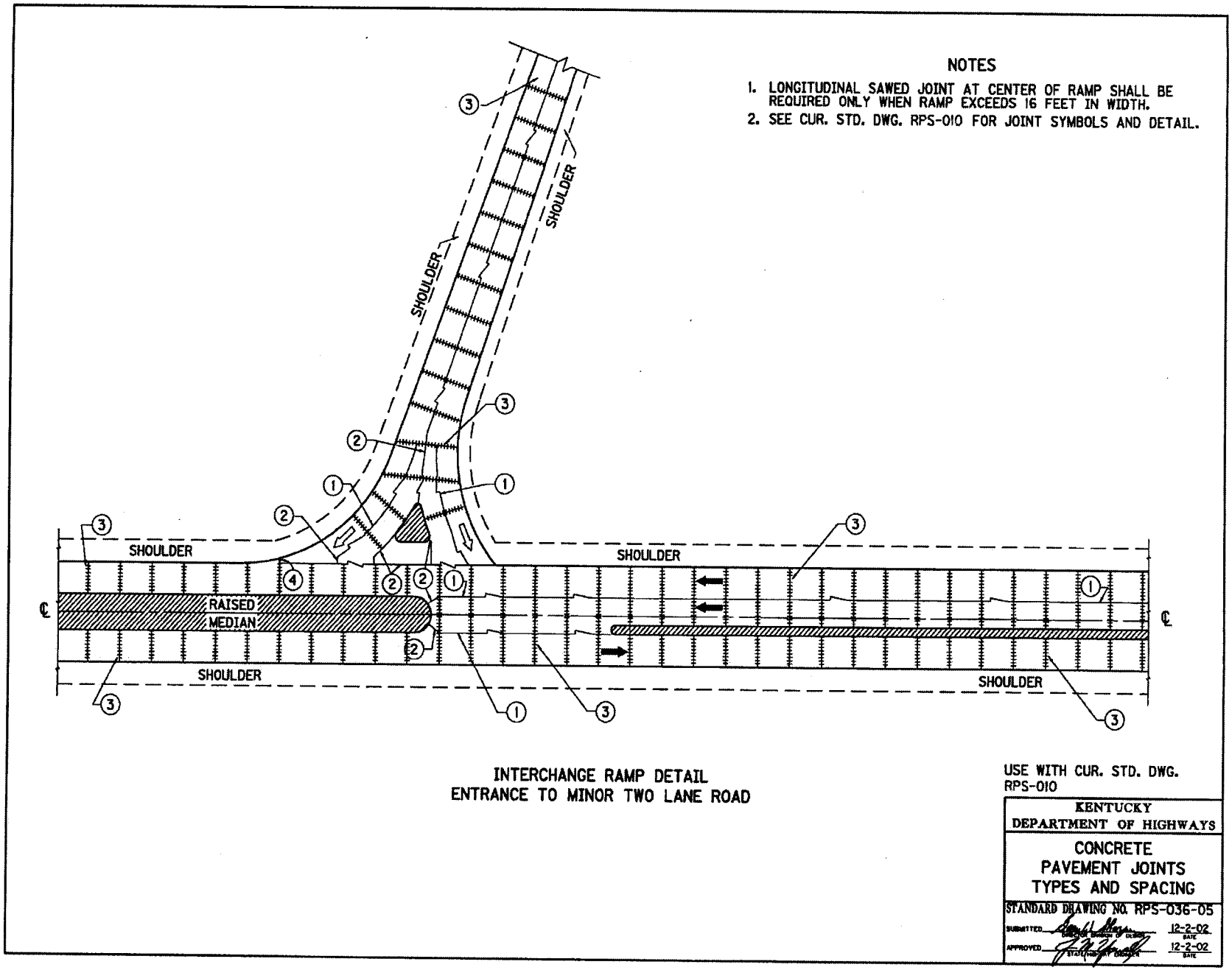
KENTUCKY
DEPARTMENT OF HIGHWAYS

CONCRETE
PAVEMENT JOINTS
TYPES AND SPACING

STANDARD DRAWING NO. RPS-035-05

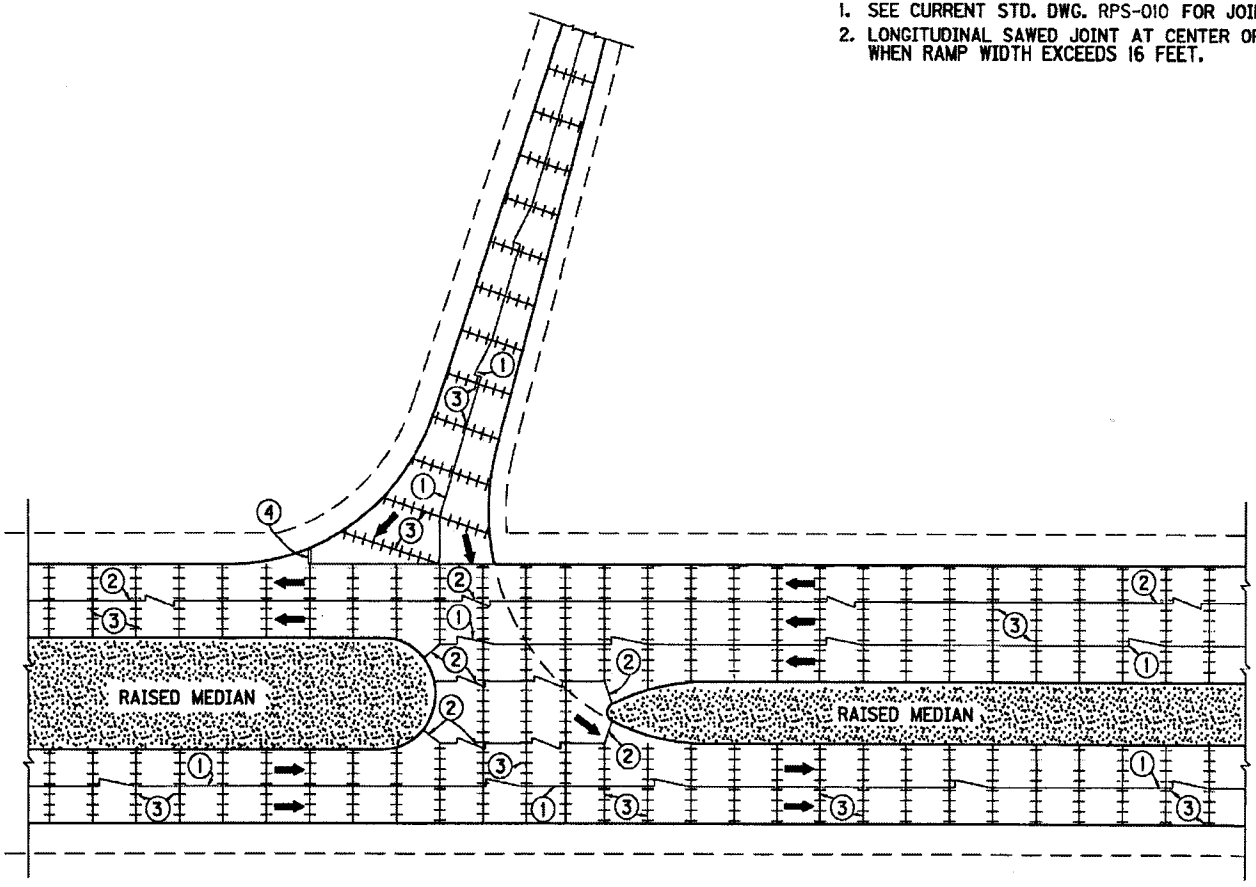
SUBMITTED _____ DIRECTOR DIVISION OF DESIGN 12-2-02 DATE

APPROVED _____ STATE HIGHWAY ENGINEER 12-2-02 DATE


NOTES
1. LONGITUDINAL SAWED JOINT AT CENTER OF RAMP SHALL BE REQUIRED ONLY WHEN RAMP EXCEEDS 16 FEET IN WIDTH.
2. SEE CUR. STD. DWG. RPS-010 FOR JOINT SYMBOLS AND DETAIL.
SHOULDER
SHOULDER
SHOULDER
SHOULDER
SHOULDER
RAISED MEDIAN
℄
℄
INTERCHANGE RAMP DETAIL
ENTRANCE TO MINOR TWO LANE ROAD
USE WITH CUR. STD. DWG. RPS-010
KENTUCKY DEPARTMENT OF HIGHWAYS
CONCRETE PAVEMENT JOINTS TYPES AND SPACING
STANDARD DRAWING NO. RPS-036-05
SUBMITTED
DIRECTOR DIVISION OF DESIGN
12-2-02
DATE
APPROVED
STATE HIGHWAY ENGINEER
12-2-02
DATE

NOTES

1. SEE CURRENT STD. DWG. RPS-010 FOR JOINT SYMBOLS AND DETAIL.
2. LONGITUDINAL SAWED JOINT AT CENTER OF RAMP SHALL BE REQUIRED ONLY WHEN RAMP WIDTH EXCEEDS 16 FEET.



INTERCHANGE RAMP DETAIL
ENTRANCE TO MINOR FOUR LANE ROAD

USE WITH CUR. STD. DWG.
RPS-010

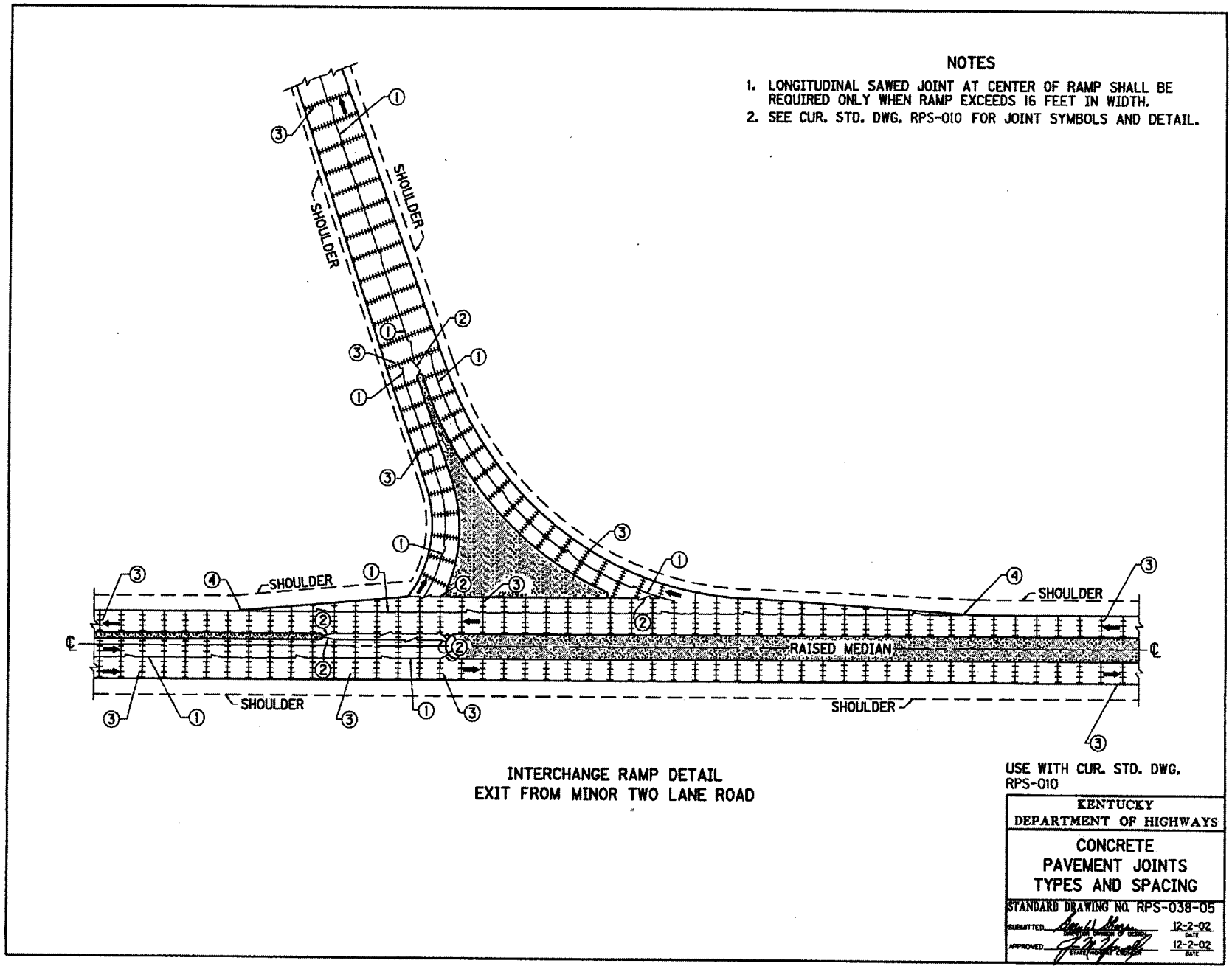
KENTUCKY
DEPARTMENT OF HIGHWAYS

CONCRETE
PAVEMENT JOINTS
TYPES AND SPACING

STANDARD DRAWING NO. RPS-037-05

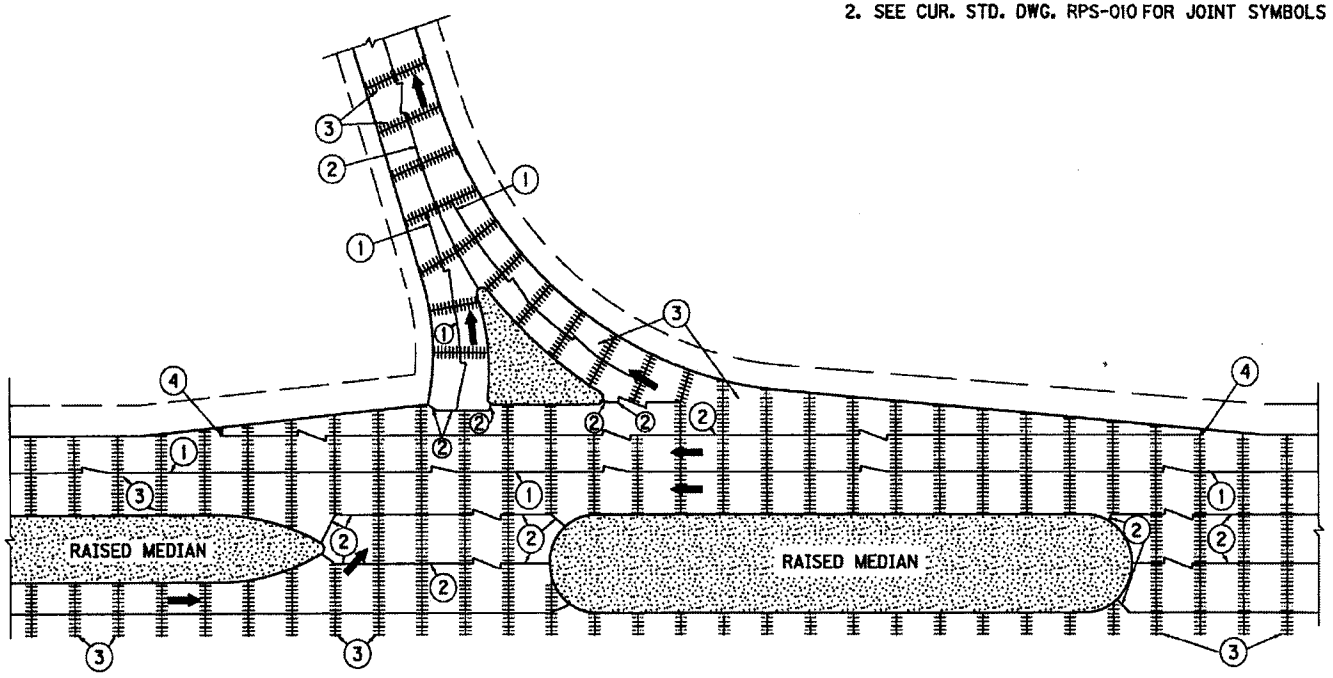
SUBMITTED _____ 12-2-02 DATE
DIRECTOR DIVISION OF DESIGN

APPROVED _____ 12-2-02 DATE
STATE HIGHWAY ENGINEER


NOTES
1. LONGITUDINAL SAWED JOINT AT CENTER OF RAMP SHALL BE REQUIRED ONLY WHEN RAMP EXCEEDS 16 FEET IN WIDTH.
2. SEE CUR. STD. DWG. RPS-010 FOR JOINT SYMBOLS AND DETAIL.
SHOULDER
SHOULDER
SHOULDER
SHOULDER
SHOULDER
SHOULDER
RAISED MEDIAN
INTERCHANGE RAMP DETAIL
EXIT FROM MINOR TWO LANE ROAD
USE WITH CUR. STD. DWG. RPS-010
KENTUCKY DEPARTMENT OF HIGHWAYS
CONCRETE PAVEMENT JOINTS TYPES AND SPACING
STANDARD DRAWING NO. RPS-038-05
SUBMITTED 12-2-02
APPROVED 12-2-02

NOTES

1. LONGITUDINAL SAWED JOINT AT CENTER OF RAMP SHALL BE REQUIRED ONLY WHEN RAMP EXCEEDS 16 FEET IN WIDTH.
2. SEE CUR. STD. DWG. RPS-010 FOR JOINT SYMBOLS AND DETAIL.



INTERCHANGE RAMP DETAIL
EXIT FROM MINOR FOUR LANE ROAD

USE WITH CUR. STD. DWG.
RPS-010

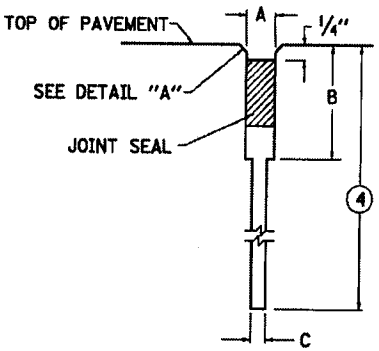
KENTUCKY
DEPARTMENT OF HIGHWAYS

CONCRETE
PAVEMENT JOINTS
TYPES AND SPACING

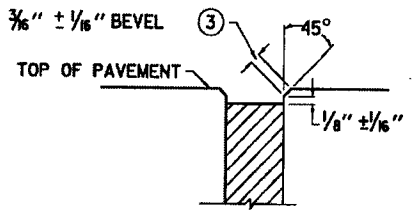
STANDARD DRAWING NO. RPS-039-05

SUBMITTED _____ DIRECTOR DIVISION OF DESIGN 12-2-02 DATE

APPROVED _____ STATE HIGHWAY ENGINEER 12-2-02 DATE



JOINT SHAPE FOR
TRANSVERSE SAWED CONTRACTION JOINT



DETAIL "A"

JOINT SPACING	DIMENSIONS A	B	C	SEAL WIDTH UNCOMPRESSED
15'-0"	3/8"	2"	1/8" TO 3/8"	11/16"
25'-0"	1/2"	2"	1/8" TO 1/2"	1"
50'-0"	5/8"	2"	1/8" TO 5/8"	1 1/4"

- NOTES -

PAYMENT FOR ALL WORK SHALL BE INCIDENTAL TO THE UNIT PRICE BID PER SQ. YD. OF PAVEMENT.

TOLERANCES ON ALL JOINT WIDTH DIMENSIONS PLUS OR MINUS 1/16".

INSTALLATION OF PREFORMED POLYCHLOROPRENE SEALS (NEOPRENE) SHALL BE IN ACCORDANCE WITH ARTICLE 501.03.18 OF THE CURRENT STANDARD SPECIFICATIONS, EXCEPT TRANSVERSE EXPANSION JOINTS SHALL RECEIVE PREFORMED SEALS IN ACCORDANCE WITH THIS DRAWING .

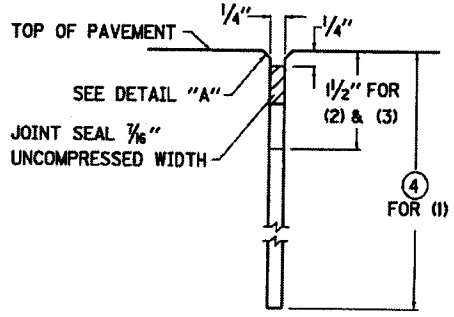
(1) THE REMAINING JOINT SHALL BE IN ACCORDANCE WITH CURRENT STD. DWG. RPS-010 AND RPS-020.

(2) ALL LONGITUDINAL AND TRANSVERSE SAWED CONSTRUCTION JOINTS SHALL BE CUT TO THE DEPTH SHOWN AND SHALL BE SEALED WITH HOT POURED ELASTIC JOINT SEAL.

(3) THESE EDGES SHALL BE BEVELED USING A CUTTING OR GRINDING DEVICE .

(4) JOINT DEPTH IS T/3 OR 4" WHICHEVER IS LESS.

T = PAVEMENT THICKNESS

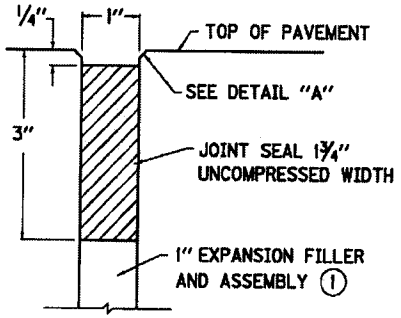


JOINT SHAPE FOR

(1) LONGITUDINAL SAWED JOINT (TIED)

(2) LONGITUDINAL SAWED CONSTRUCTION JOINT (TIED) (2)

(3) TRANSVERSE SAWED CONSTRUCTION JOINT (TIED) (2)



JOINT SHAPE FOR
TRANSVERSE EXPANSION JOINT

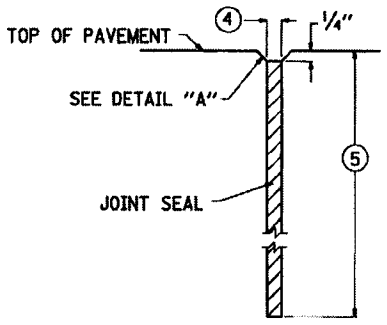
KENTUCKY
DEPARTMENT OF HIGHWAYS

PREFORMED COMPRESSION JOINT SEAL FOR CONCRETE PAVEMENT

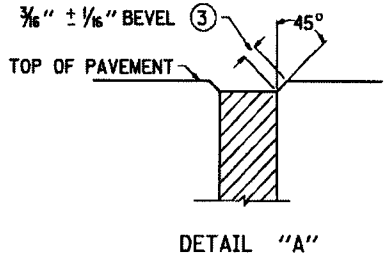
STANDARD DRAWING NO. RPX-010-04

SUBMITTED _____ DIRECTOR, DIVISION OF DESIGN 12-2-02 DATE

APPROVED _____ STATE HIGHWAY ENGINEER 12-2-02 DATE



JOINT SHAPE FOR
TRANSVERSE SAWED CONTRACTION JOINT



DETAIL "A"

- NOTES -

PAYMENT FOR ALL WORK SHALL BE INCIDENTAL TO THE UNIT PRICE BID PER SQ. YD. OF PAVEMENT.

(1) THE REMAINING JOINT SHALL BE IN ACCORDANCE WITH CURRENT STD. DWG. RPS-010 AND RPS-020.

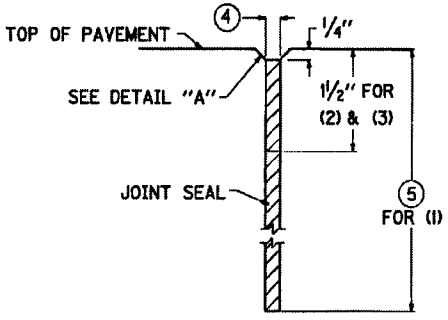
2. ALL LONGITUDINAL AND TRANSVERSE SAWED JOINTS SHALL BE CUT TO THE DEPTH SHOWN AND SHALL BE SEALED WITH HOT POURED ELASTIC JOINT SEAL.

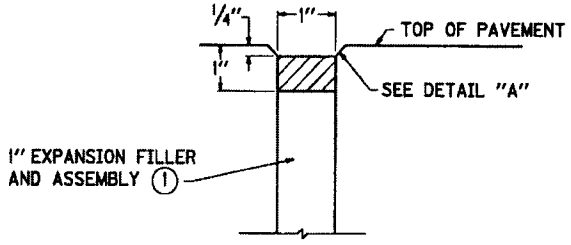
(3) THESE EDGES SHALL BE BEVELED USING A CUTTING OR GRINDING DEVICE .

(4) 1/8" MIN. - 1/4" MAX.

(5) JOINT DEPTH IS T/3 OR 4" WHICHEVER IS LESS.

T = PAVEMENT THICKNESS





JOINT SHAPE FOR
TRANSVERSE EXPANSION JOINT

(1) LONGITUDINAL SAWED JOINT (TIED)

(2) LONGITUDINAL SAWED CONSTRUCTION JOINT (TIED)

(3) TRANSVERSE SAWED CONSTRUCTION JOINT (TIED)

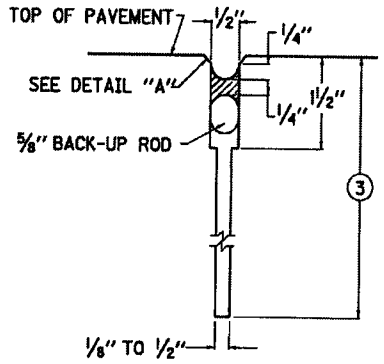
KENTUCKY
DEPARTMENT OF HIGHWAYS

HOT-POURED ELASTIC
JOINT SEALS FOR
CONCRETE PAVEMENT

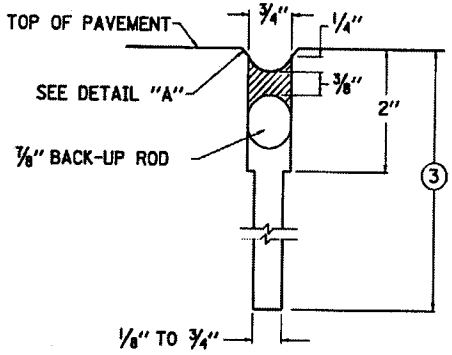
STANDARD DRAWING NO. RPX-015-03

SUBMITTED _____ DIRECTOR DIVISION OF DESIGN 12-2-02 DATE

APPROVED _____ STATE HIGHWAY ENGINEER 12-2-02 DATE



JOINT SHAPE FOR
TRANSVERSE SAWED CONTRACTION JOINT
(WHEN SLAB LENGTH DOES NOT EXCEED 25'-0")



JOINT SHAPE FOR
TRANSVERSE SAWED CONTRACTION JOINT
(WHEN SLAB LENGTH EXCEEDS 25'-0")

- NOTES -

T = PAVEMENT THICKNESS.

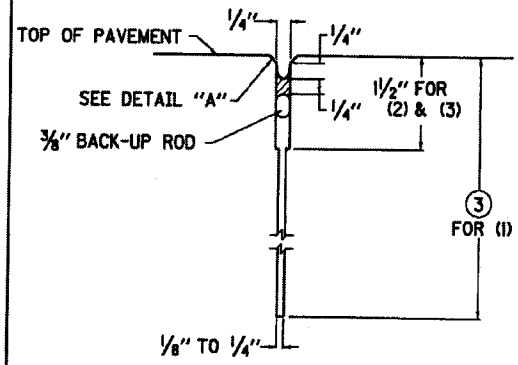
PAYMENT FOR WORK SHALL BE INCIDENTAL TO THE UNIT PRICE PER SQ. YD. OF PAVEMENT.

(1) THE REMAINING JOINT SHALL BE IN IN ACCORDANCE WITH CURRENT STD. DWGS. RPS-020 AND RPS-010.

(2) THESE EDGES SHALL BE BEVELED USING A CUTTING OR GRINDING DEVICE.

JOINT TOLERANCES : SAW CUT DEPTH -0" TO + 1/2"
SAW CUT WIDTH -0" TO + 1/16"
SEAL BEAD THICKNESS -0" TO + 1/8"

(3) JOINT DEPTH IS T/3 OR 4" WHICHEVER IS LESS.

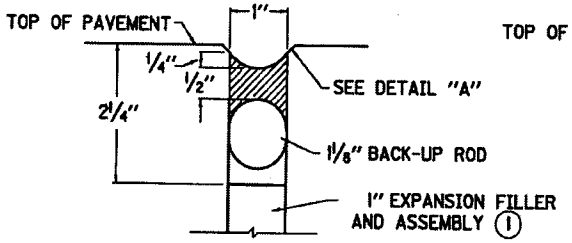


JOINT SHAPE FOR

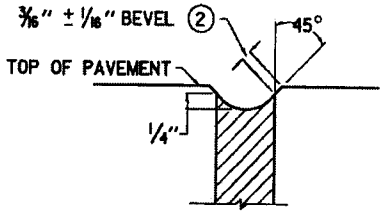
(1) LONGITUDINAL SAWED JOINT (TIED)

(2) LONGITUDINAL SAWED CONSTRUCTION JOINT (TIED)

(3) TRANSVERSE SAWED CONSTRUCTION JOINT (TIED)



JOINT SHAPE FOR
TRANSVERSE EXPANSION JOINT



DETAIL "A"

KENTUCKY DEPARTMENT OF HIGHWAYS
SILICONE RUBBER SEALS FOR CONCRETE PAVEMENT
STANDARD DRAWING NO. RPX-020-05
SUBMITTED ... DIRECTOR DIVISION OF DESIGN ... 12-2-02 DATE
APPROVED ... STATE HIGHWAY ENGINEER ... 12-2-02 DATE

POST-BID INSERT

Bid Tabulation

Bid Opening 08/24/14
New Unit Prices Effective 10/09/14

2014 Construction Unit Price Contract
Bid Opening: 2:00 PM Local Time, August 25, 2014

Bid Tabulation - Bid No. 107-2014
Effective October 9, 2014.

Lexington-Fayette Urban County Government

			ASL Excavating Inc	Bluegrass Contracting Corp.	L-M Asphalt Partners Ltd., dba ATS Construction	Sensabaugh Design and Construction LLC	The Allen Company	Todd Johnson Contracting	Tom Chestnut Excavation and Construction LLC	Woodall Construction Co.	ZKB Services LLC
#	Item	Unit	Unit Price								
1	Excavation	CY	14.50	15.00	11.50	11.50	17.35	15.00	12.00	12.00	75.00
2	Embankment	CY	16.00	15.00	11.50	13.00	19.45	30.00	12.00	12.00	~~no bid~~
3	Rock Excavation (Mechanical)	CY	37.25	250.00	200.00	300.00	270.00	150.00	200.00	175.00	65.00
4	Remove Portland Cement Concrete Pavement	SY	28.50	25.00	25.00	14.00	41.25	80.00	10.00	10.00	25.50
5	Remove Curb and Gutter	LF	8.00	7.00	6.00	11.00	16.25	60.00	8.00	5.00	11.50
6	Remove Sidewalk, Entrance Pavement	SY	10.30	12.00	11.00	10.50	29.00	80.00	11.00	10.00	22.50
7	Remove Bituminous Concrete Pavement	SY	7.00	6.00	8.00	6.50	11.50	80.00	11.00	5.00	25.50
8	Remove Pipes less than 24" - up to 8' deep	LF	12.00	15.00	15.00	11.00	21.80	110.00	12.00	10.00	60.00
9	Remove Pipes 30"- 48" - up to 8' deep	LF	18.00	20.00	20.00	16.00	29.00	110.00	16.00	13.00	68.00
10	Remove Fence	LF	3.00	5.00	4.50	8.00	5.00	15.00	5.00	5.00	2.25
11	Remove Headwalls and Inlet Structures	EA	700.00	600.00	600.00	450.00	815.00	1,000.00	600.00	450.00	750.00
12	Remove Tree (5" dia. to 12" dia.)	EA	250.00	500.00	380.00	300.00	550.00	~~no bid~~	500.00	300.00	225.00
13	Remove Tree (>12" dia. to 24" dia.)	EA	595.00	800.00	650.00	500.00	1,625.00	~~no bid~~	800.00	750.00	275.00
14	Remove Tree (>24" dia. to 36" dia.)	EA	1,300.00	1,200.00	1,100.00	1,000.00	2,375.00	~~no bid~~	1,200.00	975.00	325.00
15	Remove Tree (>36" dia. and up)	EA	2,500.00	2,500.00	1,800.00	1,200.00	3,000.00	~~no bid~~	1,500.00	1,100.00	425.00
16	Dense Graded Aggregate Base	TN	22.00	25.00	25.00	19.90	25.50	25.00	24.00	22.00	52.00
17	No. 2 Stone	TN	23.00	25.00	26.00	19.90	31.50	25.00	24.00	22.00	57.00
18	No. 9 Stone	TN	24.00	25.00	26.00	19.90	31.50	25.00	24.00	23.00	57.00
19	No. 57 Stone	TN	21.00	25.00	24.00	19.90	31.50	25.00	24.00	22.00	54.00
20	Steel Reinforcement for Concrete	LB	1.20	2.00	2.00	2.00	2.50	5.00	2.00	5.00	6.00
21	Unfinished Concrete less than 10 CY	CY	140.00	180.00	165.00	180.00	215.00	150.00	150.00	175.00	35.00
22	Unfinished Concrete more than 10 CY	CY	135.00	180.00	155.00	180.00	210.00	150.00	150.00	150.00	35.50
23	Formed Class A Concrete less than 10 CY	CY	800.00	750.00	775.00	440.00	1,200.00	850.00	600.00	400.00	41.50
24	Formed Class A Concrete more than 10 CY	CY	590.00	650.00	675.00	440.00	1,100.00	650.00	600.00	400.00	42.50
25	4-1/2" Concrete Sidewalk	SY	38.00	50.00	38.00	34.50	44.50	~~no bid~~	50.00	32.00	35.90
26	6" Concrete Sidewalk	SY	45.00	60.00	46.00	45.00	54.00	~~no bid~~	54.00	35.00	36.75
27	6" Concrete Entrance Pavement	SY	61.00	60.00	50.00	45.00	65.00	~~no bid~~	54.00	42.00	38.50

#	Item	Unit	ASL Excavating Inc	Bluegrass Contracting Corp.	L-M Asphalt Partners Ltd., dba ATS Construction	Sensabaugh Design and Construction LLC	The Allen Company	Todd Johnson Contracting	Tom Chestnut Excavation and Construction LLC	Woodall Construction Co.	ZKB Services LLC
			Unit Price								
28	Sidewalk Ramp	SY	102.00	60.00	72.00	70.00	82.00	~~no bid~~	54.00	70.00	91.00
29	Header Curb	LF	30.00	20.00	25.00	19.80	31.75	~~no bid~~	22.00	20.00	23.00
30	Curb and Gutter, Type 1	LF	21.50	20.00	20.00	19.80	26.00	~~no bid~~	22.00	20.00	21.00
31	Curb and Gutter, Type 4	LF	25.00	20.00	20.00	19.80	26.00	~~no bid~~	24.00	20.00	21.00
32	Bituminous Pavement Milling and Texturing	TN	30.85	50.00	34.00	38.00	55.00	~~no bid~~	100.00	50.00	~~no bid~~
33	Bituminous Base	TN	60.35	85.00	78.60	80.00	87.50	~~no bid~~	125.00	95.00	~~no bid~~
34	Class I, Bituminous Surface less than 50 tons	TN	73.65	105.00	86.75	85.00	136.50	~~no bid~~	140.00	120.00	~~no bid~~
35	Class I, Bituminous Surface greater than 50 tons	TN	66.15	92.50	92.25	79.00	93.00	~~no bid~~	125.00	95.00	~~no bid~~
36	Bituminous Material for Tack	TN	600.00	850.00	750.00	500.00	800.00	~~no bid~~	575.00	700.00	~~no bid~~
37	Type A Surface Inlet	EA	4,000.00	2,000.00	2,400.00	2,400.00	3,550.00	2,875.00	2,000.00	2,000.00	750.00
38	Type B Surface Inlet	EA	3,800.00	2,000.00	2,400.00	2,400.00	3,550.00	2,700.00	2,000.00	2,000.00	950.00
39	Curb Box Inlet Type A	EA	4,200.00	3,200.00	3,400.00	2,600.00	4,200.00	3,648.00	2,500.00	2,700.00	1,150.00
40	Curb Box Inlet Type B	EA	3,975.00	3,200.00	3,500.00	2,900.00	4,200.00	3,640.00	2,600.00	2,800.00	1,450.00
41	Curb Box Inlet Type C	EA	3,700.00	3,200.00	3,700.00	2,600.00	4,200.00	~~no bid~~	2,800.00	3,000.00	1,850.00
42	Curb Box Inlet Type D	EA	2,850.00	2,500.00	2,900.00	2,800.00	3,125.00	2,273.00	2,800.00	3,000.00	2,101.00
43	Curb Box Inlet Type B (KDOH)	EA	3,900.00	3,300.00	3,600.00	2,800.00	4,200.00	3,010.00	2,800.00	3,600.00	2,250.00
44	Drop Box Inlet Type 13 (KDOH)	EA	2,750.00	3,300.00	2,600.00	2,800.00	4,385.00	3,200.00	3,000.00	5,200.00	2,300.00
45	Drop Box Inlet Type 16 (KDOH)	EA	3,000.00	3,300.00	2,700.00	2,600.00	3,245.00	2,324.70	3,000.00	5,200.00	2,650.00
46	Lex Storm Sewer Manhole (4' dia.) (0-8' No rock)	EA	3,000.00	2,800.00	2,300.00	2,000.00	2,475.00	2,699.00	2,500.00	2,000.00	950.00
47	Lex Storm Sewer Manhole (5' dia.) (0-8' No rock)	EA	5,000.00	3,200.00	2,900.00	2,600.00	3,510.00	3,202.00	3,500.00	2,800.00	1,125.00
48	Lex Storm Sewer Manhole (6' dia.) (0-8' No rock)	EA	6,000.00	4,200.00	4,200.00	2,900.00	6,100.00	4,575.00	4,500.00	3,600.00	1,350.00
49	Pipe Tie-in into Manhole or Curb Box Inlet	EA	800.00	750.00	600.00	600.00	775.00	1,575.00	800.00	600.00	~~no bid~~
50	15" RCP Storm Sewer (0-8' No rock)	LF	56.00	42.00	44.00	34.00	51.95	85.12	45.00	35.00	93.75
51	18" RCP Storm Sewer (0-8' No rock)	LF	66.00	47.00	47.00	39.00	55.00	87.16	45.00	40.00	100.00
52	24" RCP Storm Sewer (0-8' No rock)	LF	71.00	52.00	57.00	49.00	72.50	96.34	65.00	50.00	128.50
53	30" RCP Storm Sewer (0-8' No rock)	LF	87.00	67.00	74.00	55.00	82.00	110.75	75.00	68.00	168.25
54	36" RCP Storm Sewer (0-8' No rock)	LF	120.00	82.00	93.00	75.00	98.00	137.91	100.00	80.00	206.75
55	42" RCP Storm Sewer (0-8' No rock)	LF	130.00	112.00	120.00	110.00	119.00	169.45	130.00	115.00	243.78
56	48" RCP Storm Sewer (0-8' No rock)	LF	180.00	127.00	140.00	160.00	135.00	197.99	150.00	125.00	262.50
57	15" HDPE Storm Sewer (0-8' No rock)	LF	50.00	38.00	43.00	24.00	50.00	85.00	45.00	36.00	118.00

#	Item	Unit	ASL Excavating Inc	Bluegrass Contracting Corp.	L-M Asphalt Partners Ltd., dba ATS Construction	Sensabaugh Design and Construction LLC	The Allen Company	Todd Johnson Contracting	Tom Chestnut Excavation and Construction LLC	Woodall Construction Co.	ZKB Services LLC
			Unit Price								
58	18" HDPE Storm Sewer (0-8' No rock)	LF	54.50	40.00	46.00	32.00	53.00	91.00	50.00	38.00	128.00
59	24" HDPE Storm Sewer (0-8' No rock)	LF	60.00	50.00	56.00	42.00	70.00	104.00	60.00	40.00	181.25
60	30" HDPE Storm Sewer (0-8' No rock)	LF	82.00	60.00	73.00	50.00	81.00	118.00	70.00	50.00	218.25
61	36" HDPE Storm Sewer (0-8' No rock)	LF	105.00	75.00	92.00	55.00	92.00	122.56	85.00	60.00	250.00
62	15" PP Storm Sewer (0-8' No rock)	LF	52.00	38.00	45.00	28.00	45.00	85.12	no bid	no bid	118.75
63	18" PP Storm Sewer (0-8' No rock)	LF	56.50	40.00	49.00	30.00	50.00	87.16	no bid	no bid	140.50
64	24" PP Storm Sewer (0-8' No rock)	LF	62.50	50.00	59.00	38.00	60.00	96.34	no bid	no bid	183.50
65	30" PP Storm Sewer (0-8' No rock)	LF	85.00	60.00	75.00	48.00	72.00	101.57	no bid	no bid	218.75
66	36" PP Storm Sewer (0-8' No rock)	LF	108.00	75.00	95.00	49.00	85.00	122.56	no bid	no bid	250.00
67	15" Elliptical RCP Storm Sewer	LF	62.00	65.00	56.00	50.00	69.00	no bid	65.00	50.00	118.75
68	18" Elliptical RCP Storm Sewer	LF	72.00	70.00	64.00	55.00	85.00	no bid	75.00	55.00	145.75
69	24" Elliptical RCP Storm Sewer	LF	78.00	85.00	77.00	60.00	104.00	no bid	85.00	65.00	167.50
70	30" Elliptical RCP Storm Sewer	LF	93.00	100.00	88.00	70.00	137.00	no bid	110.00	85.00	181.50
71	36" Elliptical RCP Storm Sewer	LF	136.00	130.00	112.00	90.00	170.00	no bid	140.00	105.00	218.50
72	42" Elliptical RCP Storm Sewer	LF	145.00	150.00	140.00	110.00	202.00	no bid	160.00	135.00	250.00
73	48" Elliptical RCP Storm Sewer	LF	201.00	185.00	170.00	140.00	260.00	no bid	175.00	140.00	262.50
74	Internal Inspection of Sewer Pipe: CCTV	LF	no bid	5.00	12.00	2.00	2.50	no bid	no bid	8.00	no bid
75	15" Straight Headwall - Standard or Raised	EA	1,300.00	1,500.00	1,500.00	950.00	1,500.00	1,550.00	1,200.00	1,250.00	1,250.00
76	18" Straight Headwall - Standard or Raised	EA	1,400.00	1,600.00	1,600.00	1,100.00	1,500.00	1,650.00	1,500.00	1,900.00	1,500.00
77	24" Straight Headwall - Standard or Raised	EA	1,675.00	1,800.00	2,100.00	1,350.00	2,050.00	1,771.00	2,500.00	2,150.00	1,750.00
78	15" Pipe Culvert Headwall	EA	1,200.00	1,400.00	1,600.00	900.00	1,200.00	1,543.00	1,000.00	1,000.00	1,325.00
79	18" Pipe Culvert Headwall	EA	1,300.00	1,500.00	1,700.00	1,100.00	1,250.00	1,645.00	2,500.00	1,200.00	1,600.00
80	24" Pipe Culvert Headwall	EA	1,450.00	1,700.00	2,200.00	1,150.00	1,300.00	1,740.00	2,500.00	1,400.00	1,950.00
81	30" Pipe Culvert Headwall	EA	1,900.00	2,000.00	2,300.00	1,300.00	1,900.00	2,015.00	4,500.00	1,800.00	2,050.00
82	36" Pipe Culvert Headwall	EA	2,400.00	2,500.00	2,400.00	1,500.00	2,200.00	2,360.00	4,000.00	2,300.00	2,250.00
83	42" Pipe Culvert Headwall	EA	2,750.00	4,000.00	2,800.00	1,700.00	2,500.00	2,665.00	5,000.00	2,900.00	2,550.00
84	48" Pipe Culvert Headwall	EA	3,600.00	5,000.00	3,500.00	2,000.00	3,350.00	3,087.00	4,000.00	3,500.00	2,750.00
85	18" Sloped and Flared Box Inlet-Outlet	EA	2,250.00	1,800.00	2,600.00	2,600.00	2,150.00	2,160.00	2,800.00	2,500.00	2,250.00
86	24" Sloped and Flared Box Inlet-Outlet	EA	2,800.00	2,400.00	3,250.00	3,200.00	2,950.00	2,787.00	4,500.00	3,000.00	2,450.00
87	30" Sloped and Flared Box Inlet-Outlet	EA	4,100.00	3,000.00	4,000.00	4,200.00	4,600.00	2,075.00	6,500.00	4,000.00	2,650.00

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			Unit Price								
88	36" Sloped and Flared Box Inlet-Outlet	EA	5,800.00	3,800.00	4,600.00	6,500.00	5,900.00	4,221.00	8,000.00	6,000.00	2,850.00
89	15" Impact Stilling Basin	EA	1,500.00	2,000.00	2,100.00	1,850.00	2,870.00	~~no bid~~	2,200.00	1,800.00	~~no bid~~
90	18" Impact Stilling Basin	EA	1,600.00	2,100.00	2,300.00	1,950.00	3,085.00	3,801.00	2,200.00	2,000.00	~~no bid~~
91	24" Impact Stilling Basin	EA	2,000.00	2,300.00	2,550.00	2,200.00	4,000.00	3,901.00	3,000.00	2,200.00	~~no bid~~
92	30" Impact Stilling Basin	EA	2,700.00	2,500.00	2,800.00	2,900.00	5,250.00	~~no bid~~	3,000.00	2,400.00	~~no bid~~
93	36" Impact Stilling Basin	EA	3,350.00	3,000.00	3,200.00	6,500.00	6,545.00	7,995.00	3,000.00	2,800.00	~~no bid~~
94	48" Impact Stilling Basin	EA	4,200.00	3,500.00	3,800.00	7,200.00	8,000.00	8,140.00	4,000.00	3,100.00	~~no bid~~
95	Bottom Paved Ditch	SY	88.00	80.00	55.00	38.00	90.00	~~no bid~~	90.00	48.00	39.00
96	Aggregate Channel Lining for Slope Protection	TN	27.00	35.00	36.00	30.00	42.50	76.00	30.00	40.00	~~no bid~~
97	Seeding and Protection	SY	1.20	2.50	3.00	1.50	2.75	1.00	2.00	3.50	28.50
98	Sodding	SY	5.50	8.00	9.00	4.00	6.80	8.00	4.25	6.00	24.50
99	Gabion Mattress Channel Lining	CY	145.00	200.00	170.00	140.00	275.00	~~no bid~~	190.00	165.00	~~no bid~~
100	4" HDPE Perforated Pipe	LF	7.00	10.00	15.00	5.00	15.00	20.00	5.00	6.00	7.50
101	6" HDPE Perforated Pipe	LF	9.00	12.00	16.00	7.00	15.00	37.00	8.00	12.00	9.50
102	4" PVC Pipe	LF	20.00	20.00	24.00	11.00	27.00	62.00	15.00	18.00	7.00
103	6" PVC Pipe	LF	23.00	25.00	26.00	13.50	32.00	64.21	16.00	25.00	9.00
104	8" PVC Sanitary Sewer (0-8' No Rock)	LF	30.00	65.00	36.00	24.00	34.10	71.37	25.00	28.00	11.00
105	10" PVC Sanitary Sewer (0-8' No Rock)	LF	36.00	75.00	41.00	27.00	35.60	82.90	35.00	30.00	13.00
106	12" PVC Sanitary Sewer (0-8' No Rock)	LF	46.00	80.00	50.00	30.00	40.55	93.50	39.00	33.00	15.00
107	15" PVC Sanitary Sewer (0-8' No Rock)	LF	54.00	85.00	52.00	33.00	50.20	101.14	45.00	40.00	17.00
108	18" PVC Sanitary Sewer (0-8' No Rock)	LF	68.00	90.00	58.00	38.00	80.00	120.00	55.00	50.00	19.00
109	8" Ductile Iron Sewer Pipe (0-8' No Rock)	LF	68.00	80.00	55.00	40.00	50.00	121.41	~~no bid~~	48.00	~~no bid~~
110	10" Ductile Iron Sewer Pipe (0-8' No Rock)	LF	74.00	85.00	58.00	50.00	59.50	147.51	~~no bid~~	55.00	~~no bid~~
111	12" Ductile Iron Sewer Pipe (0-8' No Rock)	LF	78.00	90.00	67.00	60.00	64.00	169.30	~~no bid~~	80.00	~~no bid~~
112	14" Ductile Iron Sewer Pipe (0-8' No Rock)	LF	110.00	95.00	75.00	70.00	92.00	183.09	~~no bid~~	95.00	~~no bid~~
113	Sanitary Sewer By-Pass Pumping	DAY	2,500.00	1,000.00	2,500.00	1,600.00	750.00	1,550.00	~~no bid~~	2,350.00	~~no bid~~
114	Two Way Sewer Service Cleanout	EA	750.00	500.00	650.00	300.00	375.00	674.85	~~no bid~~	560.00	~~no bid~~
115	4"x 8" Sanitary Sewer Tee & up to 6' of lateral pipe	EA	550.00	100.00	65.00	75.00	105.00	629.85	~~no bid~~	500.00	~~no bid~~
116	6"x 8" Sanitary Sewer Tee& up to 6' of lateral pipe	EA	600.00	105.00	80.00	90.00	115.00	679.85	~~no bid~~	600.00	~~no bid~~
117	Lex Sanitary Sewer Manhole (4' dia.) (0-8' No rock)	EA	3,000.00	2,400.00	2,400.00	2,000.00	2,600.00	2,654.00	~~no bid~~	2,000.00	~~no bid~~

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			Unit Price								
118	Lex Sanitary Sewer Manhole (5' dia.) (0-8' No rock)	EA	4,500.00	3,000.00	3,200.00	3,000.00	3,500.00	3,967.00	~~no bid~~	3,600.00	~~no bid~~
119	Lex Sanitary Sewer Manhole (6' dia.) (0-8' No rock)	EA	6,500.00	5,500.00	5,100.00	4,800.00	5,850.00	4,763.00	~~no bid~~	5,700.00	~~no bid~~
120	Manhole-Additional vertical depth > 8' (4' dia.)	VF	160.00	175.00	160.00	500.00	300.00	307.00	~~no bid~~	175.00	~~no bid~~
121	Manhole-Additional vertical depth > 8' (5' dia.)	VF	220.00	275.00	200.00	600.00	400.00	356.00	~~no bid~~	225.00	~~no bid~~
122	Manhole-Additional vertical depth > 8' (6' dia.)	VF	250.00	450.00	240.00	700.00	450.00	468.00	~~no bid~~	350.00	~~no bid~~
123	Manhole-Additional for adjustable frame and cover	EA	1,250.00	1,000.00	1,000.00	400.00	1,600.00	500.00	~~no bid~~	900.00	~~no bid~~
124	Woven Wire Fence 4' height	LF	8.00	15.00	12.50	10.00	20.00	38.00	10.00	10.00	4.25
125	Chain Link Fence 4' height	LF	19.50	25.00	23.00	15.00	35.00	80.00	14.00	12.00	6.25
126	Privacy Fence	LF	36.00	50.00	50.00	25.00	85.00	85.00	28.00	30.00	19.50
127	Backhoe (small) with Operator	HR	88.00	85.00	95.00	65.00	115.50	85.00	85.00	100.00	75.00
128	Dump Truck (single axle) with driver	HR	77.50	75.00	80.00	60.00	75.00	70.00	75.00	75.00	75.00
129	Dump Truck (tri-axle) with driver	HR	90.00	90.00	90.00	80.00	80.00	88.00	80.00	85.00	95.00
130	Jackhammer with Operator	HR	75.00	65.00	75.00	80.00	75.00	80.00	80.00	85.00	45.00
131	Skid Loader with Operator	HR	85.00	75.00	90.00	60.00	75.00	80.00	80.00	125.00	65.00
132	Check Dam	TN	32.00	50.00	35.00	30.00	50.00	500.00	55.00	43.00	~~no bid~~
133	Sediment Trap	CY	32.00	75.00	45.00	13.00	50.00	500.00	60.00	20.00	~~no bid~~
134	Sediment Pond	CY	36.00	60.00	45.00	13.00	40.00	1,500.00	35.00	20.00	~~no bid~~
135	Silt Fence	LF	2.60	5.00	3.25	3.00	3.50	3.00	5.00	500.00	3.75
136	Storm Drain Inlet Protection	EA	160.00	350.00	325.00	150.00	275.00	150.00	250.00	250.00	6.75
137	Filter Strip	SY	7.00	30.00	~~no bid~~	7.00	19.50	110.00	15.00	15.00	7.00
138	Stream Crossing	EA	3,500.00	7,500.00	8,500.00	3,000.00	5,000.00	6,600.00	3,800.00	8,000.00	~~no bid~~
139	Pump-Around Flow Diversion	DAY	2,500.00	600.00	225.00	600.00	2,400.00	450.00	1,200.00	3,000.00	~~no bid~~
140	Construction Dewatering	DAY	70.00	600.00	125.00	600.00	2,400.00	450.00	1,200.00	3,000.00	~~no bid~~
141	Geotextile Construction Type I	SY	1.80	4.00	2.00	2.70	5.25	5.80	9.00	6.00	5.00
142	Geotextile Construction Type II	SY	1.86	4.00	2.10	1.80	5.25	5.60	40.00	6.00	7.00
143	Geotextile Construction Type III	SY	1.90	4.00	2.00	1.50	5.25	5.50	8.00	6.00	9.00
144	Geotextile Construction Type IV	SY	1.92	4.00	2.10	2.40	5.25	5.10	8.00	12.00	11.00
145	Edge Key	LF	6.50	10.00	10.00	6.00	16.25	~~no bid~~	10.00	10.00	4.00
146	Pipe Plugging for Pipes less than or equal to 24"	EA	750.00	300.00	260.00	300.00	450.00	600.00	600.00	1,500.00	~~no bid~~
147	Pipe Plugging for Pipes 30"- 48"	EA	900.00	800.00	525.00	500.00	750.00	750.00	800.00	1,800.00	~~no bid~~

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			Unit Price								
148	Flowable Fill	CY	132.00	150.00	160.00	150.00	175.00	150.00	140.00	200.00	no bid
149	Fiber Reinforced PCC Pavement	CY	no bid	300.00	350.00	275.00	300.00	no bid	50.00	275.00	47.50
150	Single Block Masonry Retaining Wall	SF	no bid	30.00	32.00	20.00	26.00	125.00	35.00	30.00	12.50
151	Degradable Erosion Control Mat	SY	1.20	10.00	9.00	7.00	no bid	10.60	8.00	8.00	8.00
152	Turf Reinforcement Mat	SY	5.75	15.00	9.00	7.00	9.25	15.60	10.00	8.00	8.50
153	Project Sign	EA	750.00	800.00	800.00	600.00	550.00	450.00	1,000.00	600.00	475.00
154	Steel W Beam Guardrail and End Treatments	LF	no bid	no bid	no bid	50.00	54.00	no bid	36.00	130.00	53.50
155	Articulating Concrete Block	SY	no bid	315.00	no bid	500.00	no bid	no bid	800.00	80.00	14.50
156	Reinf Conc Pipe Crack Repairs and Manhole Rehab	LF	no bid	no bid	no bid	400.00	no bid	307.00	no bid	50.00	19.50
157	Saw cutting	LF	3.00	6.00	5.00	2.00	2.35	3.00	2.75	5.00	3.75
158	Precast Reinforced Concrete Box Culvert 3' X 2'	LF	no bid	600.00	335.00	350.00	375.00	1,540.00	1,500.00	575.00	62.00
159	Precast Reinforced Concrete Box Culvert 3' X 3'	LF	no bid	800.00	360.00	400.00	405.00	1,620.00	1,500.00	600.00	72.50
160	Precast Reinforced Concrete Box Culvert 4' X 2'	LF	435.00	800.00	365.00	420.00	435.00	1,580.00	1,500.00	650.00	84.50
161	Precast Reinforced Concrete Box Culvert 4' X 3'	LF	515.00	900.00	375.00	450.00	460.00	1,840.00	1,500.00	800.00	88.50
162	Detectable Warning Surface Tile-Overlay	SF	75.00	100.00	42.00	45.00	97.00	no bid	no bid	600.00	6.25
163	Detectable Warning Surface Tile-Imbedded	SF	60.00	100.00	42.00	60.00	375.00	no bid	350.00	600.00	8.25
164	Bulb-out: Gutter Cover	LF	no bid	no bid	175.00	28.00	no bid	no bid	no bid	no bid	24.50
165	Bulb-out: Asphalt Repair	SF	no bid	100.00	400.00	30.00	no bid	no bid	no bid	no bid	no bid
166	Grader with Operator	HR	170.00	130.00	185.00	95.00	140.00	150.00	100.00	175.00	195.00
167	Roller/Compactor with Operator	HR	94.00	90.00	165.00	65.00	115.00	85.00	100.00	175.00	175.00
168	Topsoil Placement	CY	26.00	150.00	30.00	60.00	22.50	35.00	20.00	30.00	49.00